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The Effect of Complementary Acupressure Therapy on the Incidence of Nausea and Vomiting After Regional Block Anesthesia (Spinal Anesthesia) in the Recovery Room of the Imelda Buruh Indonesia General Hospital, Medan

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ABSTRACT: *Postoperative nausea and vomiting is one of the common side effects of spinal anesthesia. Nausea and vomiting affect patient morbidity such as stress, discomfort, dehydration, prolonging treatment time and increasing treatment costs. This study aims to determine the effect of acupressure therapy on the incidence of nausea and vomiting after spinal anesthesia in the recovery room of the Imelda Labor Indonesia General Hospital, Medan. This type of research is a quantitative study with a quasi-experimental research method. Data reports in the province of North Sumatra, there are 25,602 patients undergoing surgery. While at the Umim Labor Indonesia Hospital, Medan, the data on surgical patients as of January-March 2024 amounted to 666 patients, 250 patients were found to have spinal anesthesia. This study was conducted in February - June 2024 at the Imelda Labor Indonesia General Hospital, Medan. A sample of 20 respondents was taken.: The results of the statistical test obtained an α value of 0.000 (α <0.05), thus it was concluded that there was an effect of acupressure therapy on the incidence of nausea and vomiting after spinal anesthesia at the Imelda Labor Indonesia General Hospital, Medan. Based on the characteristics of respondents based on age, they were in the age range of 36-40 years, which was 55%, based on gender, the majority of respondents were women, which was 60%, respondents based on a history of smoking were 65%, the distribution of respondents with a history of nausea and vomiting was 55% and the majority of respondents with an incidence of nausea and vomiting was 60%. The recommendation for this study is that acupressure therapy can be applied in nursing practice so that patients are able to do it independently. For the Imelda Labor Indonesia General Hospital, Medan, it is necessary to carry out a risk scoring of nausea and vomiting in patients before surgery to minimize the incidence of nausea and vomiting after surgery.*

Keywords: *Acupressure, Nausea and Vomiting, Spinal anesthesia*

1. INTRODUCTION

Background

Surgery is an invasive procedure performed to overcome a patient's problem or disease with surgery. Unpleasant effects that often occur after surgery or surgery are nausea and vomiting. Nausea is a subjective sensation of wanting to vomit without expulsive muscle movements, if severe it will be associated with increased salivary gland secretion, sweating and vasomotor disorders. Retching is the desire or urge to vomit. Due to spasm contraction of the respiratory muscles without expelling gastric contents. Vomiting is the release of gastric contents through the mouth or even the nose, vomiting conditions include abdominal contractions that result in the release of gastric contents through the mouth.

In general, anesthesia is divided into two groups, namely general anesthesia and regional anesthesia. General anesthesia is a state of unconsciousness without reversible pain due to the administration of drugs, and eliminates pain throughout the body centrally. The difference with

regional anesthesia is anesthesia in part of the body, a pain-free state without loss of consciousness (Rustiawati & Sulastri, 2021) .

The World Health Organization World Alliance for Patient Safety in January, began consulting with experts to develop standards to improve patient safety in surgery or anesthesia.

World Heath Organization (WHO) has introduced patient *safety surgery saves life* to improve patient safety in surgical or anesthesia procedures and reduce complications and deaths due to surgical or anesthesia procedures at the national level adopted by 25 countries in the world. According to WHO, Indonesia has not been widely reported. Based on the results of a preliminary study at the Prof. Dr. Margono Soekarjo Purwokerto Regional General Hospital, Banyumas Regency, Central Java Province in 2016, information was obtained that the number of operations during the last 6 months with anesthesia services amounted to 4,235 cases, where general anesthesia amounted to 2,741 (64.7%) cases while regional spinal anesthesia amounted to 1,494 (35.3%) cases. The monthly picture is general anesthesia 400 cases, regional anesthesia 200 cases with epidural and local block 130 cases with spinal anesthesia 70 cases recorded per month.

The impact of spinal anesthesia is common nausea and vomiting in postoperative patients. Nausea and vomiting during spinal anesthesia can be associated with several causative factors such as sympathetic block followed by parasympathetic dominance, hypotension, decreased central nervous system perfusion, psychological changes due to anxiety, and sudden abdominal movements and opioid administration (Apsari et al., 2023) .

Data reports in North Sumatra province show that there are 25,602 patients undergoing surgery. Meanwhile, at the Imelda Buruh Indonesia General Hospital in Medan, the data on surgical patients per January - March 2024 amounted to 666 patients, with 250 patients undergoing spinal anesthesia.

In overcoming nausea and vomiting due to post-operative anesthesia, pharmacological and non-pharmacological therapy is used. can be used to prevent and treat nausea and vomiting one of the antiemetic drugs given in pharmacological therapy given to patients unsatisfactory as monotherapy or combination because it cannot completely improve nausea and vomiting . Non-pharmacological therapy that can be done is acupressure therapy (Of et al., 2024) . Acupressure is a healing science by pressing, massaging and rubbing parts of the body to activate the circulation of vital energy or qi. Acupressure is a therapy that is easy, simple and has no side effects because it is not an invasive procedure.

The principle of *healing touch* in pressing body points shows caring behavior so that it can create comfort which will bring the nurse closer to the patient (Rizqoni & Mariyam, 2023)

. The implementation of acupressure is to apply physical pressure to a number of points on the surface of the body which include areas of balance and energy circulation. The technique of giving acupressure is effective, safe and also non-invasive (Rizqoni & Mariyam, 2023) .

Acupressure is a form of physiotherapy by providing massage and stimulation at specific points on the body. Acupressure therapy is a very simple and effective action, easy to do, has few side effects and can be used to detect disorders in patients. Healing touch in acupressure shows caring behavior that can detect the therapeutic relationship between nurses and clients. Based on the results of the study, it was stated that acupressure intervention can be clinically effective in reducing nausea and vomiting (Novita Sari, 2020) . Based on initial survey data conducted by researchers, it was reported that patients who underwent surgery at the Imelda Buruh Indonesia General Hospital per January-March 2024 were 664 patients. It was reported that patients who underwent surgery experienced postoperative nausea and vomiting, but although the symptoms were not significant, there was no nursing therapy provided in the treatment of postoperative nausea and vomiting. At the Imelda General Hospital, Indonesian workers have never had any reports that spinal anesthesia can cause nausea and vomiting, and no independent nursing actions have been taken to prevent or reduce the number of post-operative nausea and vomiting.

So far, nurses have only given pharmacological drugs, namely droperidol, dexamethasone and ondasetron to overcome nausea and vomiting in postoperative patients. For this reason, the author is interested in conducting a study entitled " **The Effect of Complementary Acupressure Therapy on the Incidence of Nausea and Vomiting After Regional Anesthesia Block Anesthesia (Spinal Anesthesia) in the Recovery Room of the Imelda Buruh Indonesia Hospital, Medan**"

Formulation of the problem

Patients who receive spinal anesthesia often experience nausea and vomiting as a side effect of the anesthesia. Non-pharmacological therapy that is commonly used is acupressure therapy. Acupressure has been known to be useful in reducing nausea and vomiting in various conditions through its effect on facilitating the movement of vital energy in the body. The provision of acupressure therapy is expected to be able to reduce nausea and vomiting so that patients get a better quality of life. The formulation of the problem in this study is the effect of acupressure therapy on nausea and vomiting due to spinal anesthesia. Based on the above, the research question that will be answered in this study is how does acupressure affect nausea and vomiting due to spinal anesthesia.

Researcher's Objectives

The general and specific research objectives of the problem formulation that has been given are as follows:

1. General Research Objectives

   Identifying the effect of acupressure on nausea and vomiting due to post-operative spinal anesthesia.

2. Specific Research Objectives

- Identifying nausea and vomiting data before and after acupressure therapy.
- Identifying respondent characteristics based on age.
- Identifying respondent characteristics based on gender.
- Identifying respondent characteristics based on smoking history.
- Identifying respondent characteristics based on history of nausea and vomiting.
- Identifying respondent characteristics based on nausea and vomiting incidents.

Benefits of Researchers

It is hoped that this research can provide benefits and contribute to understanding for researchers and of course for the target objects of this research and is not limited to further research.

1. For Hospitals

   This study is expected to be a guide for nursing in reducing the incidence of nausea and vomiting after spinal anesthesia with acupressure therapy.

2. For Researchers

   It is hoped that researchers can find out the comparison between when acupressure therapy is carried out and when acupressure therapy is not carried out on the incidence of nausea and vomiting in patients after spinal anesthesia.

3. For Academic Institutions

   As input material in references and as teaching and discussion material at Imelda University Medan.

2. LITERATURE REVIEW

Basic Concepts of Surgery

- **Definition of Surgery**

Surgery or operation is all medical treatment that uses invasive methods by opening or displaying the body part to be treated. The opening of this body part is generally done by making an incision. After the part to be treated is visible, repairs are carried out which end with closing and stitching the wound (Sjamsuhidayat, 2015) .

Surgery requires thorough preparation, especially by the surgeon himself in terms of knowledge of the disease in question and the surgical techniques used. The necessary surgical equipment and personnel who will participate in the surgical treatment (including the anesthesiologist) must also be prepared.

Every patient who will undergo surgery is in a certain psychological state due to the disease he is suffering from. The patient knows that he will undergo surgery and treatment, and he has the right to receive clear information about the course of the surgery that he will face in order to finally give his consent by signing an *informed consent letter* (Sjamsuhidayat, 2015) .

- **Surgeon**

The experience of a surgeon will determine his attitude about the surgery he will perform. The attitude of a first-time surgeon will definitely be different from the attitude of someone who has done it repeatedly. It should be remembered that the act of surgery is like a stroke or brush by a painter on a painting: however, the result of surgery is a product that cannot be crossed out, wiped away, or repeated.

- **Types of Surgery**

Surgery is divided into two types according to its type, namely minor surgery and major surgery.

a. Minor Surgery

   Minor surgery or small operations are the most frequently performed outpatient operations, and patients who undergo minor surgery can go home on the same day (Virginia, 2019).

b. Major Surgery

   Major surgery is a surgical procedure that uses general anesthesia which is one form of surgery that is often performed. Indications for major surgery include:

1. Colonostomy

   An operation to create an opening for the large intestine (colon) through the belly (abdomen) . A colostomy may be short-term (temporary) or long-term (permanent) .

2. Nephrectomy

   Nephrectomy is a surgical removal of part or all of a kidney. Usually, this surgery is performed to treat cancer or noncancerous tumors in the kidney .

3. Mastectomy

   A total mastectomy is the removal of the entire breast, including the tissue surrounding the breast, nipple, areola, fascia of the main chest muscle, and skin .

4. Amputation

   Amputation is the loss or severing of a body part, such as a finger, arm, or leg. Amputation can occur as a result of an injury, or it can be part of a surgical procedure to remove a body part to treat a condition or disease .

5. Trauma surgery

   Trauma surgery is a form of surgery that treats injuries caused by impact . It involves specialized critical care management and surgical intervention .

6. Laparotomy

   Laparotomy is procedure surgery for open abdominal cavity

   man . This procedure involves an incision in the abdominal wall to access the organs inside .

7. Caesarean section

   Caesarean section or sc is a surgical procedure that will

   helping the baby to be born through an incision that the doctor and other medical team make in the mother's abdominal wall and the wall of the uterus (womb) . This action needs to be carried out by the mother if there are problems or conditions that prevent the baby from being born naturally.

   vaginal (Putri & Martin, 2023) .

- **Indications for Surgery**

  Some indications for patients undergoing surgery include:

  a. Diagnostics: biopsy or exploratory laparotomy
  b. Curative: excision of tumor or removal of inflamed appendix
  c. Reparative: repairing multiple wounds
  d. Reconstructive/cosmetic: mammoplasty, or plastic surgery
  e. Palliative: relieve pain or fix the problem,

for example, the installation of a gastrostomy tube is installed to compensate for the discomfort of swallowing food (Apipudin et al, 2017).

- **Surgical techniques**

a. Approach

The split incision is made as much as possible in accordance with the direction of the skin fold so that the wound heals better without leaving a striking scar or causing keloids. The incision should also be made by considering the ease of reaching the area to be operated on and the need for the use of a *drain tube* after the wound is closed. Compensating for the discomfort of swallowing food (Apipudin et al, 2017).

- **Stages of Surgery**

There are several stages in the operation, namely:

1. Pre-operative stage

Preoperative is the period that begins when the decision to undergo surgery is made and ends when the patient is moved to the operating table. In this phase, there are several things that must be considered in the pre-surgical stage.

a. Living a healthy lifestyle
b. Fasting before medical procedures
c. Pre-operative health check
d. Ask for support from those closest to you (Spreckhelsen & Chalil, 2021) .

2. Intra-Operative Stage

Intraoperative care begins when the patient is transferred to the surgical table and ends when the patient is transferred to the recovery room area. In this phase, the scope of nursing activities includes installing IV cath, administering intravenous medication, monitoring overall physiological conditions throughout the surgical procedure, and maintaining patient safety. For example, providing psychological support during anesthesia induction, acting as a scrub nurse, or helping to position the patient on the operating table using the principles of body symmetry (Spreckhelsen & Chalil, 2021) .

3. Post-Operative Stage

The postoperative stage is a continuation of preoperative and intraoperative care that begins when the client is admitted to the recovery room or post-anesthesia and ends with a follow-up evaluation in a clinical setting or in a hospital. In this phase, the scope of nursing activities covers a wide range of activities during this period. In this phase, the focus of the assessment includes the effects of anesthetic agents and monitoring vital functions and

preventing complications. Nursing activities then focus on improving patient healing and providing counseling (Spreckhelsen & Chalil, 2021) .

Spinal Anesthesia

- **Understanding Spinal Anesthesia**

anesthesia is an anesthesia method that is considered economical, safe, comfortable, and effective, providing a rapid and reliable onset of action, and is widely used in daily anesthesia practice. Spinal anesthesia is performed by injecting local anesthetic drugs into the intrathecal space, which produces analgesia. Patient consciousness during spinal anesthesia can be maintained, making it safer to use in patients with insufficient fasting or a full stomach compared to general anesthesia. Other advantages include better recovery, reduced bleeding due to hypotensive effects, and lower economic costs. Factors that limit the use of spinal anesthesia during outpatient procedures refer to the secondary effects of residual spinal blockade effects (eg, delayed ambulation, postural hypotension) (Setijanto et al., 2022) .

Spinal anesthesia is indicated for lower extremity surgery, pelvic surgery, procedures around the rectum-perineum, obstetrics-gynecology surgery, urology surgery, lower abdominal surgery, and is increasingly being used for lower extremity orthopedic surgery. Spinal anesthesia is easy and inexpensive to perform, but the risks that may arise are also not small, including hypotension, high block (spinal), radioculopathy, abscess, hematoma, arteriovenous malformation, anterior spinal artery syndrome, hornes syndrome, back pain, dizziness, and neurological deficits (Rustiawati & Sulastri, 2021) .

- **Spinal Anesthesia Injection Technique**

Spinal anesthesia or subarachnoid block (SAB) can be performed by injecting local anesthetic drugs into the subarachnoid space in the lumbar region between lumbar vertebrae 2-3, lumbar 3-4, or lumbar 4-5 with the aim of obtaining a block height or anesthesia as high as a certain dermatome or skeletal muscle relaxation. SAB is performed using a technique (midline/median or paramedian) with a very small spinal needle (Rustiawati & Sulastri, 2021).

Figure 1. Spinal Anesthesia

1. Spinal Anesthesia Injection Positions

Spinal anesthesia positions are divided into 3, namely:

- Lateral decubitus position

  This position is often used in lower extremity surgery.

- Sitting position

  The sitting position is recommended for patients who are overweight (obese).

- Prone jack nife position

  Positions used in surgery such as rectal and perineal.4ws

- **Types of Anesthetic Drugs**

The spinal anesthetic drug used is Bupivacaine, while the general anesthetic used during induction is Ketamine, Fentanyl, and Propofol which are administered intravenously (Djajanti & Arfah, 2016) .

- **Post Spinal Anesthesia Complications**

There are 2 complications that can occur after spinal anesthesia, namely major and minor complications:

1 Major complications include:

- Allergy to local anesthetic drugs
- Transient neurologic syndrome
- Nerve injury
- Subarachnoid hemorrhage
- Infection
- Total spinal anesthesia
- Shortness of breath
- Cauda equina syndrome
- and other neurological dysfunctions

(Oroh et al. 2022) .

2 minor complications, namely:

- Hypotension especially dehydration

  The mechanism of hypotension can be explained as a sympathetic block effect that causes arterial and arteriolar vasodilation; the presence of venodilation causes cardiac preload to decrease, reducing cardiac output and causing hypotension. Hypotension can also

cause nausea and vomiting, organ ischemia, cardiovascular collapse (Indradata et al., 2021)

- High spinal blockade makes breathing paralyzed so that immediate assistance with breathing and airway is needed.

3 Post spinal cord injury headache

The degree of headache depends on the diameter and shape of the spinal needle. When using spinal needles no. 25-27, the incidence of post-headache is only about 1%. Cauda equina syndrome is an injury to the end of the spinal cord nerves that causes spinal cord dysfunction which causes bladder dysfunction. urinary and intestinal, loss of motor and sensory loss of lower extremities (Sjamsuhidayat, 2015) .

4 Regurgitation and Nausea vomiting

Postoperative nausea and vomiting can be caused by pharmacological factors, for example due to the use of certain types of anesthesia or the effects of a drug. Unpleasant effects that often occur after surgery or surgery are nausea and vomiting. Nausea is a subjective sensation of wanting to vomit without movement. Muscle expulsion, if severe, will be associated with increased salivary gland secretion, sweating and vasomotor disorders. Retching is the desire or urge to vomit. Due to spasm contractions of the respiratory muscles without expelling stomach contents. Vomiting is the release of stomach contents through the mouth or even the nose. Vomiting conditions include abdominal contractions that result in the release of stomach contents through the mouth. Postoperative nausea and vomiting is known as Post-Operative Nausea and Vomiting (PONV) (Cing et al., 2022) .

Vomiting should be prevented because it can cause aspiration. Vomiting can be avoided by lowering and tilting the head so that the fluid flows out of the corner of the mouth due to gravity. Safer, then the oral and nasal cavities are cleaned by sucking the vomit (Sjamsuhidayat, 2015) . In addition, to overcome nausea and vomiting can be done with acupressure therapy.

- **Factors that cause nausea and vomiting**

The occurrence of postoperative nausea and vomiting can be caused by pharmacological factors, for example due to the use of certain types of anesthesia or the effects of a drug. While from non-pharmacological factors, the occurrence of nausea and vomiting can come from patient factors themselves such as (age, gender, occurrence of nausea and vomiting, smoking history, history of nausea and vomiting) (Cing et al., 2022) .

a. Age

The incidence of nausea and vomiting in children aged over 3 years has a higher risk than children aged 0-3 years, some also say that those aged <50 years have a higher risk of post-operative nausea and vomiting (Shaikh et al., 2016).

b. Gender

The risk of nausea and vomiting in women is two to three times higher than in men. This is due to the relationship between the hormone progesterone or serum gonadotropin levels in women with postoperative nausea and vomiting, which is a major contributing factor to the occurrence of postoperative nausea and vomiting.

c. Smoking history

Smoking history can reduce the risk of postoperative nausea and vomiting, because emetogenic receptors in the brain experience decreased sensitivity due to the reaction 38 with nicotine in cigarettes. Inhalation anesthetic agents are volatile substances that can be an early factor in postoperative PONV. The anesthetic agent evaporates and is metabolized by cytochrome P450 2E1, and it can be processed by nicotine and polycyclic aromatics from cigarettes. Therefore, the metabolism of anesthetic agents is faster so that the risk of PONV can be reduced. Nicotine also slows down the function of the 5HT3 receptor, which is a nausea and vomiting receptor.

d. History of *motion sickness* or post-operative nausea and vomiting

History of *motion sickness* , has a risk of postoperative nausea and vomiting, because it has a fairly low tolerance vulnerability to nausea and vomiting. Hereditary factors that have a history of postoperative nausea and vomiting also have an influence on the potential for postoperative nausea and vomiting compared to genetics that do not have a history of *motion sickness* , postoperative nausea and vomiting, or both (Shaikhet al., 2016).

- **Classification of Postoperative Nausea and Vomiting**

Classification of postoperative nausea and vomiting is divided into several groups, based on the time of onset, according to Practice in the American Society Post Operative Nurse (ASPAN) (2016). As follows:

1. Early nausea and vomiting: appears 1-2 hours after surgery.
2. Late nausea and vomiting: appears 2-4 hours after surgery.
3. Delayed nausea and vomiting: appears 4-6 hours after surgery.

According to Gordon, the nausea and vomiting response can also be assessed by:

1. Score 0: the patient does not feel nauseous or vomit.
2. Score 1: patient feels nauseous

3. Score 2: patient experiences retching
4. Score 3: the patient experiences nausea for more than 30 minutes or vomits > 2 times.

Gordon score 0 = Patient does not experience postoperative nausea and vomiting

Gordon score 1-3 = Patient experiences postoperative nausea and vomiting.

- **Pathophysiology of Nausea and Vomiting**

Nausea and vomiting is a complex process that is coordinated by the vomiting center in the medulla oblongata. This center receives input impulses from:

1) Chemorectoreceptor Trigger Zone (CTZ)

The CTZ is a group of cells in the medulla oblongata that are sensitive to certain toxic chemicals and react by causing vomiting. The CTZ can be affected by anesthetic agents, opioids, and humoral factors (5-HT) released during surgery.

2) vestibular system

This system can cause nausea and vomiting as a result of surgery involving the middle ear or movement after surgery.

3) Higher Cortical Center

The higher cortical center of nausea and vomiting is closely related to unpleasant feelings, sights, smells, memories, and fear.

4) Vagus Nerve

Afferent nerves from the vagus nerve convey information from mechanoreceptors in the intestinal wall muscles, which produce 5-HT when the intestine is distended or traumatized during surgery and from chemoreceptors in the mucosa of the upper gastrointestinal tract which are triggered by the presence of noxious substances in the lumen.

5) Spinoreticular system

This system induces nausea due to physical trauma.

6) Nucleus solitary

The nucleus solitaries is a reflex arc for nausea and vomiting, while vomiting originates from stimulation of the hindbrain (Rahmatisa et al., 2019).

Acupressure Therapy

- **Understanding acupressure therapy**

Acupuncture and acupressure are therapies that use the body's energy system to cure various physical ailments. In this technique there are 361 points along the body's 12 energy meridians, using needles (pressure for acupressure). Acupressure comes from the words accus and pressure, which mean needle and press. Acupressure is a term used to provide stimulation

of acupuncture points with pressure techniques or mechanical techniques (Iryas & Astuti, 2023) .

Postoperative nausea and vomiting can cause various complications that are detrimental to the patient. Continuous nausea and vomiting can cause fluid disorders and electrolyte imbalances, In postoperative patients who are still under sedation or anesthesia, postoperative nausea and vomiting can increase the risk of aspiration of gastric contents. (Susanto et al., 2022) .

Acupressure is an easy, simple therapy and has no side effects because it is not an invasive procedure. The principle of healing touch in pressing body points shows caring behavior so that it can create comfort which will bring nurses closer together. The implementation of acupressure is to apply physical pressure to a number of points on the surface of the body which include areas of balance and energy circulation. The technique of giving acupressure is effective, safe and also not invasive with patients. Giving acupressure therapy at point P6 can reduce to eliminate symptoms of nausea and vomiting experienced after surgery and there are no side effects. The pericardium (P6) can relieve symptoms of nausea and vomiting and the P6 area is located on the palmaris longus tendon and the flexor carpi radialis muscle, then 4 cm below the wrists of both hands (Rizqoni & Mariyam, 2023) .

- **Benefits of Acupressure Therapy for Health**

Acupressure is believed to have various health benefits, including:

1. Acupressure for pain relief

Acupressure has benefits in reducing various types of pain. Acupressure therapy can reduce menstrual pressure and lower back pain in young adult women, dysmenorrhea, headaches, and postpartum pain.

2. Acupressure for chronic diseases

Acupressure also has benefits in overcoming corneal problems. Acupressure has been found to be effective as an alternative treatment in efforts to reduce blood sugar levels in patients with diabetes mellitus and lower blood pressure.

3. Acupressure for neurological problems

Acupressure therapy was found to be effective in reducing the degree of neuropathy in patients with Diabetes Mellitus. In addition, acupressure is effective in reducing the degree of restless leg syndrome in patients undergoing hemodialysis.

4. Acupressure for psychological problems

Acupressure can reduce symptoms of depression, anxiety and stress. The effects were studied in elderly populations, hemodialysis patients who experienced depression, anxiety and stress.

5. Acupressure for reducing various symptoms

Auricular acupressure therapy has been shown to improve the sleep status of middle-aged women. In addition, acupressure can also reduce symptoms of nausea and vomiting in pregnant women, post-operatively, and patients with acute myeloblastic with chemotherapy. Acupressure also has an effect on reducing the frequency of enuresis. (Novita Sari, 2020) .

- **How to Do Massage (Acupressure)**

To find pressure point P-6: Position 3 fingers just below the wrist crease (where the wrist bends).

1. Place your thumb directly under your index (pointer) finger. Release 3 fingers from the wrist but keep the thumb at that point.
2. Use your thumb to press where three fingers below the wrist and feel for 2 large tendons (tissues that connect muscles to bones) between the thumbs, the point between these 2 tendons is the P-6 pressure point.
3. After finding the pressure point, relax your hand and keep it in a comfortable position.

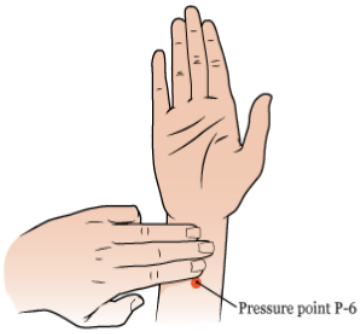


Figure 2. Placing 3 fingers on the wrist to measure where the thumb should be placed

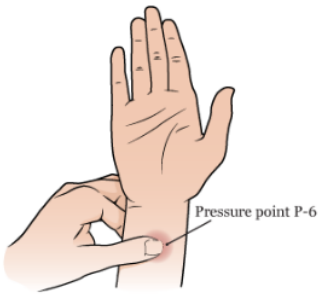


Figure 3. Placing the thumb on the point below the index finger

4. Press this point with your thumb. Move your thumb in a circle while applying pressure. And move it clockwise (to the right) or counterclockwise (to the left). Do this for 2 to 3 minutes.

a. If you can't use your thumb, you can use your index finger instead.

b. Be firm when applying pressure, but do not press too hard to the point of causing pain. If the patient feels pain, it means the pressure is being applied too hard.

Repeat steps 1 to 4 on the other wrist . The results of the study stated that acupressure at the Neiguan point (P6) is effective in reducing the severity and frequency of nausea and vomiting because it stimulates blood circulation and then inhibits cerebral cortex activity through nerve stimulation (Lestari et al., 2022) .

Standard Operating Procedure (SOP) for Acupressure Therapy

STANDARD OPERATING PROCEDURE	ACUPRESSURE THERAPY
UNDERSTANDING	Acupressure is a form of physiotherapy that involves massage and stimulation at certain points on the body.
OBJECTIVE	Rebuilding weakened body cells and able to create a defense system and regenerate cells body
INDICATION	1. Provides a sense of comfort 2. Reduce nausea and vomiting
CONTRAINDICATIONS	1. Injured body part 2. Swollen body parts 3.Burned body parts 4.Broken body parts
EQUIPMENT	1. Perlak or base 2. Hanscoen (if necessary)
PROCEDURE	**A. Prioritization stage:** 1. Check the therapy program 2. Wash your hands 4. Time contract
	B. Orientation stage 1. Greet the patient and say the patient's name. 2. Explain the purpose of the procedure to the patient and family. 3. Give the patient and family the opportunity to ask questions. 4. Questioning the patient's readiness to consent
	Working stages: 1. Wash hands (according to SOP) 2. Patient identification 3. Arrange the patient's position so that he/she lies down calmly and is not tense. 4. Place the stopwatch near the patient. 5.Use gloves if necessary 6. Conduct a VAS vomiting scale assessment 7. Then apply pressure at the pressure point p6, apply pressure for 10-15 minutes.

	
	Termination phase: 1. Evaluate patient actions and responses when actions are taken 2. Say goodbye to the patient 4. Wash your hands 5. Record activities on a notebook sheet

- **The purpose of acupressure therapy**

Acupressure techniques aim to rebuild weakened cells in the body and are able to create a defense system and regenerate body cells. When acupressure points are stimulated, the body will release muscle tension, increase blood circulation, and increase the body's life force energy (Qi) to help healing (Lestari et al., 2022) .

- **Indications of Acupressure**

Indications for administering acupressure are as follows:

1. Provides a sense of comfort
2. Reduce nausea and vomiting

Contraindications to acupressure are as follows:

1. Injured body part
2. Burned body parts
3. Broken body parts
4. Swollen body parts.

Conceptual Framework

framework is the relationship or connection between one concept and another concept in a study aimed at determining the Effect of Complementary Acupressure Therapy on the Incidence of Nausea and Vomiting After Regional Anesthesia Block Anesthesia (Spinal Anesthesia) in the Recovery Room of the Imelda Indonesian Workers Hospital, Medan in 2024 .

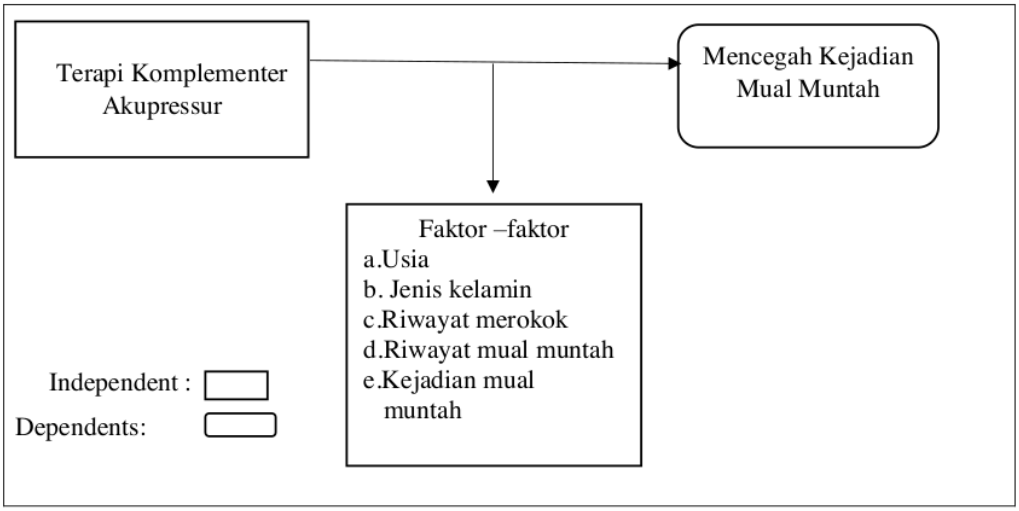


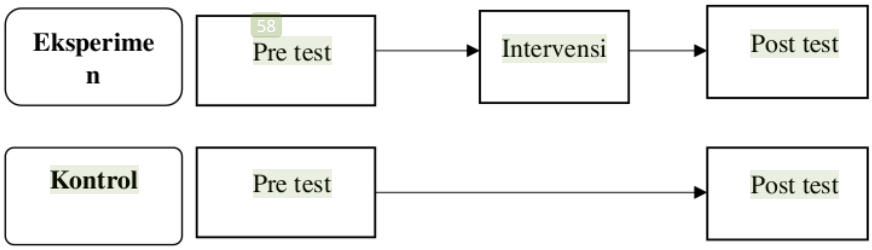
Figure 4. Conceptual Framework

3. RESEARCH METHODS

Types of research

This type of research is quantitative research with a *quasi- research method. experiment*. Aim to find out The Effect of Complementary Acupressure Therapy on the Incidence of Nausea and Vomiting After Regional Anesthesia Block Anesthesia (Spinal Anesthesia) in the Recovery Room of the Imelda Indonesian Workers Hospital, Medan in 2024.

The following is a research design scheme *for pretest-posttest control design* , as shown in the schematic below:



Pretest-posttest control design **research design scheme**

Place and time of research

This study was conducted at the Imelda Buruh Indonesia General Hospital in Medan in the Recovery Room . The researcher chose this hospital as the place of research because there has never been a report that spinal anesthesia can cause nausea and vomiting, and there has never been any independent nursing action or non-pharmacological therapy given in terms of preventing or reducing the number of postoperative nausea and vomiting.

Table 3.1 Research Time

Research Activities	February	March	April	May	June
Title submission					
Journal submission					
Research survey and proposal preparation					
Research Implementation					
Trial results					

Population and Research Sample

- **Research population**

Population is the entire object or subject to be studied. (Amin et al., 2023) . The population in this study were all post-spinal anesthesia patients in the last 3 months at the Imelda Buruh Indonesia General Hospital, totaling 250 patients, and researchers took data in one week of working days for 20 patients.

- **Research sample**

A sample is simply defined as a part of a population that is the actual source of data in a study (Amin et al., 2023) . The study used quantitative experiments, a research sample of 20 respondents using the total sampling technique, namely all patients who would undergo surgery with regional spinal anesthesia block anesthesia (spinal anesthesia) during the 1 week the study was conducted.

In order for the sample criteria not to deviate from the population desired by the researcher, before sampling, it is necessary to determine the inclusion and exclusion criteria. Inclusion criteria are criteria that need to be met by each member of the population that needs to be met by each member of the population taken as a sample. While exclusion criteria are characteristics of population members that cannot be sampled.

Inclusion criteria:

1. Post spinal surgery patients
2. Cooperative

3. Agree to undergo acupressure therapy

4. Not illiterate

Exclusion criteria:

1. Uncooperative

2. The patient suddenly refuses to undergo therapy.

3.Illiterate

The sample in this study were patients who were included in the inclusion and exclusion criteria who were treated at RSU Imelda Buruh Indonesia Medan while the study was ongoing. The estimated sample size for the difference in the average of 2 groups in this study used the Slovin formula as follows:

Thus, the number of samples obtained in this study was 20 respondents with each group; 10 people in the intervention group and 10 people in the control group.

Method of collecting data

type of data used in this study is primary data obtained directly from patients. Data collection in this study was carried out in the following manner.

1. Contacting the Imelda Indonesian Workers General Hospital in Medan, with the aim of the researcher requesting information about the subject.
2. The researcher met, asked for permission, and conveyed the intent and purpose as well as the duration of data collection to the head of the internal medicine unit of the Imelda Buruh Indonesia General Hospital, Medan .
3. After obtaining respondents who meet the criteria in the research, the researcher meets the respondents to introduce themselves and explain the researcher's intentions and objectives, procedures, right to refuse, and guarantees of confidentiality and comfort as respondents.
4. After obtaining permission from the head of the internal medicine unit, the researcher identified patients who met the criteria. The group division will be divided into two, namely the intervention group and the control group by giving a sequence number on the questionnaire sheet, for the odd number sequence will be used as the intervention group and the even number sequence will be the control group.
5. Researchers asked respondents for permission along with *informed consent* to participate in research activities.
6. After *the informed consent* was signed by the respondents, the researcher then carried out acupressure therapy intervention on patients/respondents in the intervention group with a duration of 10-15 minutes/patient.

7. Researchers will then assess the patient's response after acupressure therapy intervention.
8. After the data is collected, statistical testing is carried out to obtain measurement results.

- **Research Variables**

Research variables are objects that are attached (owned) to the subject. Research objects can be people, objects, transactions, or events collected from research subjects that describe a condition or value of each research subject. (Purwanto, 2019) . The variables in this study are a comparison of patients when acupressure therapy was performed with patients when acupressure therapy was not performed.

- **Operational Definition**

Kountur (2018) said that an operational definition is a definition that provides an explanation of a variable in a measurable form. This operational definition provides the information needed to measure the variable to be studied.

Variables	Operational Definition	Measuring Tools and Measuring Methods	Measurement Results	Scale
(Independent Variable) Acupressure therapy	The activity of providing acupressure therapy given to patients after spinal anesthesia to reduce nausea and vomiting is carried out for 10-15 minutes.	Using SOP sheets	1.intervention group: acupressure therapy 2. Control group: not given acupressure therapy	Nominal
(Dependent variable) Nausea and vomiting	Nausea and vomiting is a condition where the self-defense mechanism causes an uncomfortable sensation in the stomach.	Observation (Gordon Scale)	According to Gordon: Score 0: the patient does not feel nauseous or vomit. Score 1: patient feels nauseous Score 2: patient experiences retching Score 3: the patient experiences nausea for more than 30 minutes. According to ASPAN: Early nausea and vomiting: appears 1–2 hours after surgery. Late nausea and vomiting: appears 2-4 hours after surgery. Delayed nausea and vomiting: appears 4–6 hours after surgery	Nominal
(Confounding Variable) Age	Age is the age of an individual calculated from birth to several years. The older a	Questionnaire	Early Adulthood : 18- 40 years old 2. Middle Adult : 41-60 years	Ordinal

	person is, the more mature a person's level of maturity will be in thinking and working.		3. Older adults: >60 years	
Gender	Gender is a word that is generally used to distinguish a person's sex (male or female).	Questionnaire	1. Male 2.Women	Nominal
Smoking history	Behavior or habits smoking cigarettes and/or having smoked (first time smoking until quitting smoking until completing the questionnaire) on a daily basis	Questionnaire	1.Yes, smoking 2. No, I don't smoke	Nominal
History of nausea vomit	The patient had a history of nausea and vomiting 1-6 hours after surgery.	Questionnaire	1. Yes, if you have a previous history of nausea and vomiting 2. No, if you have not had nausea or vomiting before	Nominal
Nausea incident vomit	It is a health problem that occurs after surgery. a period of 1-6 hours marked by nausea and vomiting. a experience no the usual fun that is felt before vomiting. And the discharge good stomach contents intentional or unintentional.	Observation sheet	1. Yes, if the patient experiences nausea and vomiting 2. No, if the patient does not experience nausea and vomiting	Nominal

Research Instruments

A research instrument is a tool used to obtain, process, and interpret information obtained from respondents using the same measurement pattern (Agustina, 2017) .

The research instrument used was a questionnaire sheet consisting of patient identity and factors, Standard Operating Procedure (SOP) for acupressure therapy, and an observation sheet on nausea and vomiting scores based on Gordon), which has been adapted into Indonesian and consists of four components with a score of 0-3. The researcher did not conduct a reliability test and validity test for the research instrument for nausea and vomiting scores based on Gordon because the instrument is standard and internationally recognized.

Data Management and Analysis Techniques

- **Data processing techniques**

a) **Editing**

Editing is an effort to re-check the accuracy of the data obtained or collected. Editing is done at the data collection stage or after the data is collected (Purwanto, 2019) . The editing process on the research results is carried out on the acupressure therapy observation sheet by rewriting the results of the treatment observations if the researcher feels that the value range is not appropriate.

b) **Coding**

Coding is an activity of giving numeric codes (numbers) to data. Data is coded according to what is explained in the operational definition and data processing needs. Each data is given a code to facilitate data processing. (Purwanto, 2019) .

c) **Processing/entry**

The process is done by entering data into a table manually or through computer management. The results of the research in this study are entered into the SPSS program. Data processed in the SPSS program include respondent characteristics and pre-test and post-test observation results.

d) **Cleaning**

Data cleaning or data cleaning is a process used to detect, repair or delete corrupt or inaccurate datasets, tables, and databases (Widiari et al., 2020) . The cleaning process is carried out during the grouping of respondent characteristic data and process variables for overcoming nausea and vomiting with acupressure therapy if there is an error in grouping and incomplete data, the data cleaning process will be carried out.

- **Data analysis**

a) **Univariate Analysis**

Univariate analysis is an analysis conducted to determine comparative results in patients when acupressure therapy is carried out to prevent or reduce nausea and vomiting using SPSS data processing.

b) **Bivariate Analysis**

Bivariate analysis aims to see the effect of independent variables (acupressure therapy) and dependent variables (nausea and vomiting). Bivariate test analysis was conducted to see the effect of acupressure therapy before *(pre-test)* and after *(post-test)* in the experimental group using the Two Mean Difference test.

c) Ethical Considerations

This research is directly related to humans (respondents) as research samples so that researchers must apply the principles of research ethics. The aspects of research ethics used in the research process are:

1. Consent sheet *(Informed Conset)*

   Each respondent who participated in this study was given a detailed explanation and consent form so that the respondent could understand the researcher's intent and purpose and the impacts studied during the research process. If the respondent is willing, the researcher must obtain the respondent's signature on the consent form as proof of written consent. If the respondent refuses to become a respondent, the researcher does not force them and continues to respect their rights.

2. Confidentiality

   The confidentiality of information provided by respondents is guaranteed by the researcher.

3. Justice

   All respondents who participate in this study are treated fairly and given equal rights. All costs related to the study will be the responsibility of the researcher.

4. *Protection from* discomfort

   The researcher emphasized that if respondents feel unsafe and uncomfortable in conveying information which causes psychological symptoms, then respondents are asked to choose: to stop participating or to continue being respondents.

The results of the study on the effect of acupressure therapy on the incidence of nausea and vomiting at the Imelda Buruh Indonesia General Hospital, Medan are described in this chapter. The study was conducted at the Imelda General Hospital, Medan for a period of 1 week starting from May 2024 - May 2024. The number of respondents based on the calculation results was 20 people and all were willing to be respondents by signing the consent form provided. Respondents were divided into two groups, namely: 10 people for the intervention group with odd serial numbers and 10 people for the control group with even serial numbers.

4. RESULTS STUDY

- **Univariate analysis**

Univariate analysis explains the characteristics of respondents including; age, gender and duration of DM.

Table 1. Distribution of respondent characteristics

Variables	n= 2 0 (%)
Age	
12 – 25 years	15%
26 – 40 years	55%
>41 years	30%
Gender	
Man	40%
Woman	60%
Smoking history	
Yes	35%
No	65%
History of nausea and vomiting	
Yes	55%
No	45%
Nausea and vomiting incident	
Yes	60%
No	40%

Table 1. shows that the characteristics of respondents based on age are in the age range of the majority 26-40 years as much as 55% and the minority 12-25 years as much as 15%. Distribution of respondents by gender, the majority of women 60% and the minority of men as much as 40%. Distribution of respondents with a history of smoking the majority 65% and the minority smoke 35%. Distribution of respondents with a history of nausea and vomiting the majority experienced a history of nausea and vomiting as much as 55% and the minority did not experience nausea and vomiting as much as 45%. And the majority of respondents with the occurrence of nausea and vomiting as much as 60% and the minority did not experience nausea and vomiting as much as 40%.

Intervention group of nausea and vomiting scale for post spinal anesthesia patients, the effect of acupressure therapy before (pre test) and after therapy (post test) on the incidence of nausea and vomiting after spinal anesthesia in the recovery room of the Imelda Indonesian Workers Hospital, Medan.

Table 2. Gordon's scale of nausea and vomiting before (pre) therapy regarding the effect of spinal anesthesia in the recovery room of the Imelda Indonesian Workers Hospital, Medan.

NO	Characteristics	Frequency	Percentage
1	No nausea or vomiting	1	10%
2	Just experiencing nausea	6	60%
3	Experiencing retching or vomiting	3	30%
4	Had nausea for 30 minutes and vomited 2 times	0	0%

	Amount	**10**	**100%**

From Table 2, it can be concluded that before being given acupressure therapy, 10% of respondents did not experience nausea or vomiting, 60% of respondents experienced nausea, 30% of respondents experienced retching or vomiting, and 0% of respondents experienced nausea for > 30 minutes and vomiting > 2 times.

Table 3. Scale of nausea and vomiting after (post) therapy according to Gordon regarding the effect of spinal anesthesia in the recovery room of the Imelda Indonesian Workers Hospital, Medan.

NO	Characteristics	Frequency	Percentage
1	No nausea or vomiting	8	80%
2	Just experiencing nausea	2	20%
3	Experiencing retching or vomiting	0	0%
4	Had nausea for 30 minutes and vomited 2 times	0	0%
	Amount	**10**	**100%**

From Table 3, it can be concluded that after being given acupressure therapy, 80% of respondents did not experience nausea and vomiting, 20% of respondents experienced nausea, and 20% of respondents experienced...

retching or vomiting as much as 0% and respondents experienced nausea > 30 minutes and vomiting as much as > 2 times as much as 0%.

Table 4. Control group scale of nausea and vomiting in post-spinal anesthesia patients, the effect of acupressure therapy on the incidence of nausea and vomiting after spinal anesthesia in the recovery room of the Imelda Indonesian Workers Hospital, Medan.

NO	Characteristics	Frequency	Percentage
1	No nausea or vomiting	**4**	40%
2	Just experiencing nausea	6	60%
3	Experiencing retching or vomiting	0	0%
4	Had nausea for 30 minutes and vomited 2 times	0	0%
	Amount	**10**	**100%**

From Table 4, it can be concluded that 40% of respondents in the control group did not experience nausea and vomiting, 60% of respondents experienced nausea, 0% of respondents experienced retching or vomiting, and 0% of respondents experienced nausea for > 30 minutes and vomiting > 2 times.

- **Bivariate Analysis**

The difference in the average score of nausea and vomiting intensity in the intervention group before and after acupressure therapy.

Table 5. *wilcoson*

Group	n	Mean (SD)	Median
Intervention	10		
Before	10	1.90	2.0
After	10	1.20	1.0
P value =	0.0		

Wilcoson test show Difference in average pain intensity scores in the intervention group and control group Table 5 shows the average score of the intensity of nausea and vomiting before acupressure therapy in the Intervention group was 1.90 . In the measurement after acupressure therapy, the average score of the intensity of nausea and vomiting decreased to 1.20. The difference in the average score of the intensity of nausea and vomiting before and after nausea and vomiting therapy was 0.70. The results of the statistical test obtained an α value of 0.000 (α <0.05), so it was concluded that there was a significant or meaningful difference in the average score of the intensity of nausea and vomiting before and after acupressure therapy in the Intervention group.

Table 6. Distribution of Respondents' Participation in Following Acupressure Therapy

No	Variables	Frequency	Percentage %	P value
1	Yes	43	100	
2	No	0	0	
Amount		**43**	**100**	

From table 4.6 it is known that 43 respondents (100%) participated in acupressure therapy , while none did.

Discussion

- **The Effect of Acupressure Therapy on the Incidence of Nausea and Vomiting After Spinal Anesthesia in the Recovery Room**

Based on **Table 1.** The results of the study show that the characteristics of respondents based on age are in the age range of the majority 26-40 years as much as 55% and the minority 12-25 years as much as 15%. The results of this study are almost the same as previous studies which found that the age group that experienced the most PONV was 25-39 years old (Anditiawan et al., 2023). The results of this study are also in line with previous studies

conducted on surgical patients with spinal anesthesia found that PONV tends to occur in patients under 60 years of age (Lekatompessy et al., 2022). Sizemore stated that the elderly are more protective against nausea and vomiting because elderly patients find it easier to control nausea and vomiting than younger patients and there is a tendency towards changes towards acute dystonic reactions.

Based on **Table 2.** respondents before being given acupressure therapy who did not experience nausea and vomiting were 10%, respondents experienced nausea were 60%, respondents experienced retching or vomiting were 30% and respondents experienced nausea > 30 minutes and vomiting > 2 times were 0%.

Meanwhile, based on **Table 3,** 80% of respondents who were given acupressure therapy did not experience nausea or vomiting, 20% of respondents experienced nausea, 0% of respondents experienced retching or vomiting, and 0% of respondents experienced nausea for > 30 minutes and vomiting > 2 times, there was a significant change.

Based on **Table 3.** that the respondents in the control group who did not experience nausea and vomiting were 40%, the respondents who experienced nausea were 60%, the respondents who experienced retching or vomiting were 0% and the respondents who experienced nausea > 30 minutes and vomiting > 2 times were 0%.

Meanwhile, based on **Table 5.** for the intervention group before (pre) and after (post) The results of statistical tests using the *Wilcoxon test* showed that the average score of the intensity of nausea and vomiting before acupressure therapy in the intervention group was 1.90 . In the measurement after acupressure therapy, the average score of the intensity of nausea and vomiting decreased to 1.20. The difference in the average score of the intensity of nausea and vomiting before and after acupressure therapy was 0.70, a p value of 0.000 was obtained P <0.05, which means that acupressure therapy was given.

study is in line with the study conducted by Eslami et al, which found that the application of P6 acupressure measured 1, 3 and 7 hours after surgery had an effect on nausea and vomiting after acupressure intervention (p = 0.001).

In another study of acupressure on nausea and vomiting in laparotomy patients conducted by Rahmayati, the results showed that there was a significant decrease between the RINVR score before and after acupressure intervention with a decrease in the average RINVR score of 2.18 with a p-value of 0.004 <α (0.05). Likewise, previous research conducted by (White et al., 2012) showed a significant decrease, namely P value = 0.04. This study is in line with the study conducted by Eslami et al, who found that the application of P6 acupressure measured 1, 3 and

7 hours after surgery had an effect on PONV since posttest I and II measurements, namely 3 hours and 7 hours after the administration of acupressure intervention (p = 0.001).

5. CONCLUSION And SUGGESTIONS

Conclusion

1. Based on the characteristics of respondents based on age, they are in the age range of 26-40 years, which is 55%, based on gender, the majority of respondents are women, which is 60%, respondents based on a history of smoking are 65%, the distribution of respondents with a history of nausea and vomiting is 55%, and the majority of respondents with nausea and vomiting are 60%.
2. The average difference in the score of nausea and vomiting intensity before and after nausea and vomiting therapy was 0.70.
3. Based on the control group respondents assessed using the Gordon scale, the average respondent experienced nausea, namely 60%.
4. The results of the statistical test obtained an α value of 0.00 (α <0.05), so it was concluded that there was a significant/meaningful difference in the average nausea and vomiting scores before and after acupressure therapy in the Intervention group .

Suggestion

1. For Imelda General Hospital Indonesian Workers Medan

   It is necessary to conduct a risk scoring of nausea and vomiting in patients before surgery to minimize the occurrence of post-operative nausea and vomiting.
2. For Health Workers

   Acupressure therapy is recommended as one of the interventions based on *evidence-based* nursing that is useful for overcoming nausea and vomiting in patients after spinal anesthesia, so it is expected that acupressure therapy can be applied in nursing practice. In addition, the results of the study can be one of the references regarding the guidelines for implementing acupressure therapy in health institutions.
3. For Researchers

   Further researchers are expected to add intervention time so that it can provide a greater impact. And for further researchers, it is necessary to analyze the factors that influence the occurrence of nausea and vomiting.

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