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Research Article

NURSING CARE HYPOVOLEMIA MANAGEMENT CHILDREN WITH DENGUE HEMORRHAGIC FEVER IN RSHD BENGKULU

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ABSTRACT

Background:
Dengue Hemorrhagic Fever (DHF) is a disease caused by the dengue virus which is classified as an Arthropod-Borne Virus, genus Flavivirus, and family Flaviviridae. DHF is transmitted through mosquito bites from the genus Aedes, especially Aedes aegypti which can attack all age groups. According to data from the World Health Organization, an estimated 500,000 DHF patients require home care each year and most of the sufferers are children, in Indonesia there are 129,435 cases. This study aims to determine the Description of Nursing Care for Hypovolemia Management in Children with Dengue Hemorrhagic Fever with Hypovolemia.
Methods: This case study uses a qualitative descriptive research design using a death process approach, providing a systematic, actual and accurate description of Nursing Care for Hypovolemia Management in Children with Dengue Hemorrhagic Fever with Hypovolemia.
Results: there was an increase in fluid status with SLKI at level 3 (moderate) in both patients
Conclusion: increase in fluid status with SLKI at level 3 (moderate).

Keywords: hypovolemia, treatment, dengue hemorrhagic fever, child

INTRODUCTION

Children are vulnerable and dependent creatures who are always filled with curiosity, active, and full of hope. Fulfillment of children's rights to live, grow, develop, and participate, and receive protection from violence and discrimination is the goal of child protection. A healthy child is a child who is physically and mentally healthy (Febrianti, 2020). A child's health starts from a healthy lifestyle. A healthy lifestyle can be applied starting from the smallest such as regulating a healthy diet, maintaining personal hygiene and the home environment, this will have an impact on the cycle pattern of increasing transmission of diseases, where weather and the environment have a major influence on increasing determinants of disease transmission, humidity and temperature of the house greatly affect the survival of adult mosquitoes, because that is what can affect children's health, so that they can be attacked by disease, one of which is DHF (Febrianti, 2020).

Dengue Hemorrhagic Fever (DHF) is a disease caused by the dengue virus which is classified as an Arthropod-Borne Virus, genus Flavivirus, and family Flaviviridae. DHF is transmitted through mosquito bites from the Aedes genus, especially Aedes aegypti which can attack all age groups (Febrianti, 2020). Dengue Hemorrhagic Fever (DHF) is one of the categories of extraordinary disease events in Indonesia. The dengue fever virus is very suitable for living in tropical or subtropical climates in various parts of the world, where they cause seasonal outbreaks with various variations.(Setyadevi & Rokhaidah, 2020). In addition, DHF can also cause bleeding such as nosebleeds and bloody stools, resulting in a drop in the number of platelets to below 100,000/µL, which can cause patients to experience fluid deficiency or hypovolemia (Fadila & Argarini, 2023). One complication of hypovolemia is hypovolemic shock, which, if not treated promptly, can have devastating consequences for the body. Nurses play a crucial role in providing nursing care to address the nursing problems of hypovolemia in children (DHF), including hypovolemia management therapy (Faida & Utami, 2023).

According to data from the World Health Organization (WHO, 2020), an estimated 500,000 DHF patients require hospitalization each year and most of the sufferers are children, in Indonesia there are 129,435 cases. Based on data from the Ministry of Health (2021) it states that of the 108,303 DHF cases in 2020, 3.13% affected children aged <1 year, 10.68% affected children aged 1-4 years and 30.46% affected children aged 5-14 years. In 2021, of the 51,048 DHF cases, 2.60% affected children aged <1 year, 10.68% affected children aged 1-4 years and 30.46% affected children aged 5-14 years (Relista et al., 2023). Data from the Ministry of Health shows that in March 2024, DHF cases in Indonesia reached 53,131 cases. With deaths due to DHF reaching 404 people. DHF cases increased again the following week to 60,296 cases with a death toll of 455 cases (KemenkesRI, 2024). Based on data from the Bengkulu Provincial Health Office, the total number of Dengue hemorrhagic fever cases was 1,537 cases. This figure shows an increase in the number of DHF cases in 2024 compared to 2023, where throughout the year there were only 48 DHF cases (DINKES, 2024).

MATERIAL AND METHODS

This case study uses a qualitative descriptive research design using a protection process approach. In this final scientific paper case study, the author

attempts to provide a systematic, actual and accurate description of Nursing Care for Hypovolemia Management in Pediatric Patients with Dengue Hemorrhagic Fever (DHF) with Hypovolemia at RSHD Bengkulu City in 2025. The care approach used includes the stages of assessment, diagnosis, planning, implementation, and evaluation.

RESULTS

Client I with the initials An.A. is 9 years old, male, still in elementary school, and lives in Harapan Pondok village. The client was admitted to the hospital on March 7, 2025 in the Mina room on the 2nd day of treatment with a diagnosis of Dengue Hemorrhagic Fever (DHF) on the 5th day, the assessment date was March 8, 2025 where the client was accompanied by his mother, Mrs. N, who is 32 years old, is Muslim with a high school education, and his mother is just a housewife. Client II with the initials An. J, 6 years old with male gender, current education is still elementary school and his address is Jl. Meranti 4 Sawah Lebar, the client was admitted to the hospital on March 5, 2025 in the Mina room on the 3rd day of treatment with a medical diagnosis of Dengue Hemorrhagic Fever (DHF) on the 7th day, the assessment date was March 8, 2025, the client was accompanied by his mother, Mrs. M, 28 years old, Muslim, with his mother's last education level being high school, and his mother was just a housewife.

Reason for hospitalization of Client I Mrs. N, his mother said that A had had a fever for approximately 5 days before being admitted to the hospital, had been taken to the clinic but the fever remained high and the intensity fluctuated, cold sweats, dry pale lips, and decreased appetite. Meanwhile, the reason for admission to hospital for Client II, Mrs. M, said that An.J had had a fever for about a week, had been taken to the midwife but the intensity of the fever fluctuated, red spots appeared on the feet after the 5th day of fever, dry skin, pale lips, and An.J looked very weak when taken to the hospital.

The current medical history of client I, An.A, reports feeling weak, rarely drinking, and not eating. Mrs. N reports that An.A sometimes has a fever that fluctuates, has little or no yellow urine, has dry lips, pale skin, and has decreased skin turgor. Vital Signs: N: 109 x/minute , Temperature: 37.7, RR: 24 x/minut, SPo2: 99%. Meanwhile, the current health history of client II, An.J, stated that he was weak, and Mrs. M stated that An.J still frequently had a fever that fluctuated and was weak. An.J was still reluctant to drink because it tasted unpleasant, ate little, had dry lips, dry skin, slow skin turgor, and had red spots on his feet. Vital Signs: N: 102 x/minute, Temperature: 37.8, RR: 22 x/minute, SPo2: 99%. Family health history of client I Mrs. said that her younger sibling An.A had a fever about 3 months ago and was admitted to the same hospital as her older sibling An.A. Family health history of client II Mrs. M said that no one in Mrs. M's family had experienced the same thing as An.J previously. complete immunization history in both patients. based on laboratory results for client I In the last examination of An.A on March 8, 2025, the hemoglobin value was 12 g/dl, hematocrit 50%, platelets 107,000 µl, leukocytes 8000 µl where based on laboratory results showed a decrease in the normal value of platelets, namely 107,000 µl from the normal value of 150,000 – 450,000 µl. Laboratory results for client II. On An.J's last examination on March 8, 2025, the hemoglobin value was 13 g/dl, hematocrit 48%, platelets 130.00 µl, leukocytes 6000 µl,

where based on the laboratory results, the platelet value decreased by 130.00 µl from the normal value of 150,000 – 450,000 µl. In both laboratory results, the platelet counts showed decreased, indicating symptoms of DHF.

The results of the examination of the degree of dehydration based on clinical conditions showed that in An.A, the general condition was lethargic and thirsty (2), sunken eyes (2), the condition around the mouth was very dry (3), breathing <30x/minute (1), skin turgor was less elastic (2), pulse <120x/minute (1). with a total score of 11 which means moderate dehydration. Meanwhile, the results of the examination of the degree of dehydration based on clinical conditions showed that An.J was found to be in a general condition of lethargy, thirst (2), sunken eyes (2), dry mouth (2), breathing <30x/minute (1), less elastic skin turgor (2) pulse <120x/minute (1). with a total score of 10 which means moderate dehydration. The data obtained by the author served as the basis for developing a nursing diagnosis in both cases. Therefore, the author developed a nursing diagnosis of hypovolemia associated with increased capillary permeability.

In the case of An.A and An.J, the author carried out a nursing action plan for 3x24 hours. The author planned to prevent hypovolemia problems with the expected goal of improving fluid status with the following outcome criteria: increased pulse strength, moist mucous membranes, improved pulse rate, improved fluid intake, improved skin turgor, and improved body temperature. the author implemented and evaluated the patient's condition for three days, starting from March 8, 2025, to March 11, 2025. The author implemented procedures in accordance with the Indonesian Nursing Intervention Standards (SIKI) book, accompanied by three Evidence-Based Nursing interventions: Oral Isotonic (Nainggolan et al., 2018). Fluid Management (Seneviratne et al., 2018). Fluid requirement (Madanayake et al., 2021) to support the patient's fluid needs and reduce the degree of dehydration. The final evaluation revealed that patient A still appeared weak, but her skin turgor had improved, with a total dehydration score of 8, indicating a decrease. The final evaluation of patient J also showed a decrease in her dehydration score, reaching 8. In both patients, the SOAP evaluation resulted in a SLKI analysis of fluid status level 3 (moderate).

DISCUSSION

Nursing planning carried out on clients 1 and 2 with nursing problems of Hypovolemia related to increased capillary permeability is prepared based on the Indonesian Nursing Intervention Standards (SIKI). based on the Indonesian Nursing Outcome Standards (SLKI), namely: improved fluid status, moist mucous membranes, improved fluid intake, improved skin turgor.The implementation of nursing actions was carried out in the Mina Room of RSHD Bengkulu City. In patients 1 and 2, implementation was carried out from March 8-10, 2025. Based on the plan that had been prepared, the researcher carried out appropriate nursing actions to address nursing problems in the form of hypovolemia related to increased capillary permeability. Implementation in patients 1 and 2 was carried out according to what had been prepared and selected according to the patient's condition. The intervention given was hypovolemia management.

For client I, on the first to third day, the following nursing actions were

performed: checking for signs and symptoms of hypovolemia, asking about fluid intake and output from the morning, encouraging plenty of oral fluid intake, collaborating on administering isotonic IV fluids (NaCl), adjusting the child's IV pump drip rate as recommended (125 pts/hour), and implementing EBN (Educating Fluid Management) by teaching family members caring for An.A and teaching fluid requirements to An.A's family members. According to (Nainggolan et al., 2018) The group receiving isotonic solution (OIS) as fluid replacement in dengue fever patients experienced less nausea and vomiting, had a positive fluid balance and higher MAP, and became afebrile more quickly compared to the control group (plain water. For client II, on the first to third day, the following nursing actions were performed: checking for signs and symptoms of hypovolemia, asking about fluid intake and output from the morning, encouraging plenty of oral fluid intake, collaborating on administering isotonic IV fluids (NaCl), adjusting the child's IV pump drip rate as recommended (160 pts/hour), and implementing EBN (Educating Fluid Management) by teaching family members caring for An.J and teaching fluid requirements to An.J's family members. In both patients, the SOAP evaluation resulted in a SLKI analysis of fluid status level 3 (moderate).

CONCLUSION

The nursing assessment conducted on Client I and Client II was in accordance with existing theory. The data obtained were consistent with existing theoretical studies, so the data can be used as material for determining actions in the next stage. The nursing diagnoses that emerged in both patients were in accordance with the theory adopted for Client I and Client II. Based on this case study, the nursing diagnosis was Hypovolemia related to increased capillary permeability. The nursing interventions used were primary hypovolemia management interventions, carried out independently and collaboratively, and supported by the provision of three evidence-based nursing interventions: Oral Isotonic (Nainggolan et al., 2018). Fluid Management (Seneviratne et al., 2018). Fluid requirement (Madanayake et al., 2021) Implementation was carried out for three consecutive days and obtained an evaluation of An.A, with an improved fluid status, with an SLKI at level 3 (moderate). Meanwhile, An.J also experienced an improvement in fluid status, with an SLKI also at level 3 (moderate).

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