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Research Article

Effectiveness of Health Education Through Video and Leaflet Media on the Level of Knowledge of Mothers about the Prevention of Dengue Fever in Toddlers

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Abstract

Aims: According to WHO, 3.9 billion people in 128 countries are at risk of contracting the dengue virus. It is predicted that there are 100 million cases of dengue fever in Southeast Asia, with 500,000 cases requiring hospitalization. According to WHO, Indonesia has the greatest number of DHF cases in Southeast Asia, with 52,313 cases reported since early 2022 and 448 deaths.
Objective: Understanding the impact of health education by video media and booklets on mothers' knowledge of preventing dengue hemorrhagic fever in toddlers.
Methods: A quasi-experimental one-group pretest-posttest design was used. This study included up to 40 moms of toddlers whose children were treated at the Cilandak Jakarta Marine Hospital in October-November 2022. Total sampling is the sampling technique used.
Results: Prior to receiving health education, the majority of respondents had sufficient knowledge (37.8) and subsequently had good knowledge (73.0). There is an effect of health education by video media and booklets on the degree of awareness of mothers on preventing dengue hemorrhagic fever in toddlers (p.value 0.000).
Conclusions and Suggestions: There is evidence that health education through video media and brochures improves mothers' awareness of preventing dengue hemorrhagic fever in toddlers. To combat the spread of dengue fever, it is hoped that they would always live a clean and healthy life by doing 3M in each dwelling.

Keywords:
health education, knowledge, dengue fever, prevention

INTRODUCTION

The Aedes aegypti mosquito is a major vector for the dengue virus, which causes a potentially fatal disease known as dengue hemorrhagic fever (DHF) or dengue haemorrhagic fever (DHF). The World Health Organization (1) reports that DHF has been much more common during the past few decades. Many DHF cases are misclassified and it is unclear how many actual instances there are. A recent estimate places the annual number of DHF infections at 390 million. Populations in metropolitan areas in tropical and subtropical nations are particularly vulnerable to dengue virus infection. This includes an estimated 3.9 billion people across 128 countries.

According to the World Health Organization, the regions with the highest prevalence of DHF are currently Latin America, Southeast Asia, and the Western Pacific. There are an estimated 100 million cases of dengue fever (DD) and 500,000 cases of DHF that require hospitalization; 90% of those affected are

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children younger than 15; the annual death toll from DHF reaches 5%; and 25,000 people lose their lives to the disease. Indonesia has the greatest number of dengue fever cases in Southeast Asia, according to WHO data. Cases of DHF are on the rise across the country. There have been 52,313 confirmed cases of dengue hemorrhagic fever in Indonesia since the beginning of 2022, according to the Ministry of Health. According to this information, 451 municipalities/districts in 34 states recorded 448 deaths (2).

Provinces that reported the most DHF cases in early 2022 were East Java, 1,788 cases and 25 deaths, West Java, 1,715 cases and 19 deaths, East Nusa Tenggara, 805 cases and 8 deaths and DKI Jakarta, 354 cases and 0 deaths (Pranita, 2022). Based on medical records, the number of DHF patients treated at the Cilandak Marine Hospital in the last three years shows an increase in DHF cases, namely in 2019 there were 598 people, with cases under five of them 98 people (16.39%), in 2020 there were 679 people, with 112 under-five cases (16.49%), while in 2021 there will be 710 cases, with 120 under-five cases (16.90%). From 2019 to 2021 there is an increase of 0.51% in toddler patients suffering from DHF (3).

The increase in DHF cases every year is caused by changes in weather from dry to rainy season. Apart from that, sanitation in the environment where residents live is also considered to be unclean, thus triggering the breeding of mosquito larvae. Lack of public knowledge about clean and healthy living behavior (PHBS), so that it can be illustrated that people's behavior pays little attention to environmental cleanliness and has not taken precautions by controlling the Aedes aegypti mosquito vector (4).

Dengue fever in toddlers that is not treated can cause serious complications, such as dengue shock syndrome (DSS). This condition is characterized by decreased blood pressure, wet and cold skin, irregular breathing, dry mouth, weak pulse, decreased amount of urine. In this condition, blood flow to all body tissues will decrease resulting in a lack of oxygen (hypoxia). This can cause seizures, damage to the liver, heart, brain and lungs, blood clots, and even death (5). Death in toddlers with dengue fever occurs due to shock. Incidence of shock occurs due to the occurrence of plasma leakage so that

Children aged under five have more activities at home with their families, which allows toddlers to experience mosquito bites in their home environment so that this case may recur if prevention is not carried out by increasing mother's knowledge on how to live a healthy life so that DHF cases do not recur in their toddlers. The degree of health, especially family health, is largely determined by the mother's healthy lifestyle. Therefore prevention of dengue fever in children is very dependent on the role of parents, especially mothers . Mothers are an integral part of household management which with her tenderness is needed to take care of children skillfully so that they grow healthily. Mothers who have knowledge about dengue fever and have good behavior in providing prevention can improve the health status of their children(6,7).

One of the efforts that can be made by the family/parents of toddlers to prevent DHF cases from recurring is by keeping the house and environment clean from mosquitoes which usually nest in stagnant water, used items such as cans and buckets filled with water, bathtubs, and storage containers. - Other water reservoirs. In addition, mosquitoes also like dark and dirty places such as warehouses and corners of rooms that are rarely cleaned, clothes that are hung behind doors, outside cupboards so that many mosquitoes nest. Therefore, the cleanliness of the house must be maintained, so that mosquitoes do not nest in the house and yard (Nareza, 2021).

Data obtained from the medical records of the Cilandak Marine Hospital, Jakarta, throughout 2022 from January to September 2022, there were 727 DHF patients, with 123 toddler cases (16.92%). In 2021 there were 16.90% of cases of toddlers experiencing

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DHF, so it can be concluded that in 2022 there will be an increase in cases of DHF in toddlers of 0.02%.

Based on a preliminary study conducted by researchers regarding DHF prevention knowledge in the Children's Room at Marine Hospital Cilandak Jakarta through interviews with 10 mothers, it was found that 5 people (50%) already understood DHF prevention in general and 5 people (50%) did not understand how to prevent DHF. prevention of DHF in general. In addition, even though the mother already understands in general about DHF prevention, some mothers have not implemented it. From the data above, the researcher was interested in conducting a study entitled "Effectiveness of health education through video and leaflet media on the level of mother's knowledge about preventing dengue hemorrhagic fever in toddlers at Cilandak Marine Hospital, Jakarta in 2022".

METHODS

This study used a quasi-experimental approach based on a one-group pre- and post-test structure. Primary data, or data directly collected through observations, was used for this study's data gathering. A questionnaire was utilized to obtain the information. Forty mothers whose toddlers were patients at the Cilandak Jakarta Marine Hospital in the months of October and November 2022 comprised the study's sample. Total sampling is being used. The analytical method employed is univariate analysis and bivariate analysis with the Paired Samples Test .

RESULTS

Table 1. Frequency Distribution of Respondents' Knowledge Prior to Being Given Health Education Through Video Media and Leaflets

No	Knowledge	Before		After	
		Frequency	Percentage	Frequency	Percentage
1.	Good	12	32,4	27	73,0
2.	Enough	14	37,8	10	27,0
3.	Not Enough	11	29,7	0	0,0
	Total	**37**	**100,0**	**37**	**100,0**

According to the table above, the majority of the 37 respondents prior to receiving health education through video media and leaflets had sufficient knowledge, as many as 14 people (37.8%), good knowledge, as many as 12 people (32.4%), and less knowledge, as many as 11 people. (29.7%). The majority of the 37 respondents who received health education via video media and booklets had high knowledge, 27 individuals (73.0%) had sufficient knowledge, and 10 people (27.0%) had less understanding (0%).

Table 2. Kolmogorov-Smirnova and Shapiro-Wilk Normality Test Results

Variable	Measurement	Kolmogorov-Smirnov[a]	Shapiro-Wilk	information
Blood sugar levels	Pre test	0,166	0,172	Normal
	Post test	0,090	0,055	Normal

The normality test on knowledge, both pre-test and post-test on the Kolmogorov-Smirnova test, revealed that the pre-test value was p = 0.166 (p > 0.05) and the post-test value was p = 0.090 (p

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> 0.05), according to the table. The pre test value in the Shapiro-Wilk test was p = 0.172 (p > 0.05), and the post test value was p = 0.055 (p > 0.05). The sig numbers are used to determine whether the data is normal or not; if sig > 0.05, the data is considered normal; if sig 0.05, the data is considered abnormal. The above data is regularly distributed, according to the results of the Kolmogorov-Smirnova and Shapiro-Wilk tests.

Table 3. The Effectiveness of Health Education Through Video and Leaflet Media on the Level of Mother's Knowledge About Prevention of Dengue Hemorrhagic Fever in Toddlers

Variable	Konwledge Category	Frequency		Mean		SD		*P value*
		Pre	Post	Pre	Post	Pre	Post	
Knowledge	Good	12	27	66,49	83,57	16,107	11,164	0,000
	Enough	14	10					
	Not Enough	11	0					

According to the table above, most of the 37 respondents had sufficient knowledge about DHF prevention as many as 14 people before being given health education through video media and leaflets, and most of them had good knowledge about DHF as many as 27 people after being given health education through video media and leaflets. Mothers' average level of knowledge before receiving health education via video media and leaflets was 66.49, with a standard deviation of 16.107, and their average level of knowledge after receiving health education via video media and leaflets was 83.57, with a standard deviation of 11.164. Because there was a significant difference in the level of mother's knowledge before and after being given health education through video and leaflet media, with a p value of 0.000, it can be concluded that there was an increase in mother's knowledge about DHF after being given health education through video and leaflet media. In other words, health education using video media and booklets can significantly improve mothers' understanding of DHF prevention.

DISCUSSION

Distribution of Mother's Knowledge Frequency before and after being given health education through video media and leaflets

The study found that after receiving health education through video media and booklets, 14 of the 37 respondents (37.8%) had sufficient knowledge, 12 (32%) had strong knowledge, and 11 (29.2%) had less than adequate information. The majority of the 37 respondents who were exposed to health education via video media and booklets were well-informed; 27 people (73.0%) had enough knowledge, whereas 10 people (27.0%) had less than zero information.

Knowledge, according to (8) thesis, follows from humans' "knowing" of a given item through their senses. The human sensory system consists of the eyes, ears, nose, tongue, and skin, all of which contribute to the sensing process. The formulation of one's actions (over behavior) relies heavily on one's level of knowledge or cognitive capacity. Consistent with (9) findings, which also found that participants learned more about how to prevent DHF both before and after receiving counseling, our findings suggest that education about this topic is effective. According to the findings of a study carried out at Jakarta's Cilandak Marine Hospital, mothers' knowledge of how to prevent DHF has increased after receiving health education in the form of video media and leaflets. Specifically, while 73.0% of mothers had adequate knowledge before receiving this education, this number

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dropped to 37.8% after receiving it. To achieve this goal, it is necessary for people with less knowledge to get enough to be good, and for those with enough to be well knowledgeable. This study's findings highlight the need for health education and information provision, particularly in the area of DHF (10,11).

The Effectiveness of Health Education Through Video and Leaflet Media on the Level of Mother's Knowledge About Prevention of Dengue Hemorrhagic Fever in Toddlers

This study found that after receiving health education through video media and leaflets, a majority of respondents (27 of the total 37) had a good understanding of DHF, while 14 of the original 37 had only a basic understanding of the disease before receiving the education. Before receiving health education through video media and leaflets, mothers scored an average of 66.49 on a 100-point scale with a standard deviation of 16.107; after receiving health education, mothers scored an average of 83.57 with a standard deviation of 11.164. Since there was a statistically significant difference in the level of mother's knowledge before and after receiving health education via video and leaflet media, with a p value of 0.000, it can be concluded that there was an increase in mother's knowledge about DHF after receiving health education via video and leaflet media. So, health education, such as videos and pamphlets, can help mothers learn more about DHF and how to prevent it. Video is a moving picture, captured frame by frame and mechanically projected through a lens to create the illusion of movement on a screen. The use of video in education has been shown to improve both retention and recall (12,13). Writing printed on sheets that are folded but not sewed together constitutes leaflet medium. The visual appeal of leaflets is achieved through careful design, the inclusion of accompanying graphics, and the employment of clear, unambiguous wording. Leaflet media consists of a single sheet of paper with text and accompanying images that are both brief and straightforward. Consistent with (12), which found differences in respondents' knowledge and attitudes before and after receiving counseling, the current study's findings suggest that counseling delivered via the lecture method has the potential to increase respondents' knowledge and attitudes toward DHF prevention (p 0.001).

Researchers at the Cilandak Marine Hospital concluded that the recipients' levels of health knowledge changed as a result of receiving health education via video media and brochures. A difference of 17.08 points was identified between the average knowledge before and after receiving health education through video media and booklets. This suggests that the average value of knowledge before and after receiving health education through video media and booklets increased by 66.49. The average worth of knowledge gained was 83.57 with the use of video media and booklets. This demonstrates that the supplied health education is effective in raising awareness. Respondents' health education and information were effective in increasing their knowledge of DHF prevention, which will help mothers of toddlers in particular and the community as a whole prevent DHF from occurring and toddlers avoid it.

CONCLUSION

After receiving health education in the form of video media and booklets, 37 of the participants in the study already had sufficient knowledge about DHF prevention. Most participants had good knowledge after obtaining health education, and 27 had sufficient understanding. The results of this study are consistent with those of (12) study, which found that participants learned more about DHF prevention both before and after receiving counseling. After receiving health education using video and leaflet media, mothers in a study done at Jakarta's Cilandak Marine Hospital reported an

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increase in their awareness of DHF prevention. The results of the study indicate that women and the community can benefit from health education and information in their efforts to reduce the occurrence of DHF. After receiving health education, the majority of respondents improved from having a sufficient level of knowledge (37.2) to having a good level of knowledge (73.0). Health education through video media and pamphlets is beneficial in increasing mothers' awareness of how to protect their toddlers from contracting dengue hemorrhagic fever (p0.0001).

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