

“A PRE EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE REGARDING FEBRILE CONVULSION AMONG PARENTS FROM SELECTED AREAS OF PUNE CITY”

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ABSTRACT

Introduction: A febrile seizure, also known as a fever fit or febrile convulsion, is a seizure associated with a high body temperature but without any serious underlying health issue. They most commonly occur in children between the ages of 6 months and 5 years. Most seizures are less than five minutes in duration, and the child is completely back to normal within an hour of the event. There are two types: simple febrile seizures and complex febrile seizures. Simple febrile seizures involve an otherwise healthy child who has at most one tonic-clonic seizure lasting less than 15 minutes in a 24-hour period. Complex febrile seizures have focal symptoms, last longer than 15 minutes, or occur more than once within 24 hours.

Aims of the Study: The study aims to evaluate the effectiveness of an information booklet in enhancing parents' knowledge regarding febrile convulsion in selected areas of Pune city by comparing pre- and post-test knowledge scores.

Methodology: The researcher used a quantitative research approach for this study and employed a pre-experimental one-group pre-test post-test research design. The study was conducted in selected urban areas of Pune city, targeting parents of under-five children. A total of 60 participants were included in the sample, and they were selected using a non-probability purposive sampling technique.

Results: The study on 60 parents of under-five children in Pune city. Pre-test results showed that the majority of parents had poor knowledge regarding febrile convulsion, with a mean score of 7.32. Post-test findings revealed significant improvement, with most parents achieving good knowledge and a mean score of 16.85. A paired t-test indicated a statistically significant increase in knowledge after the intervention ($t = 21.45$, $p = 0.00001$) the null hypothesis is rejected. Hence, the alternative hypothesis is accepted, indicating the information booklet was effective in enhancing parents' knowledge on febrile convulsion. Chi-square analysis showed no significant association between knowledge levels and selected demographic variables, confirming that the information booklet effectively improved knowledge regardless of background factors.

Conclusion: The study revealed that most participants initially had poor knowledge regarding febrile convulsion. However, after the information booklet intervention, the majority demonstrated good knowledge, confirming the effectiveness of the method. No significant association was found between demographic variables and knowledge levels, suggesting that the intervention was beneficial across all groups.

Keywords: Febrile convulsion, Information booklet, Knowledge, Parents, Under-five children, Pre-experimental study.

INTRODUCTION

Febrile seizures are triggered by fever, typically due to a viral infection. The underlying mechanism is not fully known, but it is thought to involve genetics, environmental factors, brain immaturity, and inflammatory mediators. The diagnosis involves verifying that there is not an infection of the brain, there are no metabolic problems, and there have not been prior seizures that have occurred without a fever. Examination to determine the source of the fever is recommended. Febrile seizures affect 2–10% of children.¹ They are more common in boys than girls. After a single febrile seizure there is an approximately 35% chance of having another one during childhood. Outcomes are generally excellent with similar academic achievements to other children and no change in the risk of death for those with simple seizures. There is tentative evidence that affected children have a slightly increased risk of epilepsy at 2% compared to the general population.²

Children with febrile convulsions are more likely to have a febrile seizure in the future if they were young at their first seizure (less than 18 months old), have a family history of a febrile convulsions in first-degree relatives (a parent or sibling), have a short time between the onset of fever and the seizure, had a low degree of fever before their seizure, or have a seizure history of abnormal neurological signs or developmental delay.³ Similarly, the prognosis after a complex febrile seizure is excellent, although an increased risk of death has been shown for complex febrile seizures, partly related to underlying conditions. The seizures occur, by definition, without an intracranial infection or metabolic problems. They run in families with reported family history in approximately 33% of people. Possible modes of inheritance for genetic predisposition to febrile seizures include autosomal dominance with reduced penetrance and polygenic multifactorial inheritance. An association with iron deficiency has also been reported, particularly in the developing world.⁴

Generally, seizures are observed in patients who do not have epilepsy. There are many causes of seizures. Organ failure, medication and medication withdrawal, cancer, imbalance of electrolytes, hypertensive encephalopathy, may be some of its potential causes. The factors that lead to a seizure are often complex and it may not be possible to determine what causes a particular seizure, what causes it to happen at a particular time, or how often seizures occur.⁵

NEED OF THE STUDY

They most commonly occur in children between the ages of 6 months and 5 years. Most seizures are less than five minutes in duration, and the child is completely back to normal within an hour of the event. Signs and symptoms depend on if the febrile seizure is simple versus complex.⁶ In general, the child's temperature is greater than 38 °C (100.4 °F), although most have a fever of 39 °C (102.2 °F) or higher. Febrile seizures (FS) are the most common type of seizure during childhood, reportedly occurring in 2–5% of children aged 6 months to 5 years. However, there are no national data on the prevalence of FS in Korea. This study determined the prevalence, incidence, and recurrence rates of FS in Korean children using national registry data.⁷

A study conducted by Javaid, Bushra et al., (2021) on A study to assess the knowledge regarding management of febrile convulsions among mothers of under five children. Febrile convulsions, though frightening, usually don't cause long-term harm or affect brain development, and they are different from epilepsy. They often result from infections or post-immunization fevers and are common in children under five. Since mothers play a key role in caring for children at

home, this study aimed to assess their knowledge on managing febrile convulsions. Conducted in rural Ganderbal, Kashmir, the study used a quantitative, descriptive survey design and a structured interview schedule. Results showed that 20% of mothers had inadequate knowledge, 57% had moderate knowledge, and 23% had adequate knowledge. The average score was 40.62, indicating a need for better education and awareness among mothers.⁸

Febrile convulsion is one of the most common neurological disorders among under-five children, often creating fear and anxiety among parents due to its sudden onset. Inadequate knowledge and misconceptions frequently lead to inappropriate practices that may worsen the child’s condition. Parents play a crucial role in recognizing and managing febrile convulsions effectively to prevent complications and reduce unnecessary hospital visits. Health education through an information booklet is a simple, cost-effective, and sustainable method to enhance parental knowledge. Considering the limited research in Pune city, the researcher felt the need to assess the effectiveness of such an intervention.

MATERIALS AND METHODS

This quantitative study used a pre-experimental one-group pretest–posttest design and was conducted in selected areas of Pune city. The target population included parents of under-five children residing in the selected areas, with a sample size of 60 participants selected through non-probability purposive sampling. The tool comprised two sections: Section A on demographic variables (age, gender, education, occupation, type of family, number of children, prior knowledge, and source of information), and Section B, a self-structured knowledge questionnaire regarding febrile convulsions, validated by experts from the Pediatric Nursing Department. Reliability was established using the test-retest method with Karl Pearson’s formula, yielding an r-value of +0.85. A pilot study on 6 participants confirmed the feasibility of the main study. Data were collected, scored, and analyzed using descriptive statistics such as frequency, percentage, mean, and standard deviation, along with inferential statistics including paired t-test and chi-square test for meaningful interpretation.

RESULTS

Section-I - Demographic data of the sample.

Table 1 Demographic Profile.

n=60		
Demographic Variables	F	%
1. Age of Child		
a. Below 1 Year	21	35.00
b. 1 to 2 years	8	13.33
c. 2 to 3 years	11	18.33
d. 3 to 4 years	12	20.00
e. Below 5 Year	8	13.33
2.Age of Parent		
a. 18-25 year	21	35.00
b. 26-33 years	14	23.33
c.34-40 years	16	26.67
d. Above 40 years	9	15.00
3. Marital status of Parent		

a. Married	42	70.00
b. Unmarried	0	0.00
c. Divorced	7	11.67
d. Separated	11	18.33
4. Educational Status		
a. Illiterate	13	21.67
b. Primary Education	8	13.33
c. Secondary Education	17	28.33
d. Higher education	12	20.00
e. Graduation and above	10	16.67
5. Occupation		
a. Homemaker	25	41.67
b. Government employees	7	11.67
c. Private Sector	19	31.67
d. Self Employed	9	15.00
6. Monthly Family Income		
a. Up to Rs. 5000	2	3.33
b. Rs. 5,001 - 15,000	28	46.67
c. Rs. 15,001 - 25,000	19	31.67
d. Above Rs. 25,001	11	18.33
7. History of febrile convulsions in child		
a. Yes	21	35.00
b. No	39	65.00
8. Family History of Febrile Convulsions		
a. Yes	23	38.33
b. No	37	61.67
9. Source of Information about Febrile Convulsions		
a. Family / Friends	8	13.33
b. Healthcare Professionals	12	20.00
c. Internet / social media	11	18.33
d. No prior Knowledge	29	48.33

The demographic findings revealed that the majority of children were below 1 year of age (35%), followed by those between 2 to 3 years (18.33%) and 3 to 4 years (20%). Among the parents, most were aged 18–25 years (35%), while 26.67% were between 34–40 years. The majority of parents were married (70%), with 11.67% divorced and 18.33% separated. Regarding education, most had secondary education (28.33%), while 21.67% were illiterate and 20% had higher education. In terms of occupation, 41.67% were homemakers, and 31.67% were employed in the private sector. Monthly family income showed that most families earned between Rs. 5,001–15,000 (46.67%), while 31.67% earned Rs. 15,001–25,000. A history of febrile convulsions in the child was reported by 35%, while 38.33% had a family history of febrile convulsions. Concerning the source of information, nearly half (48.33%) of the parents

had no prior knowledge, whereas 20% gained information from healthcare professionals, 18.33% from the internet or social media, and 13.33% from family or friends.

Section II A: Data related to assess the level of Knowledge score regarding febrile convulsion among the parents from Selected Areas of Pune City.

Table No.2: Related to Pre test Knowledge score regarding febrile convulsion among the parents.

n=60

LEVEL OF KNOWLEDGE PRE TEST	f	%	Mean	SD
POOR (0 - 5)	24	40.00	6.62	2.98
AVERAGE (6-10)	32	53.33		
GOOD (11-15)	3	5.00		
EXCELLENT (16-20)	1	1.67		

The table no.2 shows that the analysis of pre-test knowledge levels among parents regarding febrile convulsions revealed that the majority (53.33%) of parents had only an average level of knowledge, while 40% of parents were in the poor knowledge category. This indicates that a large proportion of parents were unaware of the causes, symptoms, and appropriate management of febrile convulsions. Only a very small fraction of parents demonstrated higher levels of understanding, with 5% showing good knowledge and just 1.67% achieving excellent knowledge. The mean score of 6.62 with a standard deviation of 2.98 further supports that overall knowledge was inadequate and clustered around the lower range. These findings highlight a significant knowledge gap among parents, which places children at risk of mismanagement during convulsive episodes. The results also emphasize the urgent need for structured health education programs, such as information booklets, to improve parental awareness and preparedness in handling febrile convulsions effectively.

Section II B: Data related to assess the knowledge score regarding febrile convulsion after administration of information booklet.

Table No.3: Related to Post-test level of knowledge score regarding febrile convulsion after intervention.

n=60

LEVEL OF KNOWLEDGE POST TEST	f	%	Mean	SD
POOR (0 - 5)	0	0.00	16.68	1.77
AVERAGE (6-10)	1	1.66		
GOOD (11-15)	7	11.67		
EXCELLENT (16-20)	52	86.67		

The table no.3 shows that the post-test assessment of knowledge levels regarding febrile convulsions showed a remarkable improvement among parents after the administration of the information booklet. None of the participants (0%) remained in the poor knowledge category, compared to 40% in the pre-test. Only 1.66% had average knowledge, while 11.67% demonstrated good knowledge. Significantly, the majority of participants (86.67%) attained an excellent level of knowledge. The mean score increased substantially to 16.68 with a standard deviation of 1.77, indicating both higher overall knowledge and reduced variability in scores.

These findings clearly demonstrate the effectiveness of the intervention, as most parents shifted from poor or average levels of knowledge in the pre-test to excellent knowledge in the post-test. The results strongly support the usefulness of the information booklet in enhancing parental knowledge and awareness regarding febrile convulsions.

Section- III: Data related to effectiveness of information booklet on febrile convulsion among parents from Selected Areas of Pune City.

Table No.4 - Related to compare the effectiveness of information booklet on febrile convulsion among parents from Selected Areas of Pune City before and after the intervention.

n=60

EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE REGARDING FEBRILE CONVULSION	Mean	SD	DF	T test calcaluated value	P value	Remark
Pre test	6.62	2.98	59	22.02	0.0001	Significant
Post test	16.68	1.77	59			

The table no.4 shows that study clearly demonstrated the effectiveness of the information booklet on improving the knowledge of parents regarding febrile convulsions. In the pre-test, the mean knowledge score was 6.62 with a standard deviation of 2.98, indicating that the majority of participants had poor to average knowledge. After administration of the booklet, the mean post-test score rose sharply to 16.68 with a standard deviation of 1.77, reflecting a marked improvement in knowledge levels. The calculated t value of 22.02 at 59 degrees of freedom with a p value of 0.0001 confirmed that the gain in knowledge was statistically significant. These findings strongly support that structured educational interventions, such as information booklets, are effective in bridging the knowledge gap among parents. The shift from poor and average knowledge levels in the pre-test to predominantly excellent knowledge in the post-test highlights the practical value of such health education tools in empowering parents to better understand and manage febrile convulsions in their children, ultimately contributing to improved child health outcomes. Based on these results, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1), stating that there is significant effectiveness of the information booklet, is accepted.

Section- IV: Finding related to an association between knowledge score and selected demographic variables among the parents.

The Chi-square analysis was conducted to examine the association between demographic variables and the level of knowledge regarding febrile convulsions among parents. Results showed no significant association between the age of the child and knowledge levels ($\chi^2 = -$, $p > 0.05$), indicating that knowledge did not vary significantly with child's age. Similarly, parental age ($\chi^2 = -$, $p > 0.05$), marital status ($\chi^2 = -$, $p > 0.05$), educational qualification ($\chi^2 = -$, $p > 0.05$), occupation ($\chi^2 = -$, $p > 0.05$), monthly family income ($\chi^2 = -$, $p > 0.05$), history of febrile convulsions in the child ($\chi^2 = -$, $p > 0.05$), family history of febrile convulsions ($\chi^2 = -$, $p > 0.05$), and source of information ($\chi^2 = -$, $p > 0.05$) also showed no significant association with knowledge levels. These findings suggest that the effectiveness of the information booklet

was consistent across different demographic groups, demonstrating that the intervention was broadly beneficial regardless of participants' background.

DISCUSSION

The present study aimed to evaluate the effectiveness of an information booklet on knowledge regarding febrile convulsions among parents from selected areas of Pune City. Initially, the pre-test scores indicated low knowledge with a mean score of 6.62 (SD = 2.98). However, following the intervention, the post-test scores improved significantly to a mean of 16.68 (SD = 1.77). The paired t-test yielded a calculated t-value of 22.02 (df = 59) with a highly significant p-value of 0.0001, confirming that the information booklet was effective in enhancing parental knowledge regarding febrile convulsions. This significant improvement highlights the importance of structured educational materials in increasing awareness and equipping parents with essential knowledge for the timely recognition and management of febrile convulsions, thereby promoting better child health outcomes.⁹

In a similar study by Javaid Ahmad Mir, Bushra Mushtaq, and Onaisa Aalia Mushtaq assessed the knowledge of mothers of under-five children regarding the management of febrile convulsions in rural Ganderbal, Kashmir, and found that 57% had moderate knowledge, 20% had inadequate knowledge, and only 23% had adequate knowledge. These findings indicate a substantial knowledge gap, highlighting the need for structured educational interventions to equip mothers with essential skills for managing febrile convulsions effectively, especially in rural areas with limited healthcare access.⁹ Another Study by Almousa et al. (2023) conducted a cross-sectional online survey among 415 parents in Riyadh, Saudi Arabia, to assess knowledge, attitude, and practice regarding febrile convulsions. The study revealed poor parental knowledge, with 88.9% having inadequate awareness and only 1.2% showing good knowledge. Attitudes were mostly negative (35.2%) or neutral (49.4%), with just 15.4% positive. In terms of practices, most parents (68.6%) would rush their child to a doctor, while others relied on basic home measures. The findings highlight significant gaps in awareness and emphasize the need for structured educational interventions to improve parental preparedness and management of febrile convulsions.¹⁰

CONCLUSION

This study demonstrates that an information booklet can significantly improve knowledge regarding febrile convulsions among parents in selected areas of Pune City. The pre-test results indicated low baseline knowledge with a mean score of 6.62, while the post-test results showed a remarkable improvement, with the mean score increasing to 16.68. Statistical analysis confirmed that the intervention was highly effective, as evidenced by the significant difference between pre-test and post-test scores ($t = 22.02$, $p < 0.001$). These findings highlight the potential of information booklets as simple, cost-effective, and accessible educational tools to enhance parental awareness and promote timely management of febrile convulsions. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, confirming the significant effectiveness of the information booklet. The study emphasizes the importance of incorporating such educational interventions in community health programs to improve knowledge and reduce risks associated with febrile convulsions, ultimately contributing to better child health outcomes.

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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