



Effectiveness of Back Massage Therapy in Preventing Pressure Sores in Unconscious Patients: A Case Study

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ABSTRACT

Patients with neurological disorders, especially those with reduced consciousness, will experience a decrease in their ability to mobilize. Patients who experience decreased ability to mobilize for a long time are at risk of developing pressure sores. The presence of pressure in the protruding bone area causes pressure sores that block blood flow and cause injury to necrosis of the skin tissue. Nurses can intervene to improve blood flow and reduce the occurrence of pressure sores, namely by doing back massages. Back Massage helps improve circulation in areas where the bones are protruding so that it can prevent pressure sores. This study aimed to explain the effectiveness of the Back Massage Therapy intervention in preventing pressure sores in patients with a decreased level of consciousness. The research method used is a case study with a research time of 3 days, and data sources were obtained from medical records, assessments, and direct observation of patients. Based on the results of the evaluation before and after the back massage, it showed that there was a change in the condition of the skin before and after the procedure; namely, there were no signs of redness, abrasions, bluish or necrosis in the back area and bony prominences. Back Massage can reduce the risk of pressure sores in patients with decreased consciousness.

Keywords: Back Massage, Pressure sores, Decreased consciousness

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I. INTRODUCTION

Patients undergoing treatment in the ICU (Intensive Care Unit) room are at high risk of experiencing pressure sores due to long bed rest, especially in patients with decreased consciousness (Lubis & Saraswati, 2018). Patients with neurological disorders, especially those

that result in a decrease in consciousness, will experience a reduction in their ability to mobilize (Armanda et al., 2022). Wardani & Nugroho's study (2022) stated that most patients who experience decreased ability to mobilize in the long term, patients who experience reduced sensory perception abilities, and patients

with chronic diseases and urinary incontinence are at risk of developing pressure sores. Pressure sores are a type of wound that appears due to pressure that lasts for a long time on certain parts of the body, causing tissue ischemia, which leads to decubitus ulcers (Badrujamaludin et al., 2022).

The incidence of pressure sores worldwide in the ICU room is around 1-56% (Badrujamaludin et al., 2022). The incidence of decubitus has a different presentation in every country in the world. In some hospital settings in the United States, the incidence of pressure sores ranges from 4.7-29.8%, and in the United Kingdom, it ranges from 7.9-32.1%. In the nursing home setting (in acute care and rehabilitation), the incidence of pressure sores in Europe ranges from 3-83.6%, and in Singapore ranges from 9-14% (Nurahmandani et al., 2016). In Indonesia, the incidence of pressure sores in patients undergoing treatment in the ICU reaches up to 33%. This figure is very high compared to the incidence of pressure sores in Southeast Asia, reaching 2.1-31.3% (Nurahmandani et al., 2016). The high incidence of pressure sores, especially in Indonesia, is one of the benchmarks that represent the quality of nursing care (Nisak et al., 2019). Pressure sores experienced by patients treated in the ICU can occur due

to nurses' lack of monitoring, observation, and skin care. This lack of monitoring disrupts skin integrity on body parts that experience pressure (Nisak et al., 2019).

Pressure ulcers are caused by several risk factors, namely decreased mobility, frictional force, lack of skin moisture, and decreased sensory function of body movements for a long time (Badrujamaludin et al., 2022). Decreased mobility and frictional forces cause pressure, especially on areas of the body that become bony prominences. The pressure causes ischemia in the tissue beneath the bony prominence. Ischemia occurs due to a lack of blood flow to the bony prominence area. Obstruction of blood flow will inhibit oxygenation and nutrition to the tissues, causing injury to necrosis in the skin tissue (Widiyati et al., 2023).

Nurses can take therapeutic actions to improve blood flow to reduce the occurrence of pressure sores, namely, doing massage. Massage therapy prevents pressure sores with minimal side effects (Agustina et al., 2023). Some body parts of concern in massage are the protruding bones, such as the scapula, sacrum, elbow, and heels. The part of the body with many protruding bones is the back, which consists of the scapula, sacrum, and vertebrae (Sihombing et al., 2016). The

advantages of doing a Back Massage for \pm 3-5 minutes are that it can provide a comforting effect and improve blood circulation, including blood circulation in the tissue under the bony prominences. Therefore, the authors are interested in reporting cases of patients with decreased consciousness by providing back massage nursing interventions to prevent pressure sores.

2. METHODS

Researchers used the case study research method, namely reporting cases of patients with decreased consciousness by providing back massage nursing interventions to prevent pressure sores. Researchers obtained the data for this research from medical record reviews, assessments, and direct observations of patients. This back massage uses an olive oil barrier to reduce friction during massage. The implementation of giving Back Massage using olive oil has previously obtained approval from the patient's family as the patient's guardian because it is impossible to get consent from the patient directly with a decrease in consciousness. Giving Back Massage using olive oil was carried out for three days of treatment, namely on 01, 02, and 03 March 2023, in the ICU room for 3-5 minutes once a day. Giving Back Massage is carried out

simultaneously with personal hygiene actions that the ICU nurses do every morning and evening shift. At least two nurses assist in this action to help tilt the patient to make it easier to massage the patient's back.

3. CASE REPORT

A 23-year-old male patient had his first seizure with open eyes facing upwards and a tight mouth and appeared to be foaming, accompanied by stiffness in all four extremities, which lasted for \pm 3 minutes. Furthermore, the patient had recurrent seizures three days later with the same pattern and duration. Finally, the patient's family brought the patient to the hospital with composmentis of conscious condition (GCS E4 V5 M6). After that, the seizures subsided after getting anti-seizure drugs. However, during hospitalization, the patient continued to have recurrent seizures. In the end, the patient, five days later, suddenly experienced a decrease in consciousness (GCS E1 V1 M1) and was immediately transferred to the ICU.

Researchers assessed patients after ten days of treatment in the ICU. The assessment showed the patient's consciousness was coma (GCS 3 (E1 V1 M1)). The patient's complaints during the assessment were recurrent seizures and excessive accumulation of saliva and

sputum. Assessment of vital signs obtained: blood pressure 138/75 mmHg, pulse 104 x/min, temperature 37.3°C, respiratory rate 20 x/min, and SPO2 96% with the help of a CPAP-type tracheostomy ventilator. Focused data assessment obtained results; namely, there were additional sounds of crackles in both lung fields, coma level of consciousness with GCS E1 V1 M1, fully assisted activities, very minimum muscle strength, and minimal physical mobility.

Furthermore, the researchers implemented Back Massage using olive oil for three days of treatment. These times are on 01, 02, and 03 March 2023, in the ICU room for 3-5 minutes once a day. Giving Back Massage is carried out simultaneously with personal hygiene actions that the ICU

nurses do every morning and evening shift. At least two nurses assist in this action to help tilt the patient to make it easier to massage the patient's back.

4. RESULTS

Evaluation of the results of implementing Back Massage using olive oil for 3-5 minutes once a day to reduce the risk of pressure sores focused on assessing the condition of the back skin and protruding areas of the bones to see an increase or decrease in the risk of pressure sores. The patient's back skin is assessed by evaluating before and after the back massage. The results of the evaluation of Back Massage using olive oil for 3-5 minutes once a day on the patient's skin condition are shown in Table 1.

Table 1. Back massage evaluation results

Indicator	Before	After		
		1 st Day	2 nd Day	3 th Day
Skin's condition	The condition of the back skin is moist, contaminated with the patient's sweat and fecal fluids, with no redness, abrasions, bluish discoloration, and necrosis in the back area and bony prominences (scapula, vertebrae, and sacrum)	The condition of the back skin is dry, clean, not contaminated with the patient's sweat and fluids, with no redness, abrasions, bluish discoloration, and necrosis in the back area and bony prominences (scapula, vertebrae, and sacrum)	The condition of the back skin is dry, clean, not contaminated with the patient's sweat and fluids, with no redness, abrasions, bluish discoloration, and necrosis in the back area and bony prominences (scapula, vertebrae, and sacrum)	The condition of the back skin is dry, clean, not contaminated with the patient's sweat and fluids, with no redness, abrasions, bluish discoloration, and necrosis in the back area and bony prominences (scapula, vertebrae, and sacrum)

Based on the evaluation results in Table 1, there was a change in skin condition from before and after giving back massage for three days of treatment. The skin's condition before being given back massage therapy is moist and contaminated with the patient's sweat and fecal fluids. However, after being given back massage therapy using olive oil, the skin condition becomes dry, clean, and not contaminated with the patient's sweat and fluids. Furthermore, regarding the condition of the skin before getting the back massage, there were no signs of redness, abrasions, bluish, or necrosis in the back area and protrusions of the bones. Hence, the skin condition after the back massage was also the same: no signs of redness, abrasions, bluish, or protrusions in the back area and protrusions of the bones. These results indicate that after being given back massage therapy, the skin condition does not worsen the disease, leading to pressure sores.

5. DISCUSSION

Based on the evaluation of giving back massage before and after the procedure, there were no signs of redness, abrasions, bluish, or necrosis in the back area and bony prominences. These results show that after being given back massage therapy, the skin condition does not

worsen the disease, leading to pressure sores. Improving the condition of the back skin after back massage therapy using olive oil is also in line with the research of Lubis & Saraswati (2018), which states that back massage affects preventing pressure sores, especially not showing signs of redness and necrotic wounds after being given a back massage for 3-5 minutes in 1 to 2 days.

In the author's opinion, this can happen because back massage can help improve blood circulation in the protruding areas of the bones in the back (scapula, sacrum, and vertebrae) so that if blood circulation and tissues in these areas get sufficient oxygenation, tissue hypoxia will not occur which will result in injury to necrosis. In addition to improving circulation, back massage using olive oil also reduces pressure on the back so it will not interfere with blood circulation in the tissue under bony prominences, which triggers the appearance of pressure sores.

The confounding factor from the evaluation of giving back massage using olive oil was the implementation of giving back massage accompanied by mobilization of patients on the right and left tilts by ICU nurses every morning and evening shift. Therefore, changing the position reduces pressure and increases mobilization to reduce the risk of pressure sores. Changing the patient's position

every 2 hours can reduce the risk of decubitus ulcers. This statement aligns with research by Huda (2012), which states that changing the patient's position every 2 hours can reduce the risk of pressure sores in patients treated in the ICU. Apart from changing position, another confounding factor is the provision of bedding in air cushions or decubitus mattresses; this also helps reduce the risk of pressure sores. Pads or air cushions can prevent pressure on bony prominences on rugged surface mats because a hard surface will cause friction and pressure to increase, thereby increasing the risk of decubitus ulcers (Hamdana et al., 2021). Apart from changing position and giving decubitus mats, another confounding factor for giving back massage is the fulfillment of adequate nutrition in patients. Based on the nutritional needs of the patient by a nutritionist, while being treated in the ICU, the patient receives 6 x 200 ml/24 hours of peptibren nutrition via the NGT, so that with adequate patient nutritional intake, it can help reduce the risk of pressure sores. This statement was confirmed in Sihombing's study (2016), which stated that patients with poor nutritional status usually experience hypoalbuminemia (serum albumin levels below 3g/100 ml) and anemia. Patients with serum albumin levels below 3 g/100 ml

are at high risk of developing pressure sores. In addition, inadequate nutrition can also cause slow wound healing.

6. CONCLUSION

Based on the results of the study show that giving Back Massage using olive oil for 3-5 minutes once a day can reduce the risk of pressure sores in patients with reduced awareness and can prevent back skin conditions from redness, abrasions, and necrotic wounds, which lead to pressure sores.

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AUTHOR CONTRIBUTIONS

Substantial contribution to conception, data collection, analysis: Yeni Zanuba Arifa. Writing manuscript and revision: Yeni Zanuba Arifa, and Rismawan Adi Yunanto.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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