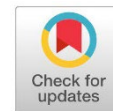


Research Article

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Nurses' Knowledge Regarding Pediatric Febrile Convulsions and its Nursing Care

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Abstract

Introduction: A seizure that happens in children who have a high body temperature is called a febrile convulsion. The most prevalent neurological condition in children, febrile convulsions are thought to be a major contributor to hypoxia and recurrent seizures. Consequently, nurses should possess comprehensive knowledge of managing febrile convulsions. Nurses' Knowledge Regarding Pediatric Febrile Convulsions & its Nursing Care. This descriptive study was conducted at Ahmed Nasr Allah Pediatric Hospital - Rufaa City in April 2023. The study population comprised 45 employed nurses in the hospital (census sample). Data was gathered through structured interview questionnaires, and the data was inputted and analyzed with the Statistical Package for Social Sciences (SPSS). Simple statistics such as mean and percentage were employed. Results indicated that the mean score for nurses' knowledge of pediatric febrile convulsions was poor (36.9%). The overall mean score for nurses' knowledge of nursing care for pediatric patients with febrile convulsions was good (61.5%). Nurses' knowledge was poor regarding pediatric febrile convulsion as a medical condition but good regarding the nursing care of patients with pediatric febrile convulsions.

Keywords: Febrile convulsion, Pediatric, Nurses' knowledge, Nursing care.

INTRODUCTION

Every ethnic group has febrile seizures. (Kim et al., 2017) Children from lower socioeconomic backgrounds are more likely to have the disorder, most likely due to limited access to healthcare. (Haerian et al., 2016) Febrile seizures are generally defined as seizures that occur in children, usually between the ages of 6 months and 5 years, coupled with a fever that is higher than 38°C (100.4 °F), and that do not have a history of an intracranial cause (such as infection, head trauma, or epilepsy), or another identifiable cause (such as electrolyte imbalance, hypoglycemia, drug use, or drug withdrawal). (Zare-shahabadi et al., 2015) Due to its high frequency in young children and propensity to recur, febrile seizures pose a significant issue in pediatric medicine. Usually, the convulsion only lasts for a few minutes. (Sharafi et al., 2017) Antipyretics like ibuprofen should be used to treat febrile convulsions (Zare-shahabadi et al., 2015). Rectal diazepam is used to stop the convulsion if it lasts longer than ten minutes. If the focus of the infection is unclear, it's crucial to conduct investigations to rule out dangerous illnesses. Future episodes of febrile convulsions affect about one-third of youngsters. As a result, parents need to learn how to control convulsions in the future. The outlook is favorable. While children



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who experience simple febrile convulsions are not more likely to develop epilepsy, they may be more susceptible to temporal lobe epilepsy if the convulsions last for more than 20 minutes. Overall, 2-3% of people are at risk for epilepsy (Jang & Cho, 2017).

In recent years, there has been a growing understanding of the possible complications associated with febrile seizures and how to manage this condition. The American Academy of Pediatrics (AAP) and the Japanese Society of Child Neurology released updated guidelines for the assessment and treatment of febrile seizures in 2011 and 2015, respectively (Canpolat et al., 2018). The nurse is typically the initial caregiver for the child and should be well-versed in applying universal precautions. After resuscitation and stabilization, emergency interventions are implemented, including therapeutic measures such as decontamination, antidote administration, and supportive care to address the needs of children experiencing febrile convulsions (Ali Hussein & Hatab, 2023). Nurses should update their knowledge regarding the care of children with febrile convulsions.

MATERIALS AND METHODS

Study Design

This descriptive hospital-based study was conducted to assess nurses' knowledge regarding the nursing care of pediatric patients with febrile convulsions.

Study Area

The study was conducted in Ahmed Nasr Allah Pediatric Hospital in Rufaa City, the capital of the East of Gezira locality, located northeast of Gezira state, Sudan.

Study subjects and sampling

All Nurses provided nursing care in the hospital and were available in April 2023, 45 nurses were obtained (census sample).

Data

Data were collected using a self-administered questionnaire designed by the researchers and analyzed using the Statistical Package for Social Science (SPSS). Simple statistics such as mean and percentage were employed.

Ethical Consideration

Permissions were obtained from the Scientific Committee of Research, Faculty of Applied Medical Sciences, University of Al-Butana, the manager of Rufaa Teaching Hospital, and the head of the pediatric department. The study's purpose was explained verbally to the participants before the questionnaire administration, and they all agreed to participate.

RESULTS

Table (1). Distribution of Nurses According to the Demographical Information

Information	Percentage (%)	Information	Percentage (%)
Sex		Years of experience	
Male	46.7	Less than 5 years	23.3
Female	53.3	5 -10 years	56.7
		11 and above	20
Age		Level of education	
20 -29	53.3		30
30 -39	26.7	Institutes	33.3
40 and above	20.0	Bachelor	36.7

Table (2). Assessment of the nurses' knowledge regarding pediatric febrile convulsion

Items	Poor (%)	Acceptable (%)	Good (%)
Definition of fever	27	43	30
The Signs of febrile convulsions	13	30	57
Incidence of pediatrics febrile convulsions	30	30	40
Period of fit	33	44	33
The risk factors	43	20	37
The causes	63	4	33
Classifications of pediatric febrile convulsions	53	14	33
The Complications	54	23	23
Use of antipyretic medications	30	50	20
Prevention of convulsions	23	4	73
Overall mean	36.9	26.2	37.9
Total		100	

Overall, the average score of nurses' knowledge about pediatric febrile convulsions was low (36.9%).

Table (3). Assessment of the nurses' knowledge regarding nursing care of pediatric patients with febrile convulsion

Items	Poor (%)	Acceptable (%)	Good (%)
Nursing role during the febrile convulsions.	40	17	43
Nursing procedures during fits	50	7	43
Priorities of treatment	7	10	83
Health education for parents	10	13	77
Overall mean	26.75	11.75	61.5

The overall mean of the knowledge level of nurses concerning nursing care for pediatric patients experiencing febrile convulsions was satisfactory, with a score of 61.5%.

DISCUSSION

The study revealed that the majority of nurses (n=45) were under 30 years old, with an average age of 53.3% (20–29) years, according to the percentage distribution of participants by age group obtained from the analysis of demographic data. According to a study done at the Al-Diwaniyah Hospital for Maternal and Children in Iraq, the majority of nurses were young people. These current findings are consistent with that study.

In keeping with a study done in Alexandria, Egypt in 2022, which found that the largest percentage of participants (n=24, 33.8%) had a diploma in nursing and nursing institute members (Ali Hussein & Hatab, 2023), this study found that institute nurses and diploma nurses were 30% and 33.3%, respectively.

Overall, nurses' knowledge of pediatric febrile convulsions had a low mean score (36.9%). This is because most of the study sample had a high level of education, with (63.3%) consisting of institute nurses and diploma nurses. A study by Faransa et al. stated that many of the participating nurses, due to their educational qualifications, may not have adequate knowledge about febrile convulsions (Ali et al., 2016).

The overall mean of knowledge about nursing care for pediatric patients experiencing febrile convulsions was good (61.5 %). This is related to the majority of the study participants' experience of more than five years and the nurses were knowledgeable about the principles of evidence-based fever management (Edwards et al., 2007).

A study revealed that (77%) of participants had good knowledge related to parents' education about pediatric febrile convulsions, and if medical staff lacked adequate knowledge on the topic, they were incapable of instructing families on fever management (Baran, 2018). Therefore, nurses should have sufficient knowledge of pediatric febrile convulsions.

CONCLUSION

The study concluded that while nurses are relatively well-prepared to provide appropriate care for pediatric patients with febrile convulsions, they lack sufficient knowledge about the underlying medical aspects of the condition. This highlights the need for an education program to improve their overall understanding.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Duality of interest: Yes, there is a conflict of interest in this manuscript.

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REFERENCES

- Ali, F., Ahmed, A., & Khalaf, S. (2016, 08/29). Impact of educational program about care of children with febrile convulsion on nurses' knowledge and performance. *Journal of Nursing Education and Practice*, 7. <https://doi.org/10.5430/jnep.v7n1p79>
- Ali Hussein, Z., & Hatab, K. (2023, 02/01). Effectiveness of Intervention Program on Nurses' Practices about Care of Children during Febrile Convulsion. 11.
- Baran, G. (2018). Investigation of the Effect of the Training on Fever and Febrile Convulsion Management Given to Pediatric Nurses on their Knowledge Level.
- Canpolat, M., Per, H., Gumus, H., Elmali, F., & Kumandas, S. (2018). Investigating the prevalence of febrile convulsion in Kayseri, Turkey: An assessment of the risk factors for recurrence of febrile convulsion and for development of epilepsy. *Seizure*, 55, 36-47.
- Edwards, H., Walsh, A., Courtney, M., Monaghan, S., Wilson, J., & Young, J. (2007). Improving paediatric nurses' knowledge and attitudes in childhood fever management. *Journal of advanced nursing*, 57(3), 257-269.
- Haerian, B. S., Baum, L., Kwan, P., Cherny, S. S., Shin, J.-G., Kim, S. E., Han, B.-G., Tan, H. J., Raymond, A. A., & Tan, C. T. (2016). Contribution of GABRG2 polymorphisms to risk of

epilepsy and febrile seizure: a multicenter cohort study and meta-analysis. *Molecular neurobiology*, 53(8), 5457-5467.

Jang, S.-S., & Cho, I.-S. (2017). Effect of the fever education program on pediatric nurses' expert knowledge, attitudes and nursing practice. *Journal of the Korean Society of Maternal and Child Health*, 149-158.

Kim, K., Kwak, B. O., Kwon, A., Ha, J., Kim, S.-J., Bae, S. W., Son, J. S., Kim, S.-N., & Lee, R. (2017). Analysis of plasma multiplex cytokines and increased level of IL-10 and IL-1Ra cytokines in febrile seizures. *Journal of neuroinflammation*, 14, 1-7.

Sharafi, R., Rad, A. H., & Aminzadeh, V. (2017). Circadian rhythm and the seasonal variation in childhood febrile seizure. *Iranian journal of child neurology*, 11(3), 27.

Zare-shahabadi, A., Soltani, S., Ashrafi, M. R., Shahrokhi, A., Zoghi, S., Pourakbari, B., Zamani, G. R., Mohammadi, M., & Rezaei, N. (2015). Association of IL4 single-nucleotide polymorphisms with febrile seizures. *Journal of child neurology*, 30(4), 423-428.