

NURSING CARE FOR CHILDREN WITH HYPERTHERMIA AND CONVULSIVE SYNDROME

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Abstract

Hyperthermia and convulsive syndrome are important clinical conditions in pediatric practice that require timely assessment and appropriate nursing intervention. This article examines the principles of nursing care for children experiencing elevated body temperature and convulsive episodes, with particular attention to patient safety, airway protection, monitoring of vital signs, temperature assessment, prevention of dehydration, and prevention of injuries during seizures.

Keywords: Hyperthermia, convulsive syndrome, febrile seizures, pediatric nursing, nursing care, child health, fever management, seizure management, airway protection, vital signs, dehydration prevention, pediatric emergency care.

Introduction

Hyperthermia and convulsive syndrome are important clinical conditions in pediatric nursing because a child with a high body temperature may deteriorate rapidly, particularly when convulsive activity is present. Nursing care should therefore focus on rapid assessment, protection of the airway, prevention of injury, continuous monitoring of vital signs, control of fever, identification of the underlying cause, timely administration of prescribed treatment, and accurate documentation. The World Health Organization (WHO) identifies severely altered central nervous system function, including convulsive seizures, as an emergency sign requiring rapid assessment and appropriate intervention.

MAIN PART

Hyperthermia in children is generally associated with an elevated body temperature resulting from infection or other causes. Fever itself is not a diagnosis but a clinical sign that requires assessment. According to the WHO *Pocket Book of Hospital Care for Children*, published in its second edition in 2013, children presenting with fever should be assessed carefully to distinguish potentially serious infections from mild, self-limiting illnesses. The duration of fever, associated symptoms, general condition, respiratory status, neurological signs, hydration status, and possible infectious sources should be considered during assessment.

Convulsive syndrome requires particular attention because seizures can interfere with breathing and consciousness. A febrile seizure is defined by the American Academy of Pediatrics (AAP) as a seizure associated with a temperature of at least 38°C in children aged approximately 6–60 months without evidence of central nervous system infection or another defined cause of seizure. Simple febrile seizures are generally generalized, last less than 15 minutes, and do not recur within 24 hours.





From a nursing perspective, the first priority during an active seizure is safety and airway protection. The child should be placed in a safe position on an appropriate surface, surrounding objects that could cause injury should be removed, and the child's breathing should be observed continuously. The nurse should not attempt to forcibly restrain the child's movements and should not place objects, fingers, food, water, or medicines into the child's mouth during the seizure. The duration of the seizure should be recorded accurately because prolonged seizures require urgent medical intervention.

The nurse should immediately assess the child's airway, breathing, and circulation. Respiratory rate, oxygen saturation, heart rate, skin colour, level of consciousness, and temperature should be monitored. If oxygen therapy is indicated according to the clinical condition and local protocol, it should be administered as prescribed. WHO's pediatric emergency guidance specifically addresses oxygen therapy and anticonvulsant treatment in children with severe illness and acute seizures.

A practical example is a 2-year-old child admitted with a temperature of 39.5°C who suddenly develops generalized tonic-clonic movements. The nurse should first ensure that the child is protected from injury, assess breathing and oxygen saturation, note the exact time at which the seizure begins, monitor the child's colour and responsiveness, and immediately inform the responsible physician or emergency team. After the seizure terminates, the child's temperature and neurological status should be reassessed and the possible cause of the fever investigated.

Accurate measurement of body temperature is another fundamental nursing responsibility. Temperature should be measured using an appropriate, calibrated device and according to the method accepted by the healthcare facility. The result, measurement time, method, and response to treatment should be documented. Repeated measurements allow the healthcare team to identify whether the temperature is increasing, decreasing, or remaining stable.

The nurse should also monitor the child's general condition, rather than concentrating only on the temperature value. A child with fever who is alert, drinking adequately, breathing normally, and interacting appropriately requires a different level of monitoring from a child who is lethargic, difficult to wake, breathing abnormally, dehydrated, or experiencing repeated seizures. WHO guidance emphasizes the importance of identifying serious illness among children presenting with fever.

Hydration assessment is particularly important in children with hyperthermia. Fever can increase fluid losses, while poor appetite, vomiting, diarrhea, or reduced fluid intake can further increase the risk of dehydration. The nurse should observe oral intake, urine output, mucous membranes, tears, skin condition, capillary refill, and general behaviour. Where clinically appropriate, oral fluids may be encouraged. If the child cannot maintain adequate oral intake or has signs of significant dehydration, fluid therapy should be provided according to the physician's prescription and institutional protocol.

For example, a 3-year-old child with a temperature of 39°C and diarrhea may refuse food and drink. In this situation, nursing care should include monitoring fluid intake and urine output, observing for signs of dehydration, measuring vital signs regularly, administering prescribed treatment, and reporting deterioration promptly. The nurse should not consider temperature reduction alone to be sufficient treatment because the underlying cause and hydration status also require attention.

Physical comfort measures may be used to help the child tolerate fever. Excessive clothing and heavy bedding should be avoided, and the child should be kept in a comfortable environment. Routine





aggressive cooling or extremely cold water should not be used as a substitute for appropriate clinical management. The objective is to prevent overheating and improve comfort while the underlying cause of the fever is assessed.

Antipyretic medication may be administered when prescribed and when clinically appropriate. Nurses must verify the child's age, weight, prescribed dose, medication concentration, route, timing of the previous dose, allergies, and relevant contraindications before administration. Accurate weight-based dosing is particularly important in pediatrics because medication errors can occur when adult dosing principles are applied to children.

An important clinical distinction is that antipyretics can improve comfort but do not reliably prevent febrile seizures. The AAP's 2008 clinical practice guideline concluded that antipyretics may improve comfort but do not prevent recurrence of simple febrile seizures. The guideline also concluded that continuous or intermittent anticonvulsant therapy should not routinely be used for children with simple febrile seizures because potential treatment-related harms can outweigh the relatively limited benefits.

The nurse should therefore avoid giving medications specifically to "stop" a seizure unless they are prescribed or included in an established emergency protocol. If a seizure becomes prolonged or recurrent, emergency anticonvulsant treatment may be required. WHO's 2016 pediatric emergency guideline includes recommendations concerning anticonvulsant medicines for children with acute seizures, including situations where intravenous access is unavailable.

The duration and characteristics of the seizure should be documented precisely. Important observations include the beginning and end time, generalized or focal movements, eye deviation, muscle rigidity, changes in breathing, skin colour, loss of consciousness, incontinence if present, recurrence, and the child's condition after the seizure. Such information can be extremely valuable for the physician when differentiating a simple febrile seizure from a complex seizure or another neurological condition.

CONCLUSION

In conclusion, nursing care for a child with hyperthermia and convulsive syndrome requires rapid assessment, continuous observation, prevention of injury, protection of the airway, appropriate management of fever, attention to hydration, identification of possible serious infection, safe administration of prescribed treatment, and effective communication with caregivers. The nurse should not focus solely on reducing the child's temperature. The central objective is to maintain the child's safety and physiological stability while supporting medical assessment of the underlying cause.

The evidence available from WHO and the AAP demonstrates that febrile seizures and fever should be assessed within the broader clinical context. A simple febrile seizure in an otherwise neurologically healthy child usually has a favourable prognosis, but prolonged, focal, recurrent, or clinically atypical seizures require further evaluation. Therefore, high-quality nursing care depends on early recognition of danger signs, systematic monitoring, accurate documentation, adherence to clinical protocols, and timely communication with the medical team.





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