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THE EFFECT OF AUDIOVISUAL-BASED HEALTH EDUCATION ON PARENTS' KNOWLEDGE OF FIRST HANDLING OF FEBRILE SEIZURES IN CHILDREN

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Abstract

Febrile seizures are prevalent from 3 to 5 years of age. A sudden increase in body temperature is one of the causes of seizures. The role of parents is very influential in managing febrile seizures in children. Adequate parental knowledge can effectively manage febrile seizures. Effective first treatment of febrile seizures in children can prevent post-febrile seizure trauma. Increased knowledge can be achieved through health education, one of the effective health education media is audiovisual media. Analyze the effect of audiovisual-based health education on parents' knowledge about the first treatment of febrile seizures in children. The type of research used is quantitative with a Quasi-experimental design, a non-randomized pretest, and a posttest with a control group design. The sampling technique used purposive sampling. The sample size used was 82 respondents (41 intervention group and 41 control group) and data analysis using the Wilcoxon signed rank test. Data analysis was carried out with the Wilcoxon Signed Rank Test where the average knowledge score before the audiovisual-based health education intervention with a mean knowledge score was 11.73, while the mean score of knowledge after the intervention was 14.80 with a p-value 0f 0.000 which proves the data is significant. There is a difference in parents' knowledge about the first treatment of febrile seizures in children before and after being given an audiovisual-based health education intervention.

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INTRODUCTION

Fever is caused by an irregular increase in body temperature beyond the normal range and is caused by an imbalance between heat production and storage 1. This increase in body temperature is due to the thermoregulatory center in the hypothalamus in response to certain changes. Improper treatment can lead to dehydration, low oxygen levels, febrile convulsions, and even death, especially in children 2.

Febrile seizures are very common in children aged 3 to 5 years. Temperature is one of the causes of seizures 3. Prolonged febrile seizures can disrupt cell function, damage neurons, and cause intellectual retardation if left untreated 4.

According to the World Health Organization (WHO) in Sirait et al children worldwide suffer from febrile seizures, reaching 21.65 million people, and 216,000 of these children die from seizures accompanied by fever 3. Fever seizure rates vary by country 4. 80% of the frequency of febrile seizures occurs in developing countries; about 3.5 to 10.7% is found in countries with high economic levels 5.

The Indonesian Pediatric Association, or IDAI, reported in 2016 that, according to research on the management of febrile seizures conducted by Suryagustina et al., cases of febrile seizures are found in roughly 2 to 4% of Indonesian children between the ages of 24 weeks and 5 years 6. About 34% of girls get febrile seizures, compared to 66% of boys who experience them frequently. The DKI Jakarta Health Office reported in 2020 that, according to research by Mariyani and Sinurat, 2 to 3 out of every 100 residents of DKI Jakarta have a child who is experiencing febrile seizures 7.

Parents are severely affected when their children have seizures along with a fever. Seizures resulting from a fever can be

extremely frightening and stressful for parents. Correctly managing a child's fever can help avoid febrile seizures 7.

A child's ability to manage convulsions that are feverish depends on the responsibilities and roles of his parents knowledge. The management of febrile seizures is significantly influenced by the degree of awareness that some parents possess about these episodes. When their children encounter febrile seizures, parents and families who possess sufficient or adequate knowledge about managing febrile seizures can handle the situation well 8.

The prevention of seizures that are accompanied by fever, as well as parents' awareness and actions during their children's seizures, are critical. Giving health information is a health education activity that allows people to practice what they have learned in addition to knowing, understanding, and realizing it 9. Parents who get health education regarding their child's seizures and fever can greatly enhance their understanding of how to manage their child's febrile seizures 8.

Increased knowledge can be achieved through health education. One of the health education media is the use of audiovisual media 2. This type of media has a huge impact on auditory and visual stimulation when delivering health education materials 10. Audiovisual media can be a means to support the health education process.

According to research conducted by Saleh et al. health education was given to 20 respondents, with families or parents who have children aged 12 weeks–5 years 2. This study shows the statistical results of the independent t-test test in the group given the intervention show that the p-value is less than 0.05 or there is an influence between the provision of health education regarding seizures accompanied by fever with the level of parental knowledge. Health education interventions using video are proven to have an effect on the level of knowledge of families and parents about the management of seizures accompanied by fever experienced by children.

Prior research on health education has focused solely on health education and the impact of media, such as flyers, flip charts, and movies, on parents' and families' comprehension of managing seizures in general and febrile seizures in particular. In this study, the importance of early seizure management for children was highlighted by researchers as they examined the impact of audiovisual-based health education. The audiovisual materials are bundled with animations to make them more engaging and help parents focus on the health instruction that will be provided.

Based on the background that has been described, the researcher is eager to investigate this issue under the heading "The Effect of Audiovisual-Based Health Education on Parents' Knowledge About the First Handling of Febrile Seizures in Children."

METHODS

The This study is quantitative, has a control group design, a non-randomized pretest and posttest, and a quasi-experimental design. There were 82 respondents in all for this study (41 for the intervention group and 41 for the control group). Researchers employed one intervention group and one control group in this design, with the intervention group receiving audiovisual-based health education about how the first handling of febrile seizures in children.

Animation films of two minutes and fifty seconds were used as the initial method of treating febrile seizure children, are given to the intervention group. After the research series was concluded, health education by an animation film was delivered to the control group. To ascertain parental knowledge before the intervention, researchers administered a pretest questionnaire; to ascertain parental knowledge following the intervention, they administered a posttest questionnaire. The purpose of this study was to determine how parents' understanding how to treat the child's febrile seizures was affected by audiovisual-based health education.

An instrument derived from Handayani and Hijriyati was used in this study to assess parents' knowledge regarding how to handle febrile seizures in children 17. The questionnaire consists of 15 true and false statements that must be filled in by parents by checking the available column. Each correct statement will be given a value (1) and if it is wrong it will be given a value (0).

The Health Research Ethics Commission of the Poltekkes Kemenkes Jakarta III has granted this study a certificate of ethical feasibility (No. LB.02.02/F.XIX.21/3288/2024).

RESULTS AND DISCUSSION

According to Table 1, there were primarily more female respondents in both the intervention group (38, or 92.7%) and the control group (34, or 82.9%). The employment characteristics of the respondents are divided into two categories in this study: working and not working. According to the frequency of data distribution, the majority of respondents in both the intervention group (22 respondents, or 53.7% of the total) and the control group (26 respondents, or 63.4% of the total) did not work.

Table 1. Respondents Characteristics

Characteristics	Group			
	Intervention(n=41)		Control (n=41)	
	N	f (%)	N	f (%)
Gender				
Male	3	7,3%	7	17,1%
Female	38	92,7%	34	82,9%
Job				
Work	19	46,3%	15	36,6%
Not Working	22	53,7%	26	63,4%
Education				
≤ SMP	2	4,9%	7	17,1%
≥ SMA	39	95,1%	34	82,9%
Age				
≤ 32	23	56,1%	20	48,8%
> 32	18	43,9%	21	51,2%

Educational characteristics of respondents were categorized by researchers into ≤ junior high school and ≥ high school. It was found that the respondents in the intervention group and control group were mostly educated ≥ high school, namely 39 respondents (95.1%) from the intervention group and 34 respondents (82.9%) from the control group.

Based on the median cutoff point, the individuals' age characteristics were divided into two groups: < 32 and > 32. The results showed that the majority of respondents in the intervention group with age ≤ 32 were 23 respondents (56.1%) and the control group obtained the results of the majority of respondents' age > 32 as many as 21 respondents (51.2%).

Tabel 2 Knowledge Score Distribution of Intervention Group and Control Group

Variabel	Group		*Pretest*	*Posttest*
Knowledge	Intervention (n=41)	Mean ± SD	11.73 ± 1.962	14.80 ± 0.401
		Median	12.00	15.00
		Min - Max	7 – 15	14 – 15
	Control (n=41)	Mean ± SD	11.83 ± 1.870	11.63 ± 1.757
		Median	12.00	11.00
		Min - Max	8 – 15	8 – 15

Table 2 displays the intervention and control groups' knowledge scores. In the intervention group, the highest pretest score was 15, while the lowest score was 7. The pretest median score was 12, and the average score was 11.73 with a standard deviation of 1.962. A score of 15 was the highest posttest knowledge score, while a score of 14 was the lowest. 14.80 was the average posttest score. The control group, on the other hand, had a median score of 12 and an average pretest score of 11.83 with a standard deviation of 1.870. 15 was the highest posttest knowledge score, while 8 was the lowest. The median score was 11, while the average posttest score was 11.63 with a standard deviation of 1.757.

Table 3 variation of knowledge levels between the intervention group's and the control group's pre- and post-intervention

Variabel	Group	Class	Mean	Mean Difference	SD	P Value
Knowledge	Intervention (n=41)	Pretest	11.73	3.07	1.962	0.000*
		Posttest	14.80		0.401	
	Control (n=41)	Pretest	11.83	0.20	1.870	0.106*
		Posttest	11.63		1.757	

According to tabel 3, the average knowledge scores' intervension group before audiovisual-based health education was 11.73 with a standard deviation of 1.962, and the means knowledge score after the intervention was 14.80 with a standard deviation of 0.401. The intervention group's pretest and post-test showed a mean score

difference of 3.07. The outcome of the p-value is 0.000 (<0.05), which is indicates significant data. The results of the statistical test demonstrate that parents' understanding of how to handle a child's first febrile seizure differs before and after they get an audiovisual-based health education intervention.

The pretest knowledge score for the control group was 11.83 on average, with a standard deviation of 1.870. In the posttest calculation, the average posttest knowledge score was 11.63 with a standard deviation of 1.757. The pretest and posttest of the control group had an average score difference of 0.20. The p-value of 0.106 (>0.05) indicates that there is no difference in parents' knowledge about handling febrile seizures in children based on the results of the pretest and posttest knowledge scores.

The results of this study are in line with research conducted at the RW 05 Keprabon Surakarta posyandu on the effect of health education using audiovisual media on the level of knowledge and attitudes of parents about handling febrile seizures in children, with a total of 40 parent respondents. The results obtained were an increase in parental knowledge with a sufficient knowledge category with a percentage of 100% after being given health education interventions with audiovisual media 11. This research is also in line with research conducted by Saleh et al. (2022). The results showed an increase in knowledge of parents who were given education using audiovisual media with a p-value of 0.053, so it can be concluded that health education or health education using audiovisual media is proven to have a significant effect on increasing parental knowledge.

Because audiovisual media has an effect that makes parents want to see it, it can be used to effectively raise parents' understanding about health issues. Additionally, using audiovisual material can excite people's senses, including their hearing and eyesight. Seventy-five to eighty-seven percent of information or signals received after viewing and hearing content presented by audiovisual media can be received by the eyes and ears and transmitted to the brain, with the remaining portion being received by other senses. As a result, audiovisual media have demonstrated a high level of effectiveness in channeling stimuli 2.

Researchers can presume that audiovisual-based health education interventions can influence the difference in knowledge scores before and after the intervention based on the outcomes noted above and the theoretical rationale. According to Saleh et al. children who have febrile seizures can benefit from a favorable prognosis if their parents are knowledgeable and skilled in managing the condition. Additionally, parents can administer the initial treatment for their children at home.

Table 4: Table 4: Differences between the intervention group's and control group's

post-test means

Group	**N**	**Mean**	**Mean Difference**	***Mann Whitney***	**Z**	**P Value**
Intervention	41	60.22	37.44			
				73.000	-7.452	0.000
Control	41	22.78				

Table 4 presents the average posttest scores of the intervention group (average = 60.22) and the control group (average = 22.78). The results indicate a 37.44-point difference in the average posttest scores between the two groups, with a Mann-Whitney value of 73.000 and a z-score of -7.452, which is greater than the z-table value of -1.96. The significance level or P-value is 0,00 (<0.05), indicating statistical significance in the data. Comparing the average score of parents' knowledge about managing febrile seizures in children, there is a difference in the average score of parents' knowledge about handling febrile seizures in children between the intervention group and the control group, indicating that H0 is rejected and Ha is accepted.

Table 5: Correlation between mean level of knowledge and respondent characteristics

Variabel	Group	Characteristics	N	Mean	Z	P Value
Knowledge	**Intervention (n=41)**	**Education**	2	14.75	-1.102	0.271
		≤ SMP	39	21.32		
		≥ SMA				
		Job				
		Work	19	22.84	-1.333	0.183
		Not Working	22	19.41		
		Age	23	22.33	-1.167	0.243
		≤ 32	18	19.31		
		> 32				
Knowledge	**Control (n=41)**	**Education**	7	11.00	-2.479	0.013
		≤ SMP	34	23.06		
		≥ SMA				
		Job				
		Work	15	20.27	-0.304	0.761
		Not Working	26	21.42		
		Umur	20	22.70	-0.906	0.365
		≤ 32	21	19.38		
		> 32				

According to the study's findings, the intervention group's p-value was 0.271 > 0.05, indicating that the data is not significant. This is consistent with a study done in Padang City in 2024 by Azzahra, which involved 107 teachers as responders. A p-value of 1,000 > 0.05 indicated that there was no correlation between education level and knowledge of how to treat febrile seizures in children. The more intensely a person interacts with other people, the more educated they will become; as a result, it will be simpler to get information or knowledge from a large number of people. However, due to the rapidly expanding body of technological knowledge, everyone has the same ability and freedom to use websites and the media to gain information on health and other topics 12.

The results of the analysis of characteristics in the control group have results that are inversely proportional to the group given the intervention. The results in the control group obtained a p-value of 0.013 <0.05 which means that there is a significant influence between education and parental knowledge. This is in line with research conducted by Habibi, Atika and Andri (2021) about the relationship between education level and parents' knowledge level in handling fever in children at Abulyatama University with 92 respondents. The results of the study prove a significant relationship between the level of education and the level of knowledge of parents in handling fever in children with a p-value of 0.001 <0.05.

The researcher's assumption regarding the difference in the results of the statistical test of educational characteristics on parental knowledge regarding the first management of seizures accompanied by fever in children, because in the intervention group the parents' knowledge increased overall as a result of the intervention provided in the form of viewing educational videos. Meanwhile, in the control group, parents' knowledge did not receive intervention or exposure to information when measuring knowledge, but information or education was given after measuring knowledge.

In this study, the results of the p-value in the intervention group were 0.183> 0.05. In addition, the control group obtained a p- value of 0.761> 0.05, which means that the data is not significant or there is no influence between occupation and parental knowledge regarding the first handling of febrile seizures in children. This study is in line with research conducted by Nursa'iidah and Rokhaidah (2022) In the BMI 3 Posyandu, Segara Jaya Village, Bekasi Regency with 65 respondents. The results showed that there was no relationship between maternal employment and maternal knowledge and the p-value obtained was 0.191> 0.05.

This research is also in line with research conducted by Devi (2019) about the relationship between occupation, income, and education with the level of parental knowledge in Surabaya with a total of 59 respondents. The results of the study prove that there is no relationship between parental employment and parental knowledge and the p-value obtained is 0.196> 0.05.

Parents who are busy working lack good knowledge due to a lack of environmental support to obtain knowledge or

information about health where parents work. Parents who are busy working find it difficult to set aside free time to accompany their children or to just look for information about children's health because parents will focus more on the work they are doing. Meanwhile, parents who do not work have the opportunity to access information from various media, such as the internet 14.

Based on the description of the theory and the results of the study, the researcher argues that there is no influence of work on parents' knowledge about the first treatment of seizures accompanied by fever in children. Parents who are busy working will have difficulty finding free time to obtain information about health because their focus of parents will be divided between work and seeking information.

The results of this study obtained a p-value in the intervention group of 0.243> 0.05 while in the control group obtained a p- value of 0.365> 0.05 and can be interpreted that the data is not significant or there is no influence between age and parental knowledge. This study is in line with research conducted by Tinambunan and Lestari (2024) at Muara Sibunton Elementary School with 80 parents as respondents. The results of this study obtained a p-value of 0.725> 0.05 and can be interpreted that there is no relationship between age and parental knowledge 16.

The age of the individual is increasing, causing the individual's ability to process new information or knowledge to also increase over time, so that it can be easier to process information. However, currently the information media is increasingly widespread in the community. An individual will be increasingly facilitated in obtaining information or age no longer affects individuals in receiving information 12.

Age is no longer a factor that affects knowledge, because there are other factors that can affect knowledge such as previous information exposure, social, economic, cultural, experience, and the surrounding environment 16.

Based on the theory and research results listed, the researcher can assume that there is no influence between age and parental knowledge. The rise of information media in society as well as several other factors, can affect parents in receiving and processing information and affect the increase in parental knowledge.

CONCLUSION

In the intervention group, there was no significant influence between education, occupation, and age on parents' knowledge about the first treatment of febrile seizures in children. In the control group, there was no significant influence between occupation and age on parental knowledge, while the education category showed a significant relationship between education and parental knowledge about the first handling of febrile seizures in children.

There is a difference in parental knowledge in the intervention group after audiovisual- based health education intervention and the control group with no intervention, obtained a p-value of 0.000 <0.05 which indicates that there is an effect of audiovisual-based health education on parental knowledge. These results prove that H0 is rejected and Ha is accepted, meaning that there are differences in parental knowledge in the intervention group given audiovisual-based health education and the control group without intervention.

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