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The Effectiveness of Mozart Classical Music Therapy to Overcome Pain in Osteosarcoma Pedis Dextra Post-Amputation Surgery in the Darmawan Pavilion Treatment Room, 6th Floor, Gatot Soebroto Army Hospital

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Abstract

Pain is one of the problems that can occur in post-osteosarcoma amputation surgery. Music therapy is one of the therapy programs that is useful for reducing pain levels. This study aims to determine the effectiveness of classical Mozart music therapy on reducing pain levels in post-osteosarcoma amputation surgery patients. This study uses a descriptive research method in the form of a case study in post-osteosarcoma amputation surgery patients. Classical Mozart music therapy was given for \pm 15 minutes in 3 meetings. The results of the study showed that there was a decrease in pain levels from a pain scale of 4 (moderate pain) to a pain scale of 1 (mild pain) after being given classical Mozart music therapy. The conclusion obtained is that classical Mozart music therapy is effective in reducing pain levels in post-osteosarcoma amputation surgery patients at RSPAD Gatot Soebroto.

Keywords: Osteosarcoma; Amputation; Music therapy; Pain

Introduction

Tumors are conditions when cell proliferation is abnormal. Tumors are classified into benign and malignant tumors. Benign tumors are limited to the initial location and do not spread to other tissues or parts of the body. While malignant tumors can spread or attack surrounding tissues through the circulatory or lymphatic systems (Mahyudin, 2017). There are various types of malignant tumors and one type of malignant tumor that needs to be watched out for is osteosarcoma.

Osteosarcoma is a malignant tumor in the bone with complaints of severe pain in the bones and joints, limited body movement, edema around the bones, or at the ends of the bones. This occurs due to pathological fractures or changes in bone shape, weight loss, and rapid fatigue (Dwijayanti, Wiratnaya, & Setiawan, 2019).

Based on WHO data, Osteosarcoma is the most common primary bone tumor with an estimated incidence of 4-5 / 1,000,000 per year. The incidence of osteosarcoma frequency in Europe was found to be 0.2-3 / 1,000,000 per year in the 15 – 19 year age group (Laux et al, 2014).

The prevalence of cancer according to the Basic Health Research Results in 2018 stated that it was 1.8% per mil throughout Indonesia. The highest prevalence of cancer was in the DIY Province at 4.9% per mil while the lowest was in the NTB Province at 0.9% per mil. The incidence of osteosarcoma is around 0.2% of all malignant tumors with an incidence of 3 people per 1,000,000 population.

Based on the results of research conducted at Sanglah Hospital/FK Unud in the period 2013-2017, there were 60 cases, with the most osteosarcoma cases found in 2016. Of the 60 cases, the most osteosarcoma

patients were in the 11-20 year age group. With a percentage based on gender, 71.7% were male and 28.3% were female.

Osteosarcoma or bone cancer is a cancer in the bone that can damage bone tissue, causing bones to become brittle, is generally aggressive and tends to spread to other organs (Cahyaningrum, 2022). The exact cause of osteosarcoma is not yet known. However, several studies have linked the development of osteosarcoma with race, gender, age, gene changes, trauma, and radiation exposure.

In children, this disease appears in a variable manner according to the region and certain time frequency (sporadic). Meanwhile, in adults, 1/3 of cases that occur appear accompanied by disorders in the bone regeneration process (Paget's disease) or other cancers. This tumor usually occurs at the age of <15 years with the first peak occurring in the second decade of life. In women, it often occurs at the age of 16 years and 18 years in men. While the second peak occurs in geriatric patients over 60 years of age (Fernandes, Melo-Alvim, Lopes-Bras, & Qosta, 2021).

One of the treatments for osteosarcoma that can be done is surgery/amputation surgery. In the Osteosarcoma Management Guidelines (2017), osteosarcoma can be treated by performing amputation surgery. Amputation for osteosarcoma can be performed if the requirements for Limb salvage surgery (LSS) are not met. In high-grade osteosarcoma that does not allow neoadjuvant chemotherapy (eg: ulcers, bleeding, very large tumors), surgery is performed first, followed by adjuvant chemotherapy.

Surgical procedures can cause tissue injury. Pain that occurs after tissue injury is associated with surgery and should disappear during the healing process. Surgical injury triggers various responses in the pain matrix, ranging from sensitization of peripheral and central pain pathways to feelings of fear, anxiety, and frustration (Jungquist, Vallerand, Sicoutris, Kwon, & Polomano, 2017). Pain is defined as an unpleasant

situation originating from a specific area, caused by tissue damage and related to the person's past experiences. Pain is subjective and no individual experiences the same pain. The level of pain can be assessed or measured using a pain scale assessment, starting from 0 (no pain), 1-3 (mild pain), 4-6 (moderate pain), to 7-10 (severe pain) (Sugiyanto, 2019).

According to the International Association for the Study of Pain (IASP), pain is an unpleasant sensory and emotional experience due to tissue damage or the potential to cause tissue damage, or a condition that describes such tissue damage. There are 2 nursing care that can be used to reduce or eliminate pain, including pharmacological therapy and non-pharmacological therapy.

The first therapy is pharmacological therapy, which can be done using pain relievers (analgesics). The second is non-pharmacological therapy which can be done with distraction techniques, hypnosis, warm/cold compresses, aromatherapy (Mayasari, 2016). Distraction techniques are one way to reduce pain by diverting attention to something else so that the client's awareness of their pain is reduced.

One of the effective distraction techniques is with music because it has been proven to show effects, namely reducing anxiety and depression, eliminating pain, lowering blood pressure and reducing heart rate (Mutmairannah & Rundulemo, 2019). In providing music therapy, the music chosen is generally soft and regular music, such as instrumental or Mozart's classical music. Several studies have shown that Mozart's classical music and the client's favorite music can reduce pain intensity (Sari & Adilatri, 2013).

According to research conducted by Mutmairannah and Maslin Rundulemo (2019), it was found that postoperative patients at the Anutapura General Hospital, Palu, who had a mild pain scale were more than patients who had a moderate pain scale after being given music therapy. This is because listening to music will divert

attention from pain and provide a sense of comfort and relaxation, so that it can reduce the pain experienced by patients.

Method

The research design used is a descriptive study in the form of a case study. This study uses a case study design, namely describing and describing nursing care for changes in comfort (pain) in postoperative patients in the Darmawan Pavilion Treatment Room, VI floor, Gatot Soerbroto Army Hospital, which is analyzed in depth and reported narratively.

The subject of the case study to be studied is one male patient with osteosarcoma pedis dextra after amputation surgery who experienced impaired comfort (pain). Care was carried out for three days with the provision of classical Mozart music therapy when pain appeared with a duration of \pm 15 minutes. The tools/instruments needed in this study are the medical surgical nursing assessment format, nursing kit (stethoscope, sphygmomanometer, thermometer), Visual Analogue Scale (VAS) for pain scale, SOP for classical Mozart music therapy.

Results and Discussion

A client named Mr. A, 22 years old, entered the Darmawan Pavilion treatment room on the 6th floor on April 3, 2023 with a diagnosis of osteosarcoma pedis dextra and underwent amputation surgery. The main complaint, the client complained of pain in the lower extremity area on the right side, namely the post-amputation wound, the pain was felt intermittently, sharp like being stabbed and spreading to the groin with a pain scale of 4. The client was restless and seemed to be wincing in pain, especially when doing activities or movements.

The client looked weak and the client's current needs were still being assisted. According to the theory of clients with post-operative osteosarcoma at the time of assessment there were complaints of acute pain with facial expressions appearing

grimacing, restless, protective, increased pulse rate, difficulty sleeping, increased blood pressure, altered breathing patterns, altered appetite, disturbed thinking processes, withdrawing, and focusing on oneself. While in the case of Mr. A, complaints of pain were found in the surgical wound, the pain was felt to come and go, sharp like being stabbed and spreading to the groin with a pain scale intensity of 4, restless, grimacing in pain especially when doing activities or movements, weak and current needs are still being assisted

As stated by (Randi & Susilaningih, 2021) that 60% of postoperative patients suffer from severe pain, 25% moderate pain and 15% mild pain, because surgical incision wounds can cause the release of pain impulses by free nerve endings mediated by the sensory system. There are several stages in the pain process: the presence of receptors that transmit pain perception in the form of stimulation, the presence of stimulus detectors, amplifiers, and conductors to the central nervous system (Hermanto et al., 2020).

Three nursing diagnoses found in clients with osteosarcoma after amputation are acute pain related to physiological injury agents, impaired physical mobility related to pain, risk of infection related to the effects of invasive procedures, but the priority diagnosis in the case is acute pain related to physiological injury agents. the author carries out nursing interventions. This is in line with what Sorejo (2023) wrote that in postoperative patients the impact of the problems that arise is acute pain.

Based on the results obtained, the author performed all interventions on the patient, but in this case, the intervention was more focused on the diagnosis of pain as a priority diagnosis. The objectives and outcome criteria are as follows: after nursing actions for 3x24 hours, it is expected that pain can be reduced with the outcome criteria of decreased pain complaints, decreased grimacing, decreased restlessness, able to do independent activities, Interventions carried out identify the location, characteristics,

duration, frequency, quality, intensity of pain, identification of pain scale.

Therapeutic: provide non-pharmacological techniques to reduce pain (Mozart classical music therapy), Education: explain pain relief strategies, encourage independent pain monitoring, collaboration: collaboration in providing analgesics, if necessary (Ketorolac 3x1 30 mg iv). Implementation is carried out for three days. In connection with the prioritization of the diagnosis of acute pain related to physiological injury agents (post-surgery), so that the prioritized diagnosis is acute pain, this is confirmed by (Rizqa & Rochmawati, 2023) that one of the nursing problems that often arises in post-operative patients is severe acute pain or acute pain that often occurs during treatment or healing in patients who have undergone surgery.

By prioritizing the diagnosis of acute pain related to physiological injury agents (post-surgery), the author provides Mozart's classical music therapy technique. This is in line with research (Kadek Ayu Suarmini, 2020 in research by Alfred and Campbell) has proven that Mozart's classical music can reduce pain in patients. Compared to other classical music, the melody and high frequency in Mozart's classical music can stimulate and empower pain. This is done for the process of reducing the scale of pain in patients.

The implementation of nursing was carried out from April 10, 2023 to April 12, 2023 on Mr. A with osteosarcoma after amputation surgery. Nursing actions given in the process of reducing the pain scale level in Mr. A include starting from identifying pain with the results on the first day the patient appeared to be grimacing, pain scale 4 (moderate pain), then providing non-pharmacological techniques to reduce pain with distraction therapy using classical Mozart music therapy with the results of the patient appearing to grimace slightly less, the pain scale decreased to 3 (mild pain).

On the second day, distraction therapy was carried out again using Mozart classical music therapy with the result that the patient

appeared relaxed, the pain scale decreased to 2 from the previous pain scale of 3. And on the third day, the patient was given Mozart classical music therapy again to reduce the level of pain scale with the result that the patient appeared relaxed to the point of falling asleep, the pain scale decreased to 1 from the previous pain scale of 2.

This is in accordance with the research of Mutmairannah and Rundulemo (2019), one of the effective distractions is music because it has been proven to show effects, namely reducing anxiety and depression, relieving pain, lowering blood pressure and reducing heart rate. The music chosen is generally soft and regular music, such as instrumental or Mozart's classical music.

According to Kadek Ayu Suarmini (2020), in a study by Alfred and Campbell, it has been proven that Mozart's classical music can reduce pain in patients. Compared to other classical music, the melody and high frequency of Mozart's classical music can stimulate and empower pain. This is done to reduce the pain scale in patients.

Conclusion

The conclusion obtained from the provision of distraction techniques in the form of classical Mozart music therapy has proven effective in reducing the scale of pain in post-amputation surgery patients. The benefits of providing classical music therapy to post-operative or post-surgery patients can calm the mind and emotions and can increase endorphin levels which can reduce pain so that a person feels relaxed.

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