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Evaluating the Impact of an Information Booklet on Mothers' Knowledge of Febrile Seizure Prevention in Under-Five Children: A Study in Rural Kerala

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Abstract

Introduction: Febrile seizures, or fever fits, are seizures associated with high body temperature in children aged 5 months to 5 years, without serious underlying health issues. This study aimed to evaluate the effectiveness of an information booklet in improving maternal knowledge about preventing febrile seizures among mothers of under-five children in selected rural areas. Objectives included assessing baseline knowledge, evaluating the booklet's impact, and exploring associations between knowledge and demographic variables.

Methodology: An experimental one-group pre and post-test design was employed. Forty mothers of under-five children were selected via convenience sampling. Data collection involved a structured knowledge questionnaire administered before and seven days after distributing the information booklet. Descriptive and inferential statistics were used for analysis.

Results: The study revealed a significant improvement in maternal knowledge about febrile seizure prevention after the intervention. Pre-test results showed 75% of mothers had average knowledge, while post-test results indicated 97.5% achieved good knowledge. The mean knowledge score increased from 7.86 to 16.62, with a paired t-value of 7.56 ($p < 0.05$), confirming the effectiveness of the information booklet.

Conclusion: The findings emphasize the importance of educating mothers about febrile seizure prevention, particularly in rural areas, to bridge knowledge gaps and enhance child health outcomes.

Keywords: Febrile Seizure, Convulsion, Under-Five, Children

Introduction

Febrile seizures, also referred to as fever fits or febrile convulsions, are seizures that occur in children aged 5 months to 5 years and are associated with a high body temperature without any serious underlying health condition. A child experiencing a febrile seizure may exhibit a fever higher than 100.4°F, loss of consciousness, and jerking or shaking movements in the

arms and legs. According to the International League Against Epilepsy (ILAE), a febrile seizure is defined as "an epileptic seizure occurring in childhood associated with fever, but without evidence of intracranial infection or a defined cause." This definition excludes cases where children with prior non-febrile seizures experience seizures with fever.

Febrile seizures are categorized into two main types:

1. Simple Febrile Seizures: These are brief, generalized seizures that last less than 15 minutes within 24 hours and occur in previously healthy children aged 6 months to 5 years. Simple febrile seizures account for approximately 80% of cases and are primarily managed by controlling the fever.
2. Complex Febrile Seizures: These seizures involve partial onset, last more than 15 minutes, or occur multiple times within 24 hours.

The precise cause of febrile seizures remains uncertain but is believed to involve genetic predisposition, environmental factors, brain immaturity, and inflammatory mediators. Febrile seizures are often triggered by fever due to viral infections and may run in families. Diagnosing febrile seizures involves excluding brain infections, metabolic issues, and prior non-febrile seizures.

Globally, febrile seizures affect 2–10% of children, with a slightly higher incidence in boys than girls. After an initial febrile seizure, approximately 35% of children are at risk of recurrence during childhood. While outcomes are generally favorable, there is tentative evidence suggesting a slightly increased risk of epilepsy in affected children.

The prevalence of febrile seizures varies geographically. Between 2% and 4% of children in Europe and the United States experience at least one febrile seizure before the age of 5 years, compared to 5–10% in India and as high as 14% in Guam. In India, studies report incidence rates ranging from 2.27 per 1,000 population in the north to 5.71 per 1,000 population in the south.

Although febrile seizures are not considered a form of epilepsy, they can be the first presentation of subsequent epilepsy in some cases. Early education and awareness among caregivers, particularly mothers, are essential to prevent and manage febrile seizures effectively, minimizing distress and ensuring better outcomes for affected children.

Febrile seizures, affecting 3% of children, often occur between 18-22 months and may recur in one-third of cases. While not a form of epilepsy, they can signal its onset. Mothers, as primary caregivers, often lack knowledge about the condition, leading to panic and ineffective management. Addressing this knowledge gap is crucial to empowering mothers and improving outcomes for children and families.

The study aims to assess the effectiveness of an information booklet in improving the knowledge of mothers of under-five children regarding the prevention of febrile seizures in selected rural areas of Thiruvalla. The objectives include evaluating the existing knowledge of mothers about febrile seizure prevention, determining the impact of the information booklet on enhancing their understanding. This comprehensive approach seeks to empower mothers with the necessary information to better manage and prevent febrile seizures in young children.

Materials and Methodology

This study was conducted in selected rural areas of Thiruvalla, providing the setting for data collection. The target population comprised mothers of under-five children residing in these areas. A sample of 40 mothers was selected using a convenient sampling technique, a type of non-probability sampling. The inclusion criteria

encompassed mothers of under-five children who were available during data collection and consented to participate, while those who were not primary caregivers were excluded.

The tools for data collection included a baseline performa and a structured knowledge questionnaire on febrile seizures. The baseline performa gathered demographic and personal variables, while the questionnaire consisted of 26 items to assess mothers' knowledge about febrile seizure prevention. Each correct response earned one mark, with knowledge categorized as poor (1–9), average (10–18), or good (19–26). The tools were developed based on a review of literature and expert input, and their content validity was established by a panel of seven experts from pediatric and community health nursing. Suggestions from the experts were incorporated, ensuring clarity, relevance, and appropriateness. Reliability was tested on 10 mothers using a paired t-test, yielding a reliability coefficient of r = 0.79, confirming the tool's statistical reliability.

A pilot study was conducted, involving 10 mothers from the study area to refine the methodology. Ethical clearance was obtained from the Pushpagiri Institute of Medical Science and Research Center, Thiruvalla. Participants were informed about the study, and their consent was secured. The pilot study confirmed the feasibility and practicality of the study design.

The main data collection took place on January 28, 2020, following permission from the Kuttoor Gram Panchayat. Participants were briefed on the study's purpose, and informed consent was obtained. A pretest was conducted using the structured knowledge questionnaire, followed by the distribution of an information booklet on febrile seizures. A post-test using the same questionnaire was conducted on the seventh day to evaluate the effectiveness of the information booklet.

Data analysis was carried out using descriptive and inferential statistics. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the data. Paired t-tests were employed to assess the effectiveness of the information booklet, while the chi-square test analyzed associations between baseline variables and pretest knowledge scores. The findings were presented in tabular format to provide a clear interpretation of the results.

Results

The data collected for this study were analyzed manually using IBM SPSS software version 22. The findings were categorized into three main sections: demographic variables of the mothers, knowledge of mothers regarding the prevention of febrile seizures, and the association between knowledge and selected demographic variables.

Table 1, shows the demographic characteristics of the mothers in the study revealing several key trends. Most mothers (45%) were between the ages of 25 and 30 years, followed by 42.5% who were over 30 years old. A smaller proportion (12.5%) was in the 21-24 age group. Regarding their children, the majority (57.5%) were in the 6 months to 1-year age group, while 20% were between 3 and 4 years old, and 12.5% were in the 4-5 years age group.

75% of the mothers identified as Hindus. 37.5% of the mothers were graduates, with others holding different educational qualifications. A large percentage of the mothers (72.5%) were housewives, and 7.5% each were private or government employees. Additionally, 12.5% had other occupations.

67.5% of the mothers earned less than 5000 INR per month. Family type was fairly balanced, with an equal distribution between nuclear and joint families. Health information was primarily received from health

professionals (67.5%), while 32.5% relied on other sources.

Table 1: Demographic Variables of Mothers of Under-Five Children (n=40)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age of the mother	18-20	0	0%
	21-24	5	12.50%
	25-30	18	45%
	>30	17	42.50%
Age of the Child	6 months - 1 year	23	57.50%
	2-3 years	4	10%
	3-4 years	8	20%
	4-5 years	5	12.50%
Religion	Hindu	30	75%
	Other	10	25%
Education	Primary	12	30%
	High School	13	32.50%
	Graduate	15	37.50%
Occupation of Mother	Housewife	29	72.50%
	Private Employee	3	7.50%
	Government Employee	3	7.50%
	Others	5	12.50%
Income	<5000	27	67.50%
	5000-10000	5	12.50%
	>10000	8	20%
Type of Family	Nuclear	20	50%
	Joint	20	50%
Source of Health Information	Family/Peers	27	67.50%
	Health Professionals	4	10%
	Media	4	10%
	Other	5	12.50%

Table 2 represents the distribution of level of knowledge regarding the management and prevention of febrile seizure among mothers with children aged under five during pre and post-test. The improvement in knowledge levels of mothers regarding the prevention of febrile seizures after the intervention. In the pre-test, 75% had average knowledge, and only 17.5% had good knowledge. Post-test results show a significant improvement, with 97.5% achieving good knowledge. The obtained paired "t" value was 7.56, and it was

significant at p-value < 0.01 level and also inferred that the information booklet is effective in the prevention of febrile seizure among mothers.

Table 2: Knowledge of Mothers of Under-Five Regarding Prevention of Febrile Seizure (n = 40)

Knowledge Level	Pre-test		Post-test		t-test	p value
	(n)	(%)	(n)	(%)		
Poor	3	7.50%	0	0%	7.56	< 0.01*
Average	30	75%	1	2.50%		
Good	7	17.50%	39	97.50%		

*p value ≤ 0.05 considered as significant

Discussion

The present study assessed the level of knowledge of mothers of under-five children regarding prevention of febrile seizure in the selected rural areas of Kerala. The first objective of the present study was to assess the knowledge regarding the prevention of febrile seizures among mothers of under-five children. The pre-test findings indicated that 7.5% of mothers had poor knowledge, 75% had average knowledge, and only 17.5% demonstrated good knowledge regarding febrile seizure prevention. These findings are consistent with a study by RC Parmar (2001), which highlighted that 59.3% of parents could not recognize convulsions, and 90.7% did not carry out any intervention during febrile episodes, underscoring the gaps in parental knowledge and practices.

The post-test results showed significant improvement following the booklet information, with 97.5% of mothers demonstrating good knowledge. This aligns with Sajadimahbobeh (2017) (2013) findings, which demonstrated the effectiveness of structured teaching programs in improving maternal knowledge on febrile seizure management.

Several studies have also highlighted the importance of understanding febrile seizure recurrence and its prevention. For instance, Sajanchung (2014) reported that complex febrile seizures were noted in approximately 35% of cases, and 30–40% of children experienced recurrent episodes. Factors such as young age at onset, low-grade fever, and a positive family history were identified as strong predictors of recurrence in Anne T. Berg's (1997) study. Our findings reinforce the need for targeted interventions to address these risk factors and educate mothers about early preventive measures.

Recommendations

- The study can be conducted with a larger sample for better generalization.
- The study can be conducted in rural and urban areas to compare the knowledge regarding the management and prevention of febrile seizures.

Conclusion

The study assessed maternal knowledge on the prevention of febrile seizures among under-five children and evaluated the effectiveness of video-assisted teaching. Results showed a significant improvement in knowledge post-intervention, with 97.5% achieving good knowledge levels. Education was the only demographic variable significantly associated with knowledge. Despite limitations like a small sample size and non-probability sampling, the findings highlight the importance of targeted educational interventions in preventing febrile seizures and underscore the role of nursing in community health education and research.

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