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Mosquito Nest Eradication Behavior to Prevention Dengue Hemorhagic Fever

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ABSTRACT

Dengue Hemorrhagic Fever (DHF) is a tropical disease that is influenced by the interaction of 3 factors, namely host factors, spreaders, and causes of the disease, prevention of DHF. Prevention of this disease can be done by increasing the behavior of Mosquito Nests Eradication 3M Plus. Community behavior in eradicating DHF disease vectors is very necessary to reduce the prevalence of DHF. This study aims to identify family behavior in mosquito nests eradication activities. This study uses a descriptive design with a population of all patients in the internal medicine room who are hospitalized at Santa Elisabeth Hospital, Medan. The sampling technique used purposive sampling with the inclusion criteria of families who live in the same house and accompany patients during hospitalization at Santa Elisabeth Hospital, Medan in April 2023 as many as 92 people. The instrument used in this study was the mosquito nests eradication behavioral questionnaire. The results showed that respondents who had good behavior were 90.2% of respondents, while 9.8% of respondents showed bad behavior. It is recommended for all patients of Santa Elisabeth Hospital Medan to always implement mosquito nests eradication to prevent DHF.

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1. Introduction

Dengue fever (DHF) is one of the public health problems in Indonesia, the incidence of sufferers continues to increase and its transmission is increasingly widespread, especially among children and often causes extraordinary events and even death due to late treatment (Periatama, Lestari & Prasida 2022). DHF is caused by the dengue virus that infects the human body and is transmitted by mosquitoes from the Aedes genus, namely Aedes aegypti or Aedes albopictus. DHF is characterized by a fever of 2-7 days with a temperature of 390C, headache, back pain to pain in the epigastrium. Meanwhile, in children it is usually characterized by vomiting, painful bones or muscles, accompanied by bleeding, a decrease in the number of platelets to ≥20% of normal values (Hendayani, Faturahman & Aisyah 2022; Soegijanto, 2006).

A surge in the number of dengue cases reported in 2019 was observed in most countries in Asia and Southeast Asia, including Afghanistan, Bangladesh, Cambodia, Lao People's Democratic Republic (Laos), Malaysia, Maldives, Philippines, Singapore, Sri Lanka, Taiwan and Thailand. Record numbers were reported in the Philippines (420,453 cases, 1,565 deaths), Malaysia (127,407 cases, 176 deaths) and Bangladesh (101,354 cases, 164 deaths). DHF outbreaks occurred in Laos and Thailand with 38,753 cases

and 70 deaths in Laos (WHO, 2020) and 98,741 dengue cases and 106 deaths in Thailand (Rahman.,dkk 2021).

The prevalence of DHF cases in Indonesia in 2019 was recorded at 138,127 cases of dengue fever (DHF) and the number of deaths was 919 people. This number increased compared to 2018, which was 65,602 cases of illness and the number of deaths reached 467 people. Central Java is in 2nd place with 92 cases of death (Hendayani, Faturahman & Aisyah, 2022; Siswanto & Usnawati, 2019).

Health profile of North Sumatra province in 2019, DHF cases totaled 7,584 cases with 37 deaths, there was an increase in the number of cases compared to 2018, DHF cases totaled 5,786 cases, with 26 deaths. This number decreased from the previous year, namely in 2017, there were 5,454 cases and 28 deaths. In 2016, there were 8,715 cases, an increase compared to 2017. And in 2015, there were 5,695 cases. Case Fatality Rate (CFR) in 2019 was 0.5%. North Sumatra Province has 10 districts or cities with the highest DHF cases in 2018, including Medan 1,490, Deli Serdang with 997 cases, Langkat 616 cases, Simalungun 445 cases, Binjai 321 cases, Tebing Tinggi 298 cases, Pematang Siantar 188 cases, Serdang Bedagai 183 cases, Gunung Sitoli 145 cases and Dairi 142 cases (North Sumatra Health Office, 2018). As the district with the second highest number of cases, Deli Serdang Regency also has a very high DHF IR, reaching 60.4% in 2019 (Dinkes Kabupaten Deli Serdang, 2020; Nst dkk., 2020).

The high prevalence of DHF shows that the tropical disease prevention program has not shown maximum results. DHF prevention is actually very simple, namely by maintaining the cleanliness of the surrounding environment. The Indonesian government has a special DHF prevention program, namely the mosquito nests eradication. However, the success of this program has not reached the target as evidenced by the still high number of DHF suffered by the community. This government program has shown success in reducing the prevalence of dengue fever. However, community behavior is very supportive of achieving the government program in eradicating DHF. Communities that have a good understanding will take measures to prevent the breeding of mosquitoes that cause dengue fever. Good understanding is influenced by age, education and exposure to the community with theories about DHF and this understanding.

Therefore, researchers aim to identify the behavior of mosquito nests eradication in preventing dengue hemorrhagic fever in families of patients treated at the Santa Elisabeth Hospital in Medan.

2. Methods

This research is descriptive in nature with the population in this study being all patients in the internal medicine ward at Santa Elisabeth Hospital Medan in 2023 totaling 1100 people. The researcher used a purposive sampling technique by considering the limited time of the research (the time for collecting data from respondents was one month) and the season when the research was carried out was the dry season so that the prevalence of DHF was not too high. The inclusion criteria of families who live in the same house and accompany patients during hospitalization in the internal medicine ward of Santa Elisabeth Hospital Medan in April 2023 totaling 92 respondents. After obtaining research permission from the director of Santa Elisabeth Hospital Medan, the researcher met the respondents directly explaining the objectives, benefits and procedures of the research then asked for the respondents' willingness by providing informed consent to each respondent. After the respondents agreed, the respondents filled in the demographic data, Mosquito nests eradication behavioral questionnaire. After all statements were answered, the researcher collected the respondents' answer sheets again and thanked them for their willingness to be respondents.

The questionnaire data was collected and analyzed, then the data obtained with the help of a computer with three stages. The first stage is Editing, namely, checking the accuracy of the data and ensuring that the desired data can be met, the second stage is Cooding, namely this step the research changes the respondent's answers into a number form related to the research variables to facilitate data processing, the third stage is Scoring, namely this step the researcher calculates the score obtained by each respondent based on the answers to the questions asked by the researcher, the fourth stage is Tabulating, entering the calculation results into a table to see the percentage of data processing answers, and the fifth data analysis is carried out on the questionnaire. This research is a descriptive

study so that no statistical test is carried out for data analysis. The results of the study are presented in the form of a frequency distribution table processed using a computer.

3. Results and Discussion

Result

The results of the study showed that out of 92 people, the average age of respondents was 46.84 years with a standard deviation of 15.149 and a median of 45.50. This is in line with Harwiati dan Effendy (2022), that the youngest age was 19 years and the oldest age was 86 years, female gender with a total of 50 respondents (54.3%), and male gender with a total of 42 respondents (45.7%).

Table 1.
Frequency Distribution of Mosquito nests eradication Behavior in Patients at Santa Elisabeth Hospital Medan

Behavior	(*f*)	(%)
Not Good	9	9.8
Good	83	90.2
Total	92	100.0

Table 1 shows that from 92 respondents, the data obtained showed that the majority of respondents had good behavior regarding Mosquito nests eradication, namely 83 people (90.2%) and the minority of respondents had bad behavior, namely 9 people (9.8%).

Discussion

Based on the results of the Mosquito nests eradication Behavior study on patients at RS. Santa Elisabeth Medan, it was obtained that 85.9% of respondents had good behavior regarding Mosquito nests eradication and 14.1% of respondents had bad behavior regarding Mosquito nests eradication. Respondents have Mosquito nests eradication behavior in the good category because after analyzing 3 behavioral domains, the results showed that 74% of respondents had good cognitive, 90% had good attitudes and 66% had good actions. This can be associated with the age category of respondents who are in late adulthood (25%) and on average are already married. Late adulthood makes it easy for someone to adapt to the environment and accept new knowledge so that there is concern for environmental cleanliness. This age also has the task of family development to educate and care for the family so that they try to implement clean and healthy living habits to protect themselves and their families from contracting DHF.

This is evidenced by the results of the respondents' actions who never hang clothes in the room, namely 76 respondents (82.6%), then some respondents also always close the water reservoir tightly, namely 73 respondents (79.3%), then most respondents also use mosquito nets and mosquito repellent when sleeping, namely 53 respondents (57.6%), most respondents also always apply 3M, namely 79 respondents (85.9), then some respondents also always participate in mutual cooperation with residents to clean the environment, namely 74 (80.4), and respondents also always close the vents and doors with mosquito wire to prevent the breeding of aedes aegypti mosquitoes, namely 81 people (88.%). Because respondents do these practices, the researcher is of the opinion that when someone does these activities, it will prevent respondents from getting DHF. This is supported by Listyarini & Rosiyanti (2021), who stated that family behavior regarding the prevention of DHF (Dengue Hemorrhagic Fever) in Ngemplak Village, Undaan District, Kudus Regency has effective behavior.

The results of the researcher's observations of 5 respondents who experienced DHF, namely 5 respondents had good knowledge and attitudes, with 72% of the correct knowledge score and the correct attitude score of 69%. However, knowledge and attitudes are in contrast to the actions/practices of respondents towards the mosquito nests eradication behavior where the correct number of results was obtained with a score of 38%. From these results, it can be concluded that someone who has good knowledge and attitudes does not necessarily have good actions/practices, so the majority of respondents who have poor practice values are the cause of respondents experiencing DHF (Wardoyo, Putri, & Duarsa, 2021).

Similar to what was conveyed by Binsasi et al. (2021) in their research conducted at the Kefamenanu Regional Hospital entitled Analysis of the Model of the Spread of Dengue Hemorrhagic Fever in Kefamenanu City, it was stated that the increasing cases of DHF in North Central Timor Regency were due to the lack of public awareness of the importance of environmental cleanliness around their homes, where there are still puddles of water which are a good place for mosquito larvae to live. Sumaryati, Rosmiaty, and Wasilah (2019), Sinta (2018), and Zurriyani & Mardalena, E. (2021) stated the same thing that public awareness and understanding are needed in terms of knowledge and attitudes which are expected to improve community skills in preventing DHF.

In addition to knowledge, attitudes and actions, there are other factors that cause DHF, namely weather factors where high rainfall causes the air temperature to become humid and many water containers filled with rainwater, this causes the Aedes mosquito to breed faster so that the weather factor is one of the factors that causes DHF (Yushananta, Setiawan, & Tugiyono, T. 2020). The same is true for Nur Latifah et al., (2021) with their journal entitled Analysis of Weather Factors with the Incidence of Dengue Hemorrhagic Fever (DHF) in Wonogiri Regency in 2014-2018 which states that Weather Factors (rainfall and temperature) with the incidence of DHF where Rainfall causes the breeding ground for Aedes mosquitoes to increase which ultimately affects the increase in the mosquito population. Temperature affects the number of eggs produced by Aedes mosquitoes so that the density of adult mosquitoes increases. This statement is supported by Priwahyuni dan Ropita (2014) with their research entitled Community Behavior regarding Draining, Covering, Burying (3M) Plus towards Being Free of Larvae which states that there is a relationship between community knowledge about 3M Plus towards being free of larvae (p value = 0.005), community attitudes about 3M Plus towards being free of larvae (p value = 0.002) and there is no relationship between community actions regarding 3M Plus towards being free of larvae (p value = 0.053).

4. Conclusion

Mosquito Nest Eradication Behavior in Patients at Santa Elisabeth Hospital Medan In 2023, from 92 respondents, data was obtained that 90.2% of respondents had good behavior regarding Mosquito Nest Eradication and 9.8% of respondents had bad behavior regarding Mosquito Nest Eradication. The intended mosquito nest eradication behavior is by covering, burying, draining, avoiding mosquito bites, sleeping using mosquito nets and using mosquito repellent. The behavior to carry out Mosquito nests eradication actions cannot be separated from the large amount of information obtained both visually and audibly, so counseling is needed so that they can understand Mosquito nests eradication well. With counseling, it is hoped that the level of public knowledge will increase and they will want to carry out Mosquito nests eradication so that the incidence of DHF will decrease. Education can be carried out cross-sectorally, health workers by involving village governments to mobilize the community in implementing mosquito nest eradication behavior.

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