
Profile of Nausea and Vomiting After Sectio Caesarea Surgery with Spinal Anesthesia at ST. Teresa Marampa Hospital

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Keywords	Abstract
Based learning model, Learning Outcomes Mathematic, critical thinking ability	Postoperative nausea and vomiting is a condition that can occur within 24 hours after surgery, and can impact patient harm and cause complications. This study aims to identify the incidence of nausea and vomiting in post-cesarean section patients with spinal anesthesia. This type of research is quantitative with descriptive retrospective research design. Researchers analyzed patient medical records at ST. Teresa Marampa Hospital from January to December 2023, with a sample of 80 respondents using the total sampling technique. The data collection tool used was an observation sheet. Of the 80 respondents, general characteristics based on age showed that most respondents were aged 26-35 years (45 people, 56.3%). Based on labor history, the majority were multiparous (43 people, 53.8%), and 100% of respondents had a history of at term pregnancy. Most respondents did not experience nausea and vomiting (62 people, 77.5%). The profile of nausea and vomiting after cesarean section with spinal anesthesia at ST Hospital. Teresa Marampa Hospital showed that 77.5% of respondents did not experience nausea and vomiting. This finding has important clinical implications, as these results may help in clinical decision making regarding postoperative management. By understanding the profile of nausea and vomiting, medical personnel can design more effective prevention strategies, improve patient comfort, and reduce the risk of complications.

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INTRODUCTION

Labor and birth are normal physiological events. The birth of a baby is also a social event that mothers and families look forward to for 9 months. When labor begins, the mother's role is to deliver her baby. Labor is the process of opening and thinning the cervix, and the fetus descends into the birth canal. Birth is the process in which the fetus and amniotic fluid are pushed out through the birth canal. Normal labor and birth is the process of expelling the fetus that occurs in full-term pregnancy (37-42 weeks), spontaneous birth with a back of the head presentation that lasts within 18 hours, without complications for both the mother and the fetus (Andayani & Qomariyah, 2021).

Sectio Caesarea is a surgery performed to assist delivery indications, either due to maternal problems or due to fetal conditions. Caesarean section is performed when normal delivery is no longer possible. Sectio caesarea is now no longer performed for medical reasons, but also at the request or on the advice of the treating doctor so that the incidence of sectio caesarea continues to increase every year (Rimadeni et al., 2022).

According to WHO, the average birth rate of sectio caesarea in a country reaches 5-15% per 1000 births worldwide (Ashar et al., 2021). The results of the Basic Health Research (2018), 15% of births were performed surgically. Provinces with the most cesarean deliveries

are DKI Jakarta around (27.2%), Riau Islands (24.7%) and West Sumatra (23.1%). According to the Ministry of Health, in 2018, there were 5,043,078 mothers who gave birth in Indonesia, and as many as 4,351,389 mothers received care from medical personnel in health facilities (Syairaji et al., 2024). According to the 2018 Riskesdas, around 17.6% of births were performed by caesarean method. The caesarean method also has various techniques, such as conventional techniques and Enhanced Recovery After Caesarean Surgery (ERACS) techniques. Nausea and vomiting are often associated with many different factors. Factors that can influence this can be divided into risk factors associated with the patient, namely anesthesia and surgical risk factors (Canakci & Çatak, 2019). Anesthesia risk factors include the use of inhalation anesthesia, the use of Nitrous Oxide (N₂O), and the use of opioids after surgery (Gaya da Costa et al., 2021).

Age and the number of children the mother has are some of the factors that can increase the risk of complications after undergoing caesarean section. Mothers, who are too young, under 20 years old, are at risk because their reproductive organs are not yet fully mature, while mothers older than 35 years old may experience decreased reproductive organ function and are at risk of complications during childbirth. According to researchers, mothers who have Grande multigravida parity of more than five also have a high risk of complications.

Spinal anesthesia is a way of giving anesthetic drugs to relieve pain in patients who will undergo surgery by injecting local anesthetic drugs into the fluid around the spinal cord. In sectio caesarea surgery, regional anesthesia methods are preferred over general anesthesia, with the use of spinal anesthesia reaching 62% of total sectio caesarea surgical deliveries. Spinal anesthesia has several advantages, such as keeping the mother conscious, reducing the risk of aspiration, and preventing depression in the newborn. Spinal anesthesia besides having advantages, also has disadvantages such as the incidence of hypotension, bradycardia, apnea, inadequate breathing, nausea and vomiting, postlumbal headache and high spinal block (Aini et al., 2022).

Postoperative nausea and vomiting (PONV) is a frequent adverse reaction following the administration of anesthesia. The effects of PONV include dehydration, electrolyte imbalance, suture opening, increased blood pressure, esophageal rupture, and the risk of respiratory distress, although the effects are less serious. Each time PONV occurs, the patient's discharge time from the recovery room will extend by approximately 120 minutes. (CTZ), which contains receptors for various neuroactive compounds that can stimulate the gag reflex (Almira, 2020). Research conducted by researchers regarding the description of PONV and its risk factors in sectio caesarea patients with spinal anesthesia at the Jakarta Cempaka Putih Islamic Hospital in the month concluded that of 149 samples, only 3 patients experienced PONV. Based on age, it is only in the age group of 18 - 24 years and 25 - 30 years (Ali & Marhaen, 2023).

In a study conducted by Qing Yuan Goh, et al at the Department of Womens Anesthesia, KK Childrens Hospital in Singapore, out of 124 patients who gave birth by SC and patients who agreed to be studied, about 14 patients (11.2%) experienced vomiting, dry vomiting or nausea. 4 patients (3.2%) experienced PONV (Thay et al., 2018). At Ullin Banjarmasin Hospital in May to July 2014, the results showed that 94 elective surgery patients as many as 26 people (27.08%) experienced PONV (Sholihah et al., 2015). The results of a preliminary study conducted at RSUD Dr. Soedirman Kebumen in the January-March 2020 period stated that out of 400 surgery patients, 30% of patients experienced postoperative nausea and vomiting (Aziz et al., 2020).

In 2022, ST. Teresa Marampa Hospital performed 230 cases of sectio caesarea (SC) using spinal anesthesia, and the number increased to 278 cases in 2023. Researchers conducted a preliminary study in December 2023 by observing 8 patients who underwent section caesarea surgery. As a result, 6 patients (60%) experienced PONV in the first 24 hours after surgery, while the other 2 patients (40%) did not experience PONV. The results of Harahap's research (2014) at Hasan Sadikin Hospital Bandung, almost 20% of operations were performed using spinal anesthesia techniques compared to general anesthesia. The hope is that with spinal anesthesia, patients who will undergo Sectio Cesarea can follow the operation calmly. However, on the other hand, complications or other side effects of spinal anesthesia appear, namely the incidence of nausea and vomiting. The results of observations and interviews conducted by researchers on five post-SC mothers, three of whom said nausea and then vomiting after 2 hours after Sectio Cessarea.

From the above background, the author is interested in taking the problem of "Profile of Nausea and vomiting in postoperative sectio caesarea with spinal anesthesia at ST Hospital. Teresa Marampa Hospital".

The purpose of this study was to determine nausea and vomiting in postoperative sectio caesarea patients with spinal anesthesia at ST Hospital. Teresa Marampa Hospital. Specifically, this study had several objectives, namely identifying the demographic characteristics of patients including age, partus history, and gestational age after surgery, and identifying the type of spinal anesthesia drugs used. In addition, this study also aimed to identify the incidence of nausea and vomiting experienced by patients after sectio caesarea surgery.

The benefits of this study are divided into theoretical and practical benefits. From a theoretical perspective, it is hoped that the results of this study can be a source of scientific information in the field of anesthesiology related to "Profile of Nausea and Vomiting in Postoperative Sectio Caesarea with Spinal Anesthesia" and can be used as a basis for further research. Meanwhile, from a practical perspective, this study provides benefits for researchers as a means of learning and experience in this research, and can enrich knowledge about postoperative nausea and vomiting. It is hoped that this can also help researchers provide preoperative education to patients regarding the risk of nausea and vomiting. For science, this study is expected to be basic data for other researchers who want to conduct research related to postoperative nausea and vomiting. Finally, for the community, this study is expected to provide additional knowledge about postoperative nausea and vomiting, so that people can be more cooperative with medical staff in postoperative care.

RESEARCH METHOD

Research Type and Design

This type of research is a quantitative study with Restrospectif descriptive research design, Researchers also conducted a retrospective study with the aim of identifying the picture of nausea and vomiting in postoperative sectio caesarea with spinal anesthesia at ST Hospital. Teresa Marampa Hospital derived from patient medical records from January to December 2023.

Location and Time of Research

1. Research location

This research has been carried out at the ST Hospital. Teresa Marampa Hospital, North Toraja Regency in 2024.

2. Research time

This research was conducted in July 2024

Population and Sample

1. Population

Population is the entire object of research or the object under study. The population in this study were mothers who experienced nausea and vomiting in postoperative sectio caesarea with spinal anesthesia in 2023 at ST Hospital. Teresa Marampa Hospital, North Toraja Regency totaling 80 people.

2. Sample

The sample in this study were all mothers who experienced nausea and vomiting in postoperative sectio caesarea with spinal anesthesia in 2023 at ST Hospital. Teresa Marampa Hospital, North Toraja Regency with a total of 80 people. The sampling technique used in this study was total sampling, namely the researcher took all the population into the research sample.

3. Research Variables

Variables are part of an object that can be measured. The results of measuring the research variables will produce data, which in research is called research data. The variable in this study is a single variable, namely nausea vomiting.

Research Instruments

The instruments used in this study were patient medical records from January to December 2023.

Data Collection Types and Techniques

1. Preparation stage

In the preparation stage, the following things need to be considered:

- a) The researcher submitted a recommendation letter for a research permit to the rector of Harapan Bangsa University.
- b) The researcher applied for Ethical Clearance to the Research Ethics Commission (KEP) of Harapan Bangsa University.
- c) Researchers submitted a research letter to the One-Stop Investment and Integrated Services Agency.
- d) After the permission letter from the One-Stop Investment and Integrated Services Agency was issued, the researcher submitted the permit letter to Kesbang Pol Kab. North Toraja.
- e) The permission letter from Kesbang Pol Kab. North Toraja was issued. The researcher submitted the research permit to ST. Teresa Marampa Hospital, North Toraja Regency as the place to conduct research.
- f) Researchers obtained a research permit from the ST Hospital. Teresa Marampa Hospital, North Toraja Regency.
- g) Researchers prepared the tools used in the study, namely in the form of observation sheets.

2. Implementation stage

- a) After obtaining permission from all relevant parties, proceed to the implementation stage, namely the researcher went to the Medical Record employee to look for patient register books related to cesarean section surgery with spinal anesthesia.
- b) The researcher introduced himself and then the researcher explained the purpose of the research to the staff in the medical records section.
- c) The researcher ended the meeting by thanking the participants for their participation in the research.

d) Furthermore, the researchers conducted data processing and data analysis.

3. Data Processing

According to Swarjana (2015) the steps in data processing are as follows:

a) Editing

Editing is an effort to check the completeness or correctness of the data that has been collected. Editing at this stage is carried out at the data collection stage by re-examining the sheets that have been collected by the researcher. In this study, checks were carried out such as ensuring that each observation sheet was in the form of completeness of general data (Age, Gestational Age, History of partus, incidence of nausea and vomiting) and seeing the number of observation sheets collected.

b) Coding

Coding is an activity of giving numerical codes or numbers to data consisting of several categories. Coding is carried out after conducting research where researchers do coding according to the characteristics of respondents in the observation sheet to facilitate the data processing process. The data included in the coding is as follows:

(1) Incidence of nausea and vomiting

a) Positive (+) / Yes code (0)

b) Negative (-) / No code (1)

(2) Mother's age

a) 17 - 25 years coded (1)

b) 26 - 35 years old coded (2)

c) 36 - 45 years coded (3)

d) 46 - 55 years old coded (4)

(3) Gestational age

a) Respondents with premature pregnancy (< 28 weeks) were coded (1)

b) Respondents with Pregnancy At term pregnancy (>37 - 41 weeks) coded (2)

c) Respondents with Pregnancy Postterm pregnancy (> 42 weeks) coded (3)

(4) Partus History

a) Primiparous (Parity 1) coded (1)

b) Multiparous (Parity 2-5) coded (2)

c) Grandemultipara (Parity >5) coded (3)

c) Data entry

Before data entry is carried out, double-checking is carried out so that there are no statements that are still empty. Data that has been collected into a master table or computer database for analysis.

d) Tabulating

Researchers will group data in a particular data according to its nature in accordance with the research objectives. The first step in data tabulation is to create an empty table after that enter the data that has been processed according to the needs of the analysis. Researchers create tables that contain the composition of research data so that the data is easier to analyze.

e) Cleaning

The researcher will clean the entered data and then check again to ensure that the data is clean from errors in coding and reading the code. The researcher checked whether there was any incorrect data entered into the computer program.

Data analysis

Research data analysis is one of the stages of a study that is very important and must be done by the researcher, the aim is to obtain a description of the research results that have been formulated in the research objectives. The form of data analysis carried out in this study is univariate analysis. Univariate analysis aims to explain or describe the characteristics of each research variable.

RESULTS AND DISCUSSION

This research was conducted at ST. Teresa Marampa Hospital. From the results of the research, there were 80 samples in this study. For more details, it can be described as follows:

1. Overview of the Research Location

ST Hospital. Teresa Marampa is a type D private hospital in Tana Toraja and North Toraja located at Jl. Andi Mappanyukki, No 74 Rantepao, North Toraja Regency, South Sulawesi.

2. Frequency Distribution Based on Mother's Age

Table 1. Frequency Distribution of Respondents Based on Age

Age	Frequency (n)	Percentage (%)
17-25 years old	9	11.3
26-35 years old	45	56.3
36-45 years old	26	32.5
Total	80	100

Source: Primary Data 2024

The table above shows that of the 80 respondents, the majority were aged 26-35 years, namely 45 people (56.3%).

3. Frequency Distribution Based on Partus History

Table 2. Frequency Distribution of Respondents Based on Partus History

Partus History	Frequency (n)	Percentage (%)
Primiparous Parity	28	35.0
Multiparous Parity	43	53.8
Grandemultiparous parity	9	11.3
Total	80	100

Source: Primary Data 2024

The table above shows that of the 80 respondents, the majority of respondents with a history of multiparous partus were 43 people (53.8%).

4. Frequency Distribution Based on Gestational Age

Table 3. Frequency Distribution of Respondents Based on Pregnancy Age

Pregnancy Age	Frequency (n)	Percentage (%)
Aterm	80	80
Total	80	100

Source: Primary Data 2024

The table above shows that 80 (100%) respondents with aterm gestational age underwent sectio caesarea.

5. Frequency Distribution Based on Nausea Vomiting

Table 4. Frequency Distribution of Respondents Based on Nausea Vomiting

Nausea Vomiting	Frequency	Percentage
Experiencing Nausea and Vomiting	18	22.5
No Nausea and Vomiting	62	77.5
Total	80	100

Source: Primary Data 2024

The table above shows that the majority of respondents did not experience nausea and vomiting, namely 62 people (77.5%).

Discussion

Mother's Age

Table 1 shows that the majority of respondents aged 26-35 years, namely 45 people (56.3%) underwent sectio caesarea. This is because at that age a person is actively working with relatively high mobility, so it will have an impact on the level of risk or things that cause a person to be exposed to diseases that require surgery. Researchers assume that age is associated with PONV, as age always brings changes in hormonal effects. This makes sense considering older people are better able to regulate their nausea and vomiting than younger people are there is a tendency for changes towards acute dystonic reactions.

The findings of this study corroborate other studies that show that the risk of PON increases with age studies conducted by (Hendro et al., 2018) stated that the average subject who experienced PONV was 33 years old. Although patients under 40 years of age have a high rate of nausea, it is still a strong predictor of PONV. Since this study found different findings from other studies, we can also say that the effect of PONV on age is associated with a moderate level of risk. To support this, who said that PONV would decrease with age. Affects nausea and vomiting of postoperative patients under general anesthesia. Research results (Sholihah et al., 2015), obtained with PONV complaints revealed that the majority of respondents were between 26 - 35 years old, who had a higher chance of experiencing postoperative nausea and vomiting.

Partus History

Table 2 shows that the majority of respondents with a history of multiparous partus, namely 43 people (53.8%) experienced nausea and vomiting. This is because spinal anesthesia also has the disadvantage of blocking preganglionic sympathetic nerve fibers which cause venous vasodilation, so that it will reduce blood flow back to the heart and decrease heart pre-load. A decrease in pre-load will result in a gag reflex. Postoperative nausea and vomiting is one of the most frequent side effects after anesthesia, occurring in 30% of unselected patients and up to 70% of "high-risk" patients during the 24 hours after emergence. As many as 30% of the more than 100 million patients who have surgery worldwide, after surgery will experience nausea and vomiting or so-called PONV.

PONV associated with outpatient surgery increases healthcare costs due to hospital admissions and accounts for 0.1-0.2% of these unexpected admissions and PONV in inpatient surgery may contribute to increased costs, increased length of stay, increased perioperative morbidity and prolonged overall recovery.

Pregnancy Age

Table 3 above shows that respondents with aterm gestational age underwent cesarean section and experienced nausea and vomiting, this is due to the activity of the sympathetic and parasympathetic nervous system for most people feeling discomfort and aspiration of

stomach acid.

Nausea and Vomiting

Table 4 shows that the majority of patients did not experience nausea and vomiting. This is because sectio caesarea is a short operation and the majority of patients have a history of sectio caesarea which is an elective surgery schedule. The researchers states that the etiology of nausea and vomiting is multifactorial (Shaikh et al., 2016). The incidence of nausea and vomiting in postoperative patients in infants is 5%, under 5 years of age is 25%, 6-16 years of age is 42-51%, and in adults is 14-40%. In addition, in the female gender, the incidence of postoperative nausea and vomiting can occur 2-4 times greater than men, this is due to plasma progesterone levels during the menstrual cycle (Qudsi & Jatmiko, 2016).

Tinsley & Barone in their study entitled "Preventing Postoperative Nausea and Vomiting" stated that patients with surgical procedures that take less than 30 minutes have a risk of postoperative nausea and vomiting of 28% and in procedures that last for 150-180 minutes have a risk of postoperative nausea and vomiting of 46.2%. The types of surgery that increase the incidence of nausea and vomiting according to researchers are intra-abdominal procedures, strabismus repair, laparoscopy, orthopedics, gynecology, ear nose and throat (ENT), thyroid, breast and plastic surgery and neurosurgery.

Related Research

Research conducted by researchers, about the Nausea Vomiting Overview of Post Sectio Caesarea Patients With Spinal Anesthesia at RSUD H. Hanafie Muara Bungo. The results showed that the general characteristics of respondents based on diagnosis found the majority of 14 respondents with a percentage of 21.9% had a history of SC. Sectio caesarea or cesarean section should be understood as an alternative to childbirth when the normal birth canal is no longer possible. Although 90% of deliveries are categorized as normal or without labor complications, there are still many mothers who choose cesarean section in their childbirth. Whatever the difficulty of labor, the treatment always adheres to the priority of the safety of mother and baby (Silva et al., 2020).

The general characteristics of respondents based on education, namely 32 respondents with a percentage of 50.0% are high school / equivalent. Based on the description of the characteristics of respondents based on age, the results of this study found the highest number of respondents aged 31-35 years, namely 28 respondents with a percentage of 43.8%. The findings in this study are slightly different from the results of research conducted by (Porhomayon et al., 2015), at Arifin Achmad Hospital, Riau Province, regarding the description of the incidence of Post-Operative Nausea and Vomiting (PONV) in patients undergoing general anesthesia using Laryngeal Mask Airway (LMA), the age range of the majority of postoperative patients with general anesthesia was in the age range of 33-40 years (35.6%) of the total respondents.

However, both studies found that the largest number of samples were in the productive age range. The Central Bureau of Statistics defines productive age as those in the age range of 15-64 years. Productive age according to the Central Bureau of Statistics can be categorized into two, namely very productive age (15-49 years) and productive age (50-64 years). At this age, a person is actively working with relatively high mobility, so that it will have an impact on the level of risk or things that cause a person to get diseases that require surgery, for example the impact of traffic accidents, due to falls and work accidents and other diseases.

The results of this study found that the majority of patients did not experience nausea and vomiting. This is because sectio caesarea is a short operation and the majority of patients have a history of sectio caesarea, which is an elective surgery schedule. According to (Shaikh

et al., 2016), states that the etiology of nausea and vomiting is multifactorial. The incidence of nausea and vomiting in postoperative patients in infants is 5%, under 5 years of age is 25%, 6-16 years of age is 42-51%, and in adults is 14-40%. In addition, in the female sex, the incidence of postoperative nausea and vomiting can occur 2-4 times greater than men, this is due to plasma progesterone levels during the menstrual cycle (Qudsi & Jatmiko, 2016).

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Research conducted by researchers, about the description of factors causing postoperative vomiting (PONV) in postoperative section Caesarea (SC) patients at Muhammadiyah Sruweng Hospital (Yanti & Yudhoyono, 2024). This research is descriptive quantitative. A sample of 68 post op SC patients was taken with purposive sampling technique. Respondents aged 26-35 years as much as 25% had a PONV value of scale 2 respondents who experienced obesity as much as 29.4% had a PONV value of scale 2 respondents who did not undergo preoperative fasting as much as 25% experienced PONV events with scale 2. Respondents who underwent SC surgery for >1 hour as many as 23.5% experienced PONV on scale 2. Respondents who had a history of Motion Sickness as much as 38.2% experienced a scale 2 PONV event and Respondents who were given ondansetron premedication as much as 23.5% experienced PONV scale 1.

Research Limitations

In this study, researchers found various limitations. First, the research design used a descriptive approach method, so the results obtained only describe the proportion or number of cases, without showing a causal relationship. Secondly, there were limitations caused by the limited time the researchers had in collecting data.

CONCLUSION

Based on the results of research and data processing regarding the profile of nausea and vomiting after cesarean section surgery with spinal anesthesia at ST Hospital. Teresa Marampa Hospital, several things can be concluded. First, the characteristics of the respondents showed that the majority were between 26-35 years old, with a total of 45 people (56.3%). In addition, the majority of respondents were partus multipara, as many as 43 people (53.8%), and all respondents had a history of aterm pregnancy. Second, the description of the type of spinal anesthesia drugs used after sectio caesarea showed that 100% of respondents used Bunasan drugs at ST. Teresa Marampa Hospital. Finally, the results showed that the majority of respondents did not experience nausea and vomiting after surgery, with a total of 62 people (77.5%).

recommendations that can be conveyed are that hospital management continues to strive to improve the quality of human resources and create a comfortable and safe work environment, especially in the inpatient installation room. Hospital leaders need to pay attention to aspects of lighting, noise reduction, optimal temperature, and maintaining the cleanliness and safety of the work environment. A conducive work environment is proven to increase nurse satisfaction and performance. In addition, for future research, it is recommended that researchers explore variables that have not been studied to produce more comprehensive information.

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