

Differences of Mothers Knowledge in The First Treatment of Febrile Seizures for Children Under Five Before and After Being Educated with Leaflet Media at Sakura Ward

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Abstract: Introduction: Febrile seizures are convulsions in children triggered by a body temperature above 38°C without intracranial abnormalities. This condition may cause delayed brain development, paralysis, mental retardation, and 2–10% may progress to epilepsy or death. Methods: This study aimed to determine the difference in mothers' knowledge about first aid for febrile seizures in children under five before and after health education using leaflet media. The research was conducted from September to October 2024 in the Sakura Ward of Buleleng Regency Hospital with 32 respondents selected through purposive sampling. A pre-experimental one-group pretest–posttest design was applied. Results: Before the intervention, 90.6% of respondents had low knowledge, while after the intervention, 93.8% had good knowledge. The paired t-test obtained a p-value of 0.000 (<0.05), indicating a significant difference in mothers' knowledge before and after education. Conclusion: Health education using leaflet media effectively improves mothers' knowledge about first aid for febrile seizures in toddlers. Health workers are advised to use leaflet media as a concise, clear, and efficient educational tool for febrile seizure prevention.

Keywords: febrile seizure, knowledge, leaflet media

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Introduction

One health issue that frequently affects children is fever. A fever is a symptom of a disease that, if improperly treated, can lead to major issues including febrile seizures in children (Tauhidah and Pramono, 2022). A febrile seizure is a neurological disorder that often occurs in children under the age of 5 years, a condition in which children between the ages of 6 months and 5 years experience seizures due to an increase in body temperature (more than 38°C by any measurement) that is not caused by problems inside the skull. Fever seizures are generally most common between the ages of 6 months to 22 months, with the highest incidence occurring at the age of 18 months (Hasibuan and Dimyati, 2020).

The World Health Organization (WHO) states that children under five years old are 2-5% greater than usual to experience febrile seizures, with the majority of occurrences happening between the ages of 17 and 23 months. There are an estimated 21.65 million children who have a febrile seizure worldwide, an estimated 216,000 children die from fever seizures (Paizer et al., 2023). In Indonesia, 2,772 children between the ages of 6 months and 3 years have febrile seizures, and 832 of these will have repeated febrile seizures (Kemenkes RI, 2019). Besides that, the prevalence of febrile seizures is estimated to be 350–810 cases per 1000 individuals annually, with 80–90% of occurrences occurring in children ages 2–19

in Indonesia (Kurniati et al., 2022). In accordance to the 2021 Bali Provincial Health Profile, fever seizures are reported to be the leading cause of mortality for newborns in Bali between the ages of 29 days and 11 months, with an incidence rate of 15% (Sintyawati et al., 2023). In addition, a total of 108 children aged 0-5 years received treatment for febrile seizures in the Sakura Ward of Buleleng Regency Hospital in 2023, and 60 children between January and June 2024, based on inpatient registration data of Sakura Ward of Buleleng Regency Hospital.

In the world of health, febrile seizures are included in serious diseases that focus on children under five, because there must be appropriate and fast treatment. If febrile seizures are not resolved properly, the child's brain cells will be damaged due to lack of oxygen and even die (Perdana, 2022). To handle febrile seizures properly, a correct understanding of the condition is required, which can be obtained through appropriate learning both formally and informally. Mothers who have a good understanding of the handling of febrile seizures can provide first aid for their children. Meanwhile, mothers who lack understanding of febrile seizures will cause tremendous stress and anxiety, so that some people think that their children can die from febrile seizures. Many mothers cannot overcome febrile seizures due to lack of knowledge, which is 58.1% (Wahyudi et al., 2019).

Health education programs for parents can improve their knowledge in dealing with children who have febrile seizures. Pamphlets with information regarding febrile seizures in children can be used to educate people about health issues. It is anticipated that health education about febrile seizures will improve parents' understanding and help them provide the best possible developmental stimulation for children with febrile seizures (Aprilia and Kusnantoro, 2022).

Research conducted by Dewi, et al in 2019 entitled "The Effectiveness of Health Education on Febrile Seizures on Parents' Attitudes in Handling Fever Seizure Emergencies in Children in Banjar Binoh Kelod, Ubung Kaja Village". Furthermore, data analysis using the Wilcoxon Sign Rank Test with a significance level of $\alpha = 0.05$ yielded a p-value of 0.000, demonstrating the effectiveness of health education programs in changing parents' opinions about child febrile seizure emergency management (Dewi et al., 2019).

Leaflets are one of the educational media that is easier to carry around and easier to read. Considering the findings of study by Silviyani et al in 2021, it shows that leaflets are preferred by the public because they are simple and readable and help in understanding something. Mothers of toddlers intend to understand and read again when they are at home or when a seizure occurs in their child. Leaflet media can be obtained easily and effectively used as an information medium (Silviyani et al., 2021).

The interview results with 10 mothers of children under five who received treatment for febrile seizures in the Sakura Ward of Buleleng Regency Hospital, 4 mothers felt panicked and confused in handling the situation when their children had seizures, while 6 mothers immediately took 4 children to health care facilities when febrile seizures occurred.

Providing education using additional media such as leaflets needs to be done to expand the knowledge of parents, especially mothers, about the health of toddlers, especially early treatment of children with febrile seizures. Following to the previously mentioned description, the researcher would like to carry out a study with the title "Differences of Mothers Knowledge in the First Treatment of Febrile Seizures in Children Under Five Before and After Being Educated with Leaflet Media at Sakura Ward of Buleleng Regency Hospital".

Method

This kind of study is pre-experimental and uses a pretest-posttest design with only one group (Nursalam, 2020). From September to October 2024, this study was carried out in Sakura Ward of Buleleng Regency Hospital. Mothers who were admitted to the Sakura Ward of Buleleng Regency Hospital with children who had febrile seizures or previous experiences of febrile seizures were part of the study's

population. The sample was used as many as 32 people using purposive sampling techniques. determined by the researcher (Dahlan, 2016). The inclusion criteria include mothers willing to be research respondents as evidenced by signing informed consent, mothers with children aged 1-5 years, mothers who have children with febrile seizures or a history of febrile seizures who are hospitalized, and mothers who can read and write. Meanwhile, the exclusion criteria are mothers with children accompanied by congenital diseases or complications.

In this study, health education using leaflet media is the independent variable, while mothers' knowledge regarding the first treatment of febrile seizures in children under five is the dependent variable. Data were collected using a questionnaire assessing maternal knowledge about first aid for febrile seizures in toddlers. The level of knowledge was categorized into three groups: good if the respondents answered 76–100% of the questions correctly, moderate if 56–75% were correct, and poor if less than 56% were correct (Arikunto, 2016).

In this study, univariate analysis was used to describe the respondents' characteristics, and bivariate analysis using the paired t-test was employed to determine whether maternal knowledge regarding the first treatment of children under five with febrile seizures differed before and after receiving health education through leaflet media in the Sakura Ward of Buleleng Regency Hospital. The mothers' knowledge was assessed using a questionnaire consisting of 20 questions with a total possible score of 0–100. Knowledge levels were categorized as good (76–100), moderate (56–75), and poor (<56). In addition, the study received ethical clearance from the Health Research Ethics Committee of Buleleng Regency Hospital under number 043/EC/KEPK-RSB/X/2024..

Result and Discussion

Table 1. Frequency Distribution of Respondent Characteristics

Variable	n = 32	
	f	%
Age		
<= 20 years	1	3.1
21-30 years	18	56.3
31-40 years	10	31.3
> 40 years	3	9.4
Education		
Elementary	7	21.9
Junior High School	7	21.9
Senior High School	11	34.4
College	7	21.9
Work		
Not Working	20	62.5
Self Employed	12	37.5
Child's Ages		
1 years	15	46.9
2 years	5	15.6
3 years	5	15.6
4 years	3	9.4
5 years	4	12.5
Child's Gender		

Male	2268.8
Female	10 31.3

As shown in Table 1, the majority of mothers were between the ages of 21 and 30 (56.3%), had completed high school (34.4%), were unemployed (62.5%), had children under the age of one (46.9%), and had male children (68.8%).

Table 2. Mother's Knowledge in the First Treatment of Fever Seizures Before Being Educated with Leaflet Media

Knowledge Level	Frequency	Persentase (%)
Enough	3	9.4
Less	29	90.6
Total	32	100.0

As shown in Table 2, the majority of respondents (90.6%) had a low level of knowledge.

Table 3. Mother's Knowledge in the First Treatment of Fever Seizures After Being Educated with Leaflet Media

Knowledge Level	Frequency	Persentase (%)
Good	30	93.8
Enough	2	6.3
Total	32	100.0

Table 3 shows the majority of respondents (93.8%) had a good degree of knowledge.

Table 4. Differences in Maternal Knowledge in the First Treatment of Fever Seizures Before and After Education With Media Leaflet

	N	Mean	Median	Min.	Max.	Std. Deviation	p-value
Pre Test	32	36.09	40.00	10	70	16.399	0.000
Post Test	32	87.66	87.50	70	100	7.182	

Table 4 shows that the average score on the pretest is 36.09, and the average score on the posttest is 87.66. The paired t-test was used for the data analysis test, and a p-value of 0.000 was found. When p is less than 0.05, H_a is accepted and H_o is rejected. Thus, it can be said that mothers' awareness of the first treatment of children under five years old with febrile seizures differed in the Sakura Ward of Buleleng Regency Hospital before and after they received education through leaflet medium.

Mother's Knowledge in the First Treatment of Fever Seizures Before Being Educated with Leaflet Media

Mothers' understanding of the first treatment of children under five years old with febrile seizures was largely low (90.6%) prior to receiving education through leaflet media in the Sakura Ward of Buleleng Regency Hospital.

A febrile seizure is a seizure that occurs with fever (body temperature $> 38^{\circ}\text{C}$) without evidence of infection of the central nervous system, which occurs in infants and children between the ages of 6 months and 5 years with normal neurological development (Aprilia and Kusnanto, 2022). More brain cells will be harmed if the child has frequent seizures, which increases the likelihood of paralysis, mental retardation, developmental delays, and epilepsy developing in 2–10% of cases (Hasibuan and Dimiyati, 2020).

When it comes to treating children's febrile seizures at first, the participation of parents, especially mothers, is crucial. To be able to handle febrile seizures properly, knowledge of the first intervention of children with febrile seizures is required. Mothers who are knowledgeable about febrile seizures are more prepared to treat their children. Meanwhile, mothers have a low level of knowledge to panic when their child has a febrile seizure (Aprilia and Kusnanto, 2022).

The findings of a study conducted in 2024 in the Buleleng Regency Hospital's Sakura Ward indicate that the majority of participants know very little about febrile seizures. Researchers argue that the treatment of febrile seizures should be done as early as possible to reduce the risk of complications in febrile seizures. Therefore, it is important for mothers to know how to handle febrile seizures, so it is necessary to educate about febrile seizures.

Mother's Knowledge in the First Treatment of Fever Seizures After Being Educated with Leaflet Media

The majority of mothers (93.8%) had a satisfactory level of awareness on the first treatment of children under five years old with febrile seizures after receiving education through leaflet media in the Sakura Ward of Buleleng Regency Hospital.

Knowledge comes from the process of sensing carried out by humans or from the individual's understanding of an object through the senses he has (Sulaeman, 2016). Knowledge is the result of knowing, and this occurs after a person makes observations of a certain object through its sensing. Most human knowledge is acquired through sight and hearing (Notoatmodjo, 2018).

Knowledge typically comes from a variety of sources, including the instruction manuals, mass media, posters, medical professionals, electronic media, close family members, media, and other sources. A person's behavior can be influenced by their views, which are formed by their knowledge (Aprilia and Kusnanto, 2022). Leaflets is one of the media Delivery of health information through folded sheets. The material can be presented in text, images, or a combination of both (Paramitha et al., 2021).

This study supports a 2019 study by Pebrisundari entitled "The Influence of Health Education with the Media Leaflets" to the mother's knowledge in the first aid of febrile seizures. According to the findings, the majority of respondents had good knowledge following health education, up to 69.7% of those who had not previously had good knowledge (0%) and just 6.1% of those who had sufficient information (Pebrisundari, 2019).

This education is important to increase mothers' knowledge about the first treatment of children under five with febrile seizures, because so far when children have febrile seizures, mothers panic and immediately take them to health services without taking any action. The lack of information sources will make mothers less understanding in handling febrile seizures. So that by providing education and leaflets, it is hoped that mothers can understand about febrile seizures.

Differences of Mothers' Knowledge in The First Treatment of Febrile Seizures in Children Under Five Before and After Being Educated with Leaflet Media

The average knowledge score prior to receiving education was 36.09, and the average knowledge score following education was 87.66, according to the study's findings. The study's findings, which were analyzed using the Paired T-Test statistical test, showed that $p = 0.000$. Since p is less than 0.05, H_a is accepted and H_0 is rejected. Therefore, it can be said that the mother's understanding of how to treat febrile seizures in children under five years old before and after receiving leaflet media education in the Sakura Ward at Buleleng Regency Hospital differs.

The mother's knowledge and attitude are strongly linked to the prevention of recurring febrile seizures, which is one of the elements that contribute to the success rate of lowering cases of febrile seizures. Prevention of febrile seizures must be carried out appropriately and accurately to overcome the impact of these febrile seizures such as epilepsy and death. The prevention of febrile seizures in children

depends on parents' understanding and awareness of the condition. Children's risk of repeated seizures will be decreased if parents, particularly mothers, are informed about febrile seizures (Aprilia and Kusnantoro, 2022). Education or health education is a deliberate attempt to influence others, whether individuals, groups, or communities, to do what is expected of an education professional (Paramitha et al., 2021).

According to Rezeki and Dewi's 2022 study, "Health Counseling Using Leaflet Media in the Prevention of Febrile Seizures in Toddlers in Karang Timur Village", this study aligns with their findings. The results of the case study showed a percentage of increased knowledge in the family of subject I by 39% and the family of subject II by 37%. In accordance with the case study's findings, family awareness can be raised by implementing health counseling through media leaflets about toddler febrile seizures. It is also hoped that more inventive and creative media will be used to make health counseling on toddler febrile seizure prevention more effective and efficient (Rezeki and Dewi, 2022).

Conclusion

In line with the findings of this study involving 32 participants, mothers' understanding of first aid for febrile seizures in children under five differed significantly before and after receiving health education through leaflet media in the Sakura Ward of Buleleng Regency Hospital. The practical implication of these findings is that healthcare professionals are encouraged to use leaflet media as an educational tool because it is simple, clear, and cost-effective, allowing information on febrile seizure prevention and management to be delivered efficiently to the community. For the public, especially mothers, it is recommended to actively read and apply the information contained in the leaflet to provide prompt and appropriate first aid if a child experiences a febrile seizure at home or in the surrounding environment. Future research is recommended to compare the effectiveness of leaflet-based education with digital or audiovisual educational media to determine which method produces better learning outcomes and knowledge retention among parents.

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