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A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF EDUCATIONAL INTERVENTIONAL PROGRAM ON KNOWLEDGE REGARDING FEBRILE SEIZURES AND ITS PRACTICE AMONG PARENTS OF UNDER FIVE CHILDREN ADMITTED IN SELECTED HOSPITALS, VADODARA, GUJARAT

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ABSTRACT

Background: Children below the age of five exhibit increased susceptibility to a wide array of infections. These youngsters, aged less than five years, possess delicate physiologies that are still in the process of development. Febrile seizures denote convulsions that typically manifest in children aged 6 months to 5 years, concomitant with a fever exceeding 38°C (100.4°F). Such seizures occur in cases devoid of indications of cranial causes (e.g., infection, head injury, epilepsy), definable seizure triggers (such as electrolyte imbalances, low blood sugar, substance misuse, or withdrawal), or a past history of febrile seizures. **Objectives**: This study's goal was to assess the effectiveness of an educational intervention program designed to enhance parental knowledge and practical competence concerning febrile seizures among children aged under five. **Material & Methods**: Employing a pre-experimental research design (specifically, the single-group pre-test post-test configuration), data were gathered from a population, with a sample of 126 parents with children under five selected through the application of convenience sampling. **Results**: The amassed data underwent tabulation and analysis, utilizing both descriptive and inferential statistical methods. The mean score during the pre-test phase was recorded at (10.556), while the post-test phase yielded a mean score of (17.8413). Notably, the mean score pertaining to post-test knowledge levels surpassed that of the pre-test. At a

significance level of 0.05, the computed 't' value (33.028) significantly exceeded the tabulated value. **Conclusion**: The computations based on both the pre-test and post-test scores clearly indicate an enhancement in parental comprehension and practical application of knowledge concerning febrile seizures among children under five. Consequently, the educational intervention program can be deemed effective.

Keywords: Febrile seizure, parents of Under five children, Knowledge, Practice

INTRODUCTION

Febrile seizures (FS) stand as the most prevalent type of seizures observed in childhood **[1]**. The American Academy of Pediatrics (AAP) characterizes a febrile seizure as a seizure transpiring in a child with a fever, aged between 6 and 60 months, and in the absence of intracranial infection, metabolic irregularities, or a record of seizures unrelated to fever **[2]**.

Approximately 2-5% of children are projected to experience at least one seizure during a fever-related illness before reaching 5 years of age, contributing to around 30% of all instances of seizures in the pediatric population **[3]**. It has been postulated that deviations in the levels of serum electrolytes could heighten susceptibility to seizures and the likelihood of febrile seizure recurrence in childhood. Reduced sodium levels have the potential to trigger nerve cell depolarization, thereby precipitating convulsive episodes **[4]**. While the American Academy of Pediatrics (AAP) does not advocate for the routine acquisition of serum electrolyte measurements in children following their first febrile seizure, multiple studies indicate that hyponatremia serves as a risk factor for the recurrence of febrile seizures **[5, 6]**.

Despite seizures being a noteworthy source of health challenges and potential harm among children, febrile seizures are generally regarded as harmless and tending to resolve on their own. However, they evoke strong emotional responses from parents due to the fear and apprehension they trigger. Gaining a comprehensive comprehension of febrile seizures becomes crucial, not only to alleviate parents' concerns but also to facilitate appropriate and effective management strategies **[7, 8]**.

A research conducted by Nyaledzigbor *et al*. investigated the understanding of Ghanaian mothers regarding Febrile Convulsions (FC). The findings indicated that a significant number (70%) of mothers displayed commendable awareness of FC in children, characterizing it as an ailment where children exhibit spasms. In contrast, a similar study performed by Kheir *et al*. involving parents of children experiencing FC in India revealed disparities in knowledge. Specifically, 77.9% of parents

lacked the knowledge that FC could be triggered by fever. Moreover, 90.7% of parents did not administer any initial first aid measures before seeking professional medical care for their children, and they also struggled to correctly identify the symptoms of FC **[9]**.

OBJECTIVES OF THE STUDY

- To appraise parents' familiarity with febrile seizures through a preliminary examination
- To gauge the current behaviors of parents in response to febrile seizures
- To devise and implement an educational intervention scheme centered on febrile seizures
- To gauge the impact of the educational intervention scheme on parents of children under five through a subsequent evaluation
- To examine the connection between parents' pre-test knowledge and sociodemographic factors concerning children under five

HYPOTHESES

H_0: There will be no significant association between pretest Knowledge and socio demographic characteristics of the parents regarding febrile seizures among Under five children.

H_1: There will be significant association between pretest Knowledge and socio demographic characteristics of the parents regarding febrile seizures among Under five children.

H_2: There will be significant difference between pretest and posttest Knowledge scores of the parents on Knowledge regarding febrile seizures and its Practice among Under five children.

ASSUMPTION

Parents could potentially exhibit deficiencies in knowledge and practical skills pertaining to febrile seizures among children under the age of five.

MATERIALS AND METHOS

A quantitative research approach with pre-experimental one group pretest and post test study was conducted in selected hospitals of Vadodara Gujrat, which includes Ashray Children's hospital, Kendranagar and Dhiraj hospital, Waghodia. The samples were parents of Under five children and they were selected by Convenience sampling technique. Total samples identified and included in the study were 126 parents. All study samples were explained about the purposes of the study and informed consent was obtained from them before the study was commenced.

Participant Information sheet was offered to all selected samples and they were given freedom to be a part of study or can withdraw themselves at any point of study time. The tool used for data collection were divided intothree sections.

Section I - consists of demographic data of

parents of under five children

Section II - consists of Semi structured Knowledge questionnaire on Febrile Seizure,

Section III includes Practice check-list to understand the practice of parents regarding febrile seizure.

RESULTS

Section-I Demographic variable of Parents of Under five children

The **Table 1** illustrates the distribution of frequency and percentages among caregivers of children under the age of five. The analysis reveals that within the sample, a significant proportion, accounting for 62.7%, consisted of mothers. A majority, approximately 74.6%, of parents possessed an undergraduate qualification. Furthermore, 62.7% of parents were affiliated with joint families, and an equivalent percentage, again 62.7%, had just one child.

Section-II Assessment of knowledge score on pre-test and post-test after administration of role play.

The **Table 2** provided above displays the outcomes of Knowledge scores concerning febrile seizures among parents of children under five years old, both prior to and following the implementation of the role play session. The post-test findings reveal that a considerable majority, encompassing 90 parents (71.42%), exhibited a sufficient level of knowledge (scoring between 17 and 25), indicating their well-informed understanding of febrile seizure management for children under five.

The **Table 3** provided above presents the comparison of parental practice concerning febrile seizures among children under the age of five before and after the implementation of the role play session. In the post-test evaluation, the results indicate that a significant majority, comprising 124 parents (98.41%), exhibited a high level of practice (scoring between 11 and 20), signifying their effective grasp of febrile seizure management for children under five years old. Conversely, a mere 2 parents (1.58%) demonstrated a lower level of practice (scoring between 1 and 10), reflecting a less proficient understanding of managing febrile seizures in this age group.

Section-III Effectiveness of role play on knowledge regarding febrile seizure among parents of under five children

The **Table 4** presented above illustrates the Mean, Mean difference, and standard deviation of parents' pre-test and post-test Knowledge scores pertaining to febrile seizures in children under five years old. This data signifies that the mean post-test score (17.8413) surpasses the mean pretest score (10.556). The computed "t" value (33.028) is greater than the tabulated value at the 0.05 level of significance. This outcome indicates that the conducted role play was successful in effectively

conveying knowledge about febrile seizures in children under five.

The **Table 5** presented above provides information regarding the Mean, Mean difference, and standard deviation of parents' pre-test and post-test Practice scores concerning febrile seizures. The calculated "t" value (38.002) surpasses the tabulated "t" value of 2.042 at the 0.05 significance level. Consequently, the utilization of role play was established to be successful in imparting knowledge to parents of children under five years old.

Section- IV Association between pre-test knowledge score with selected demographic variables

The **Table 6** presented above demonstrates that, with the exception of the variable indicating the number of children under the age of five in the family, no discernible association exists between the chosen sociodemographic factors and parents' understanding of febrile seizures. As a result, the hypothesis (H1) is declined, and the null hypothesis (H0) is accepted.

Table 1: Demographic variable of Parents of Under five children

S. No.	Demographic variables	Frequency	Percentage
1.	Role of care giver		
	A) Father	47	37.3%
	B) Mother	79	62.7%
2.	Educational status of the parent		
	A) No Formal Education	16	12.7%
	B) Undergraduate Level	94	74.6%
	C) Postgraduate Level	16	12.7%
3.	Type of family		
	A) Nuclear family	47	37.3%
	B) Joint family	79	62.7%
4.	Number of Under five children in the family		
	A) One	79	62.7%
	B) Two	40	31.7%
	C) More than two	07	5.6%
5.	History of maternal seizure		
	A) Yes	23	18.3%
	B) No	103	81.7%

Table 2: Assessment of knowledge score on pre-test and post-test after administration of role play

Level of Knowledge	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Adequate Knowledge (17-25)	1	0.7%	90	71.42%
Moderately adequate Knowledge (9-16)	95	75.39%	36	28.57%
Inadequate Knowledge (0-8)	30	23.80%	00	0.0%

Table 3: Assessment of Practice regarding Febrile seizures score on pre test and post test after administration of role play

Level of Practice	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Good Practice (11-20)	16	12.69%	124	98.4%
Poor Practice (1-10)	110	87.30%	2	1.58%

Table 4: Effectiveness of role play on knowledge regarding febrile seizure among parents of under five children

Variables	Mean	Mean	Std.	't' value	Significance

		difference	Deviation		
Pre-test Knowledge score	**10.05**	**7.78**	**2.64**	**33.02**	**Significant**
Post-test Knowledge score	**17.84**				

Table 5: Effectiveness of role play on Practice regarding febrile seizure among parents of under five children

Variables	Mean	Mean difference	Std. Deviation	't' value	Significance
Pre-test Practice score	**8.07**	**8.00**	**2.36**	**38.00**	**Significant**
Post-test Practice score	**16.09**				

Table 6: Association between pre-test knowledge score with selected demographic variables

Variables	Adequate	Moderate adequate	Inadequate	Total	x^2	Signifi-Cance
Role of Care Giver					**1.86**	**NS**
Father	**1**	**34**	**12**	**47**		
Mother	**0**	**61**	**18**	**79**		
Total	**1**	**95**	**30**	**126**		

Variables	Adequate	Moderately Adequate	Inadequate	Total	X^2	Significance
Educational Status					**7.21**	**NS**
No Formal Education	**0**	**10**	**6**	**16**		
Undergraduate Level	**1**	**69**	**24**	**94**		
Postgraduate Level	**0**	**16**	**0**	**16**		
Total	**1**	**95**	**30**	**126**		

Variables	Adequate	Moderately Adequate	Inadequate	Total	X^2	Significance
Types of Family					**2.47**	**NS**
Nuclear Family	**1**	**37**	**9**	**47**		
Joint Family	**0**	**58**	**21**	**79**		
Total	**1**	**95**	**30**	**126**		

Variables	Adequate	Moderately Adequate	Inadequate	Total	X^2	Significance
No. of Under Five Children					**10.29**	**S**
One	**1**	**63**	**15**	**79**		
Two	**0**	**30**	**10**	**40**		
More than Two	**0**	**2**	**5**	**7**		
Total	**1**	**95**	**30**	**126**		

Variables	Adequate	Moderately Adequate	Inadequate	Total	X^2	Significance
History of Maternal Seizure					**0.869**	**NS**
Yes	**0**	**16**	**7**	**23**		
No	**1**	**79**	**23**	**103**		
Total	**1**	**95**	**30**	**126**		

DISCUSSION

The demographic characteristics of the participants in the study were analyzed to understand the distribution of various factors among parents of children under the age of five. The majority of the subjects, accounting for 62.7%, were mothers, while 37.3% were fathers. In terms of educational background, 74.6% had an undergraduate educational status. Additionally, 60.3% were part of joint families, 62.7% had only

one child under the age of five in the family, and a significant percentage, 81.7%, had no history of maternal seizures.

To determine the impact of an educational intervention program on the knowledge and practice of febrile seizure management, a statistical analysis was conducted. The calculated 't' value of 38.00 was found to be significantly higher than the tabulated value of 1.65 at a 0.05 level of significance. This suggests that the null hypothesis can be rejected, and it can be concluded that there is a substantial difference between the pre-test and post-test levels of knowledge regarding febrile seizures and their management among parents of children under five years old.

On the other hand, the obtained chi-square (X^2) values for the demographic variables were observed to be less than the table value of X^2 at a 0.05 level of significance. This indicates that the obtained X^2 values are not statistically significant, and as a result, the null hypothesis related to these demographic variables fails to be rejected.

Interestingly, awareness regarding febrile convulsions and the associated preventive actions was more pronounced among participants belonging to higher socio-economic strata ($P < 0.05$) **[10]**.

In research conducted by Rkain M *et al*. (2014), the significant improvement in knowledge and practice of first aid among parents after an educational intervention aligns with the findings of the current study. Among these parents, merely 3.5% were able to accurately define the temperature threshold that constitutes a fever. Approximately 54.4% of the parents employed a thermometer to determine their children's fever, and the rectal site was the preferred method for temperature measurement. The vast majority, amounting to 96.8%, perceived fever as an extremely serious condition, potentially leading to various adverse outcomes such as brain damage (28.9%), seizures (18.8%), paralysis (19.5%), breathing difficulties (14.8%), and even coma (14.8%). In managing febrile episodes, 85.9% of parents administered paracetamol, while 45.1% resorted to traditional remedies. Notably, understanding the precise definition of fever was notably linked to factors including parents' occupation, educational attainment, and previous exposure to information and guidance from healthcare professionals **[11]**.

Another study by Sakai R, *et al*. (2009) emphasized the importance of maternal education in enhancing parental understanding of pediatric health concerns. Mothers with children who had experienced febrile seizures displayed a heightened level of precision in their understanding of fever compared to the mothers in the alternative group. Those mothers with children having a history of

febrile seizures predominantly obtained information through personal conversations, while their counterparts from the different group depended on broader communication channels for health-related knowledge. Furnishing precise and reliable information to family members holds paramount importance as it equips mothers with accurate insights and offers them the emotional backing they require **[12]**.

In conclusion, the research results highlight the effectiveness of the educational intervention program in improving the knowledge and practice of febrile seizure management among parents of children under five. The demographic characteristics demonstrated interesting trends, but they did not significantly influence the outcomes. These findings align with previous studies, reinforcing the positive impact of targeted health education interventions.

CONCLUSION

Based on the assessment of both initial and final test scores, it is evident that there was enhancement in parental understanding and practical application concerning febrile seizures among caregivers of children under the age of five. This outcome strongly suggests the success of the educational intervention program.

RECOMMENDATIONS

1. The research can be duplicated using a sizable participant pool, enabling the results to be applicable to a broader demographic.
2. The identical research can be executed with pediatric ward nursing personnel to evaluate their comprehension and application of febrile seizure knowledge.
3. A scenario-based activity can be developed to amplify parental understanding concerning febrile seizures for children under five, along with their practical application.
4. A quantitative investigation can be carried out to evaluate parental encounters with febrile seizures when their child experiences such an episode.

CONFLICT OF INTEREST: The authors declare that there is no any conflict of interest

ETHICAL CLEARANCE: Since the research involved human participants, prior to initiating the study, authorization was secured from the institutional ethical committee.

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