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"A STUDY TO ASSESS PATIENT WITH DENGUE FEVER IN A VIEW TO DEVELOP NURSING CARE PROTOCOL"

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ABSTRACT

Introduction: The dengue virus, which is common in tropical and subtropical regions and spread by mosquitoes, is the primary cause of dengue fever. It frequently exhibits symptoms, and when it does, they typically appear 3–14 days following infection. Among these potential symptoms are a rising fever, a headache, feeling nauseated, joint and muscle pain, and the typical rash and skin irritation. Typically, recovery takes two to seven days.

Aims of the Study: to assess patient with dengue fever in a view to develop nursing care protocol**.**

Methodology: This qualitative study used a descriptive observational design to collect data from dengue fever patients at a hospital in Pune City. The target population consisted of admitted dengue patients, with a sample size of 10 selected through non-probability purposive sampling. Data was gathered using the Dengue Fever Patient Initial Assessment & Observation Tool, which tracks clinical symptoms, pre-existing conditions, medications, vital signs, and laboratory results like complete blood count and platelet count.

Results: This nursing care protocol for dengue fever emphasizes continuous monitoring, hydration, symptom management, psychological support, and patient education to prevent complications and improve outcomes. The study highlights effective nursing care and communication but notes areas needing improvement, such as hygiene and staff availability. Patient feedback underscores the importance of addressing both clinical needs and overall hospital experience to enhance care quality during dengue treatment.

Conclusion: Continuous monitoring and hydration are key in dengue care. While nursing support was effective, improvements in hygiene and staffing are needed. A well-rounded care protocol should address both clinical needs and patient experience.

Keywords: assess, patient, dengue fever, develop, nursing care protocol.

INTRODUCTION

The dengue virus, which is common in tropical and subtropical regions and spread by mosquitoes, is the primary cause of dengue fever. It frequently exhibits symptoms, and when it does, they typically appear 3–14 days following infection. Among these potential symptoms are a rising fever, a headache, feeling nauseated, joint and muscle pain, and the typical rash and skin irritation. Typically, recovery takes two to seven days.[1]

The dengue virus has four recognised serotypes, and contracting one usually results in temporary immunity to the other types but permanent immunity to that type.[2] Dengue fever, which affects more than 100 million people yearly, is the virus that spreads the quickest through

mosquitoes in the globe. Furthermore, this illness is prevalent in over 100 countries and kills 20 to 25,000 people, primarily children. Epidemics occur in the Americas, Asia, Africa, and Australia each year.[3]

There is no particular treatment for dengue fever, hence it is treated symptomatically. Pain management is the main goal of treatment in mild instances. Hospitalization is necessary for extremely serious dengue cases; supportive care for acute hepatitis involves parenteral or oral fluid administration.[4]

Dengue fever results from one of four dengue viruses. A mosquito that has been infected with the dengue virus can bite you, allowing the virus to enter your bloodstream and replicate. You may feel ill from the virus itself and your immune system's reaction. The virus can harm components of your blood that create clots and provide organization to your blood vessels. Certain chemicals your immune system produces including this one can cause bleeding within yourself by causing your blood to flow from your vessels. This causes the potentially fatal signs associated with severe dengue.[5]

NEED OF THE STUDY

According to WHO estimates, the number of dengue cases worldwide has increased significantly in the past several decades, from 505,430 in 2000 to 5.2 million in 2019. The actual number of occurrences of dengue is not reported properly because the majority of diseases are mild or undiagnosed and are treated on their own. Additionally, many cases are mistakenly classified as other feverish illnesses. Affecting more than 80 nations in all WHO areas, the most dengue infections were reported in 2023. Ongoing distribution since the start of 2023 together with an unanticipated rise in dengue infections had caused a historic high of over 6.5 million situations along with more than 7300 dengue-related fatalities recorded.[6]

In India, dengue fever is a persistent issue, particularly during the monsoon season when mosquito breeding grounds increase due to stagnant water. In the first five months of 2024, Maharashtra reported 1,755 dengue-positive cases, highlighting the widespread nature of the disease. Other states, such as Tamil Nadu, Kerala, and Delhi, have also reported significant numbers of dengue cases. Because of their crowded populations and poor sanitation, urban areas are particularly susceptible to breakouts.[7]

Maharashtra, including cities like Pune, faces considerable challenges with dengue outbreaks. In May 2024, the state reported 1,755 dengue-positive cases, with both urban and rural areas affected. Experts point to factors such as migration, poor sanitation, and the high density of urban populations as contributors to the spread of the disease. The monsoon season, in particular, exacerbates the situation by providing favourable conditions for mosquito breeding.[8]

Pune, a major city in Maharashtra, has experienced notable dengue activity in recent years. Between 2017 and 2019, 44.4% of the 6,786 suspected cases were confirmed as dengue through serological testing. The disease has affected both urban and suburban populations, with males being more frequently impacted. In 2024, early rains led to a sharp increase in cases, and by July-August, nearly 90% of the 94 confirmed cases had been reported. This highlights the critical need for stronger vector control measures and public awareness campaigns, especially during the monsoon season when mosquito breeding is at its peak.[9]

This study is crucial to understanding the trends, challenges, and impact of dengue in Maharashtra and other high-risk areas, aiming to develop effective intervention strategies to curb the spread of the disease and mitigate its effects on public health.

AIM OF THE STUDY

The aim of the study is to assess patient with dengue fever in selected hospitals of Pune city and to develop nursing care protocol for the patient with dengue fever.

Objectives:

1. To observe the patient with dengue fever
2. To develop and validate nursing care protocol for patient with dengue fever

MATERIALS AND METHODS

This study uses a qualitative research approach with a descriptive observational design to assess nursing interventions for dengue fever patients. Data was collected from a hospital in Pune City using non-probability purposive sampling of 10 dengue patients. Demographic data and a patient assessment tool were used, along with semi-structured interviews to capture patient experiences and care effectiveness. Experts validated the tool, and reliability was ensured using the Test-Retest method. Ethical approval and informed consent were obtained, ensuring confidentiality. Data will be analyzed using thematic coding and statistical methods, with results presented in graphs and tables. This study aims to improve nursing care protocols for dengue management.

RESULTS

SECTION 1: TO OBSERVE THE PATIENT WITH DENGUE FEVER.

Interpretation of Dengue Fever Patient's Assessment:

The patient, with a history of travel to a dengue-endemic area and exposure to mosquito bites, presents with classic dengue symptoms including high fever, skin rash, severe headache, retro-orbital pain, and muscle aches. Vital signs show fluctuating temperature (104°F to 100°F), elevated blood pressure, and low oxygen saturation (88-90%), indicating critical conditions. The patient has mild anemia (haemoglobin 9.3 g/dl) and low white blood cell count, suggesting immune suppression. Platelet count is normal (291,000/mm^3), but monitoring is required due to potential drops. The haematocrit of 27.7% points to dehydration and plasma leakage. Liver function tests show elevated AST and ALT levels, indicating liver involvement. Hydration is insufficient, with low oral intake (2.5–4 ml/hr) and urine output (0.4 ml/hr), signalling potential dehydration or shock.

In conclusion, the patient's critical condition, fluctuating vital signs, and signs of dehydration and liver involvement require urgent monitoring and intervention to prevent complications.

Patient Experience and Care Insights for Dengue Fever: A Nursing Care Assessment

The patient initially thought the fever and body aches would resolve on their own but sought treatment after her son's visit to the clinic. During her hospital stay, she received positive care from nurses who helped with basic needs, such as brushing teeth and providing food. However, issues like bathroom cleanliness and staff shortages affected her experience. The healthcare team informed her about the illness and treatment plan, which helped alleviate her initial anxiety. She felt scared initially due to the high fever but became less worried as her condition improved. Despite friends visiting, she had to manage household expenses and hospital bills independently, with no significant emotional or financial support. Suggestions for

improvement included increasing nursing staff and maintaining better hygiene in shared spaces.

SECTION II: TO DEVELOP AND VALIDATE NURSING CARE PROTOCOL FOR PATIENT WITH DENGUE FEVER.

Nursing Care Protocol for Dengue Fever Patients

1. **Purpose:**
   Develop a nursing protocol for dengue fever patients, ensuring comprehensive care, monitoring, and education to improve outcomes and minimize complications.
2. **Initial Assessment and Diagnosis:**
   Gather clinical and demographic information including recent travel to endemic areas, exposure to mosquitoes, fever duration, and any co-morbid conditions. Perform physical exams and laboratory tests (CBC, platelet count, LFT, NS1, IgM/IgG) to confirm diagnosis and assess severity.
3. **Monitoring and Vital Sign Management:**
   Monitor vital signs (temperature, pulse, BP, respiratory rate, oxygen saturation) every 4 hours. Ensure hydration through oral intake (2,500-4,000 mL/day) and IV fluids (1,000-1,500 mL/hr). Monitor urine output (≥0.5 mL/kg/hr). Adjust interventions based on findings.
4. **Symptom Management and Treatment:**
   Manage fever with antipyretics (acetaminophen) and tepid sponging. Provide pain relief for joint, muscle pain, and headaches. Monitor bleeding risks closely and notify the healthcare team if severe bleeding occurs.
5. **Psychological and Emotional Support:**
   Educate the patient about dengue, treatment plans, and hospital stay. Offer emotional support to reduce anxiety and provide reassurance. Encourage family involvement for emotional support.
6. **Infection Control and Hygiene:**
   Ensure cleanliness of patient's room and hygiene practices (handwashing, personal care). Maintain adequate nursing staff and ensure proper mosquito control measures, including fogging of the care area.
7. **Discharge Planning:**
   Provide post-discharge care instructions, including hydration, follow-up appointments, and avoiding mosquito exposure. Educate on recognizing severe dengue symptoms and remove mosquito breeding sites at home.
8. **Nursing Research and Continuous Improvement:**
   Collect patient feedback on care experiences and conduct ongoing research to improve hydration strategies, psychological support, and treatment adherence. Continuously refine the protocol based on findings.

DISCUSSION

The study aligns with previous research, such as Charuai Suwanbamrung's community-based approach in Southern Thailand, which developed a dengue patient care guideline (DPCG) involving home visits, primary care centers, and district hospitals. The DPCG trained healthcare workers to manage dengue effectively, improving knowledge, attitudes, and practices (KAP) in all participants.

In the current study, the patient was in the acute phase of dengue, presenting with high fever, low platelet count, elevated liver enzymes, and dehydration. Continuous monitoring of vital signs and IV fluid administration is essential to prevent complications. The patient initially believed the fever would resolve on its own but sought treatment at the clinic. While receiving satisfactory nursing care, she reported issues with bathroom cleanliness and staff shortages. The healthcare team effectively communicated the illness and treatment plan, reducing anxiety, but the patient managed expenses independently, suggesting improvements in nursing staff and hygiene.

CONCLUSION

This study assesses a patient with dengue fever, highlighting the critical need for continuous monitoring, especially regarding vital signs and hydration, to prevent complications like shock or organ failure. The patient's hospital experience revealed both positive aspects, such as effective communication and nursing care, and areas for improvement, including bathroom cleanliness and staff shortages. Despite receiving satisfactory care, the patient managed expenses independently and suggested improvements in nursing staff and hygiene. These findings provide valuable insights for developing a comprehensive nursing care protocol tailored to address both clinical and patient experience needs during dengue fever treatment

DECLARATION BY AUTHORS:

Ethical Approval: The study was approved by the institutional ethics committee of Bharati Vidyapeeth (Deemed to be University), Pune. The study participants were briefed about the purpose and nature of the study and written informed consent was obtained before data collection.

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Conflict of Interest: The authors declare no conflict of interest.

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