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Application of Visual Distraction Diversion in An.G with Acute Lymphoblastic Leukemia (ALL) in Reducing Acute Pain Levels at the RSPAD Gatot Soebroto Hospital

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Abstrack

Pediatric nurses play a crucial role in reducing acute pain levels in children with Acute Lymphoblastic Leukemia (ALL) through the implementation of visual distraction techniques. This case study aims to describe the use of visual distraction in reducing acute pain levels in a specific case of a 7-year-old child, An.G, who has ALL. The study design is descriptive, focusing on implementing visual distraction (watching) as an intervention for children with ALL. The case study involves an intensive nursing assessment of the child with ALL. The primary focus is to provide visual distraction as a means of pain management. The results showed a notable decrease in the child's FLACC score to 3, indicating improved comfort. In conclusion, the application of visual distraction proved to be effective in managing acute pain in children with ALL.

Keywords: Acute Lymphoblastic Leukemia, Acute Pain, Visual Distraction.

Introduction

Children encompass a broad age range, from infancy to adolescence, and undergo various developmental changes. During the school age of 6-12 years, children begin to exhibit increased productivity, including the ability to utilize logic, adapt to their environment, and engage in social interactions. These skills can be observed through their participation in group activities with peers, emotional regulation, ability to compete, and completion of simple tasks (Safitri, 2017). The development of children at this stage can be influenced by their overall health, particularly in cases of

childhood cancer. Among the various types of cancer affecting children, leukemia (blood cancer) is the most prevalent (Kemenkes, 2019). Leukemia is characterized by the abnormal proliferation of white blood cells or the excessive multiplication of blood-forming cells in the spinal cord and lymphoid tissue (Anamira, 2018).

Leukemia is the most prevalent form of cancer in children, accounting for approximately 31.5% of cases. Among children under the age of 15, around 15.7% of leukemia cases occur in developing countries. Among affected children, approximately 80% are diagnosed with Acute Lymphoblastic

Leukemia (ALL), while the remaining 20% suffer from Acute Myeloid Leukemia (AML). In 2015, the United States recorded 45,270 incidents of leukemia among children aged 0-14 years (American Cancer Society, 2015).

Patients diagnosed with acute lymphoblastic leukemia (ALL) require immediate treatment, typically in the form of chemotherapy. However, chemotherapy for ALL often leads to various side effects, including pain (Leukemia and Lymphoma Society, 2016). In managing ALL, pediatric nurses play a crucial role, particularly in preventive care, such as providing diversion techniques to alleviate acute pain issues (Anamira, 2018). According to a study conducted by Wandini (2020) titled "Reducing Pain Levels through Distraction Techniques Using Animated Cartoons," distraction has been found to effectively reduce pain. Distraction serves as a pain diversion strategy that redirects the patient's attention to other stimuli, minimizing the experience of pain and negative emotions.

A preliminary case study conducted between February and May 2022 at Gatot Soebroto Army Hospital revealed a prevalence of 90-100 cases of children suffering from ALL, with boys accounting for 70% and girls for 30%. Interviews conducted by the author with parents of child patients undergoing chemotherapy indicated that the pain was localized in both legs. The parents mentioned that they only provided a mobile phone as a means of distraction for the child's pain. Pain management in the pediatric ward, according to the interviewed nurses, primarily involved administering analgesics. Observations

made on the patients revealed restlessness and pain in the legs. The management of pain in ward An.G was carried out through collaborative efforts. The purpose of this case study is to describe the application of visual distraction techniques in managing Acute Lymphoblastic Leukemia in patient An.G.

Method

A descriptive case study design was employed to investigate intensive nursing assessments in children diagnosed with acute lymphoblastic leukemia (ALL). The case study involved a 7-year and 3-month-old girl as its subject, and nursing care was provided throughout the study. The primary focus of this case study was to explore distraction techniques for managing acute pain in children with ALL.

According to the interviews conducted in this case study, the parents of the patient reported that their child had been experiencing pain since undergoing chemotherapy. The pain primarily affected both of the child's legs. The parents mentioned that they would usually provide their child with a mobile phone to alleviate the pain. In contrast, the nurse interviewed in the pain room at An.G stated that the child was solely administered analgesics.

The results of observations obtained by pain handlers at An.G carried out collaborative action of administering paracetamol, children were not given distraction measures, the results of pain measurements carried out by the author with the Flacc scale showed a score of five. In the results of the physical examination carried out by nurses on TTV patients: Pulse:

120x/min RR: 24x/min Temperature: 36 , Weight: 33kg Height: 127cm LK: 127cm LP: 56cm, composmetic awareness, there is joint pain in the legs on the scales pain 5, P: As a result of the disease process Q: Being hit by a heavy object R: On both legs S: 5 T: It comes and goes. Laboratory examination results Hematology Laboratory results: Hemoglobin: 12.3 g/dl Hematocrit: 37% Erythrocytes: 4.2 million/ul Leukocytes: 3100/ul * Platelets: 25000/ul Segments: 32%* Lymphocytes: 50%* Monocytes: 12%* RDW : 18.10%* Clinical chemistry: SGOT(AST): 98U/L* SGPT (ALT): 71U/L.

Result

Data collection was conducted on May 30, 2022, at 13:00 WIB. Patient An. G was admitted to the hospital on May 30, 2022, at 12:00 WIB. The patient's medical diagnosis is Acute Lymphoblastic Leukemia (ALL). Patient An. G has been suffering from ALL since the age of 4 years and 3 months, and has experienced one relapse in 2021. On May 30, 2022, at 12:00, the patient arrived at Gatot Soebroto Army Hospital for chemotherapy. The patient's reported complaints include joint pain in the legs, loss of appetite, and nausea. The patient's vital signs are as follows: heart rate (N) of 100 beats per minute, body temperature (S) of 36°C, respiratory rate (RR) of 22 breaths per minute, and oxygen saturation (SpO2) of 98%. The patient appears to be in pain when moving excessively and exhibits restlessness. The patient is only able to engage in activities and exercise while in bed. The prescribed treatment consists of paracetamol 4x250 mg (intravenous), ondansetron 3x4 mg (intravenous), and

cyclophosphamide 1x100 mg (intravenous).

The data obtained from the study revealed nursing issues regarding the diagnosis of acute pain associated with physiological factors of injury (ALL), leading to the implementation of nursing care for patient An. G to enhance their health. The nursing interventions were designed to address and alleviate joint pain in both legs of the patient. These interventions included assessing the pain scale, observing verbal and nonverbal responses, positioning the patient comfortably, teaching non-pharmacological techniques such as recommended distraction techniques (watching), and collaborating with the administration of analgesics based on indications. The nursing care was implemented for a period of 3x24 hours, from May 30 to June 1, 2022. An. G was provided with visual distraction by watching for 10-15 minutes during episodes of pain, resulting from the disease process (P: Result of the disease process Q: Struck by a heavy object R: In both legs S: Intensity level 5 T: Occurs intermittently). Additionally, the patient was positioned comfortably in a supine position, and analgesic therapy was administered in collaboration with doctors, specifically paracetamol 4x250 mg intravenously, resulting in increased relaxation and comfort for the patient during rest.

The implementation results were documented using the SOAP method for 3 days (May 30, 2022, to June 1, 2022). On the first day, the parents reported subjective data indicating that their child experienced joint pain in the legs and weakness. The objective data showed a FLACC score of 5, with

the patient still grimacing, restless, and in pain. On the second day, the parents reported that the pain in the leg joints had reduced based on subjective data. The objective data indicated that the child appeared to be comfortable, with a FLACC score of 3. On the third day, the parents' subjective data indicated a further decrease in the pain in both legs. The objective data showed that the child looked relaxed and comfortable, with a FLACC score of 3. However, the patient still experienced joint pain in both legs when moving a lot, despite receiving pharmacological treatment in the form of Paracetamol. After 3 days of nursing care, the acute pain nursing problem was partially resolved. However, the patient still experienced joint pain in both legs.

Discussion

Based on the results of a case study conducted on An.G with acute lymphoblastic leukemia (ALL), it was found that visual distraction through watching is effective in reducing acute pain levels. This reduction in pain is characterized by decreased pain perception and increased comfort. These findings align with a research study conducted by Wandini (2020), which also concluded that distraction techniques are effective in managing pain in children. Distraction techniques involve non-pharmacological methods of pain management for children. According to Perry and Potter, as cited by Elkreem (2014), pain can elicit negative responses in children. Heightened pain can activate the sympathetic nervous system in the central nervous system, leading to increased cardiovascular and respiratory activity, as well as elevated

blood pressure. Distraction techniques, such as watching, can be employed to address pain.

Distraction is a technique that diverts attention away from pain and toward another stimulus. This technique can effectively reduce anxiety and pain by utilizing control mechanisms in the descending nerves, resulting in the transmission of fewer painful signals to the brain. Consequently, children who are provided with the distraction technique of watching animated cartoons exhibit lower pain levels compared to those who do not receive this form of distraction (Safari, 2019).

Based on the aforementioned explanations, the authors conclude that visual distraction techniques are effective in reducing acute pain among pediatric patients with acute lymphoblastic leukemia. This is due to the reticular activation that inhibits pain stimuli. When a person receives excessive sensory input, it can lead to the inhibition of pain signals to the brain, resulting in calmer, more comfortable children with reduced anxiety.

Conclusion

The conclusion drawn from this case study is that the implementation of visual distraction proves to be effective in decreasing the intensity of acute pain experienced by children with acute leukemia. This is evident through the reduction in pain levels and the observable comfort exhibited by the children.

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