

Overview Of Visitors' Knowledge About Dengue Fever (Dhf) Prevention Efforts: A Study At Dr. Iskak Tulungagung Regional Hospital

Riza Yuliawati¹, Amarin Yudhana², Candra Jaya³, Adevia Salma⁴, Alviyah Musayadah⁵, Dominggus Mon⁶, Ernesta Tamo Ina⁷, Muhammad Fikri Haikal⁸, Indriani Setiyowati⁹

Public Health Study Program, Universitas STRADA Indonesia

*Corresponding author: rizayuliawati@strada.ac.id

ABSTRACT

Dengue Hemorrhagic Fever (DHF) remains a significant public health problem in Indonesia. It is caused by the dengue virus transmitted through *Aedes aegypti* and *Aedes albopictus* mosquito bites. Based on data from Dr. Iskak General Hospital Tulungagung, DHF ranks as the third leading cause of hospitalization, indicating low public awareness regarding prevention. This research used a quantitative descriptive survey design involving 25 respondents, consisting of 12 males and 13 females. Data were collected through observation, interviews, and questionnaires containing 10 positive and negative statements using a three-point Likert scale. The data were analyzed descriptively to determine frequency and percentage distributions of knowledge levels regarding DHF prevention. The results showed that 72% of respondents had good knowledge, 20% had fair knowledge, and 8% had poor knowledge, with an average score of 27.8 out of 30. Most respondents understood the causes, transmission, and preventive measures of DHF, including the 3M Plus movement. Factors such as age, education, and exposure to health education activities influenced knowledge levels. These findings support previous studies stating that health education significantly improves community awareness and preventive behavior. Health education and survey activities effectively enhance public knowledge about DHF prevention. Continuous education and interactive communication media are recommended to improve community awareness and reduce DHF incidence.

Keywords: Dengue Hemorrhagic Fever, Health Education, Public Knowledge, Prevention

INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is an infectious disease that remains a public health problem in Indonesia. This disease is caused by the dengue virus, which is transmitted through the bite of the *Aedes aegypti* and *Aedes albopictus* mosquitoes. The dengue virus belongs to the Flavivirus genus and has four serotypes: DEN-1, DEN-2, DEN-3, and DEN-4. To date, DHF remains a leading cause of hospitalizations in various hospitals in Indonesia.

Based on data obtained from Dr. Iskak Tulungagung Regional General Hospital (RSUD), dengue fever ranks third among hospitalizations. This indicates that dengue fever cases in the Tulungagung region remain quite high and require serious attention, particularly in prevention efforts and increasing public awareness of the disease.

According to data from the Ministry of Health of the Republic of Indonesia (2023), more than 114,000 cases of dengue fever have been recorded in Indonesia, with a death toll of 894. These figures indicate that despite various mosquito nest eradication (PSN) programs, dengue fever remains a serious threat, especially in tropical areas like East Java. This disease can affect all age groups and can progress to a serious condition if not treated promptly and appropriately.

Dengue Hemorrhagic Fever (DHF) is one of the diseases that contributes to the death rate to date. This can be caused by a lack of knowledge and attitudes so that community behavior is not optimal in carrying out Mosquito Nest Eradication (PSN). PSN is a government program in the form of activities to eradicate eggs, larvae, and pupae of *Aedes Aegypti* mosquitoes in their breeding places. PSN is a vector control method as an effort made to prevent the transmission of DHF. If PSN is implemented by the entire community, the *Aedes Aegypti* mosquito can be prevented from breeding. Therefore, DHF is very dependent on controlling its vector, namely the *Aedes Aegypti* mosquito.

Likewise, if the entire community does not implement the National Population and Disaster Mitigation (PSN), it will increase the risk of dengue fever cases. To achieve the desired results, these PSN activities must be carried out widely and continuously. The targets are all mosquito breeding sites, such as water reservoirs for daily needs, natural water reservoirs, and yards (Espiana 2020).

Several factors that influence the incidence of dengue fever are nutritional status, age, presence of vectors, domicile, environment, breeding place, resting place, habit of hanging clothes, temperature, use of mosquito repellent, occupation, knowledge and attitude, and 3M practices. Due to the absence of clear specifications regarding the treatment of dengue fever, efforts are urgently needed to control the risk factors causing the occurrence of dengue fever in children to reduce morbidity and mortality.⁷ The 3M mosquito nest eradication (PSN) method is recommended by the government and needs to be implemented throughout the year, especially during the rainy season (Tansil, Rampengan, and Wilar 2021).

Dengue fever has not yet been fully controlled. Morbidity rates fluctuate, accompanied by sporadic outbreaks. Several studies have shown that the incidence of dengue fever is strongly influenced by environmental factors. Some have suggested a significant relationship between physical environmental factors, such as air temperature, humidity, rainfall, and water reservoirs, and dengue fever incidence. Environmental factors are also related to the presence of *Aedes aegypti* mosquito larvae. The presence of *Aedes aegypti* larvae in an area can serve as a warning of the spread of dengue fever. Other physical environmental factors that influence the distribution of *Aedes* sp. include altitude, air temperature, and locations with large amounts of standing water. Air temperature is one environmental factor that influences the development of *Aedes aegypti* mosquito larvae. The average optimum temperature for mosquito growth is 25–27°C, and mosquito growth will cease completely if the temperature is below 10°C or above 40°C (Izza and Mulasari 2023).

Platelets are a component of human blood, along with red blood cells (erythrocytes), white blood cells (leukocytes), and blood plasma. Platelets primarily prevent bleeding by forming blood clots. This blockage stops blood flow through blood vessels. The platelet count in humans generally ranges from 150,000 to 400,000 per microliter of blood. Both excess and deficiency of platelets can lead to health risks related to bleeding. Dengue fever is closely

associated with a decrease in platelet count. Thrombocytopenia is the medical term for a lower-than-normal platelet count. Thrombocytopenia is a common occurrence in patients with dengue fever infections. Platelet levels can be categorized based on risk: low (around 100,000 per microliter), moderate (40,000-100,000 per microliter), and high (below 40,000 per microliter).

Dengue fever lowers platelet counts by infecting platelets when a mosquito carrying the virus bites a human. The virus replicates, causing the multiplication of infectious virus. Infected platelet cells can destroy normal platelets, resulting in a decrease in platelet count. Disease-fighting cells spontaneously trigger the body's innate immune response to fight the dengue virus. These cells destroy healthy platelets, assuming they are foreign. The dengue virus suppresses the bone marrow, causing a decrease in platelet count because the bone marrow is responsible for producing all blood cells, including platelets. Therefore, the purpose of this article is to review and empirically discuss articles regarding platelet levels in cell injury in dengue patients (Ridwan et al. 2024).

To date, no specific cure for dengue fever has been discovered, and the dengue vaccine is not yet fully effective and widely used. Therefore, prevention is the most crucial aspect in reducing the incidence of dengue fever. Prevention can be achieved by improving clean and healthy living behaviors (PHBS), implementing the 3M Plus movement (draining, covering, and recycling used goods), and providing health education to the public to enhance their knowledge and awareness of the risks of this disease (Kaswulandari 2024).

Based on this background, students from Strada Indonesia University in Kediri conducted a survey to assess respondents' knowledge at Dr. Iskak Tulungagung Regional Hospital. This activity aimed to increase public awareness of dengue fever prevention and to implement public health knowledge in their Field Work Practice (PKL) activities.

METHOD

This study employed a quantitative descriptive design with a survey method. This method was used to describe visitors' knowledge levels regarding Dengue Hemorrhagic Fever (DHF) prevention. Survey research was chosen because data was obtained directly from respondents through a questionnaire containing a number of structured questions.

This research was conducted at Dr. Iskak Tulungagung Regional General Hospital on October 29, 2025. The number of respondents in this study was 25 people, consisting of 12 men and 13 women. The sampling technique used was purposive sampling, namely the selection of respondents based on certain criteria set by the researcher. These criteria include hospital visitors who participate in health education activities, are willing to be respondents, and complete the questionnaire completely.

The research instrument used was a questionnaire consisting of 10 statements. These statements covered several important aspects, such as the causes of the disease, transmission methods, prevention efforts through the 3M Plus movement, and recognition of early dengue fever symptoms. The questionnaire used a three-point Likert scale with the following scoring system:

- Positive statements: Agree = 3, Disagree = 2, Strongly Disagree = 1
- Negative statements: Agree = 1, Disagree = 2, Strongly Disagree = 3

Before use, the questionnaire was reviewed first to ensure the clarity and suitability of the contents to the research objectives.

In addition to distributing questionnaires, researchers also conducted direct observations during outreach activities to assess community participation and response to the media used. Furthermore, brief interviews were conducted with several respondents to obtain additional information on their understanding of the outreach materials delivered through the fan leaflet.

The data obtained were then analyzed descriptively quantitatively by calculating the total score obtained by each respondent. The scores were then categorized into three levels of knowledge: good (25–30), sufficient (20–24), and insufficient (<20). The results of the analysis are presented in the form of frequency distribution tables and percentages to provide a clear picture of the level of knowledge of visitors after being given health education.

This method is expected to provide a factual and measurable picture of the effectiveness of increasing public knowledge regarding Dengue Hemorrhagic Fever (DHF) prevention. Therefore, the results of this study can serve as a basis for developing more effective and appealing health promotion strategies for the public.

During the research, the researcher also paid attention to ethical aspects of the research. Each respondent was given an explanation of the purpose, benefits, and procedures of the research before the activity began. Participation was voluntary, and respondents had the right to refuse or withdraw without any consequences. The researcher guaranteed the confidentiality of respondents' identities and used the data only for academic purposes. This ethical principle was maintained to ensure the research process ran according to scientific principles and respected the rights of participants. Through systematic implementation, the use of the survey method is expected to produce valid, objective data and provide a comprehensive picture of the effectiveness of Fanleaflet media in increasing public knowledge about Dengue Hemorrhagic Fever (DHF) prevention.

RESULTS AND DISCUSSION

This study aims to determine how to improve public knowledge regarding Dengue Hemorrhagic Fever (DHF) prevention at Dr. Iskak Tulungagung Regional Hospital. Based on the results of data recapitulation from 25 respondents through a questionnaire consisting of 10 questions, the results obtained showed that in general the level of respondents' knowledge after being given counseling experienced a significant increase.

The questionnaire results showed that most respondents had a good understanding of the material on the causes, transmission methods, and prevention of dengue fever. The scores obtained by respondents indicated the value under 25, highest 30, and an average of 27.8 out of a maximum score of 30, which falls into the good category.

Table 1 Frequency Distribution of Respondent Characteristics Based on Gender and Age at Dr. Iskak Tulungagung Regional Hospital

Characteristics	Age range (yrs)	Number (n)	Percentage(%)
Gender	Man	12	48 %

	Woman	13	52 %
Total		25	100 %
Respondent Age	Children aged 10–12 years	6	24%
	Children aged 13–15 years	5	20%
	Children aged 16–17 years	4	16%
	Parents aged 25–30 years	4	16%
	Parents aged 31–40 years	3	12%
	Parents aged 41–50 years	3	12%
Total	-	25	100%

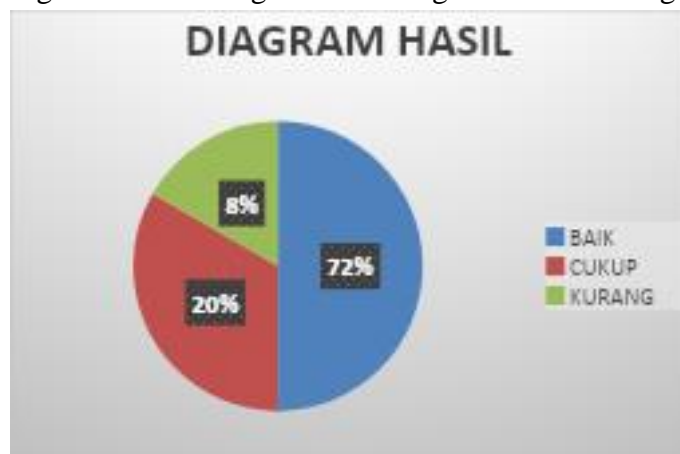
Based on the table above, it can be seen that of the 25 respondents who attended health counseling, there were 12 male respondents (48%). And 13 female respondents (52%). These results indicate that women's participation was slightly higher than that of men. This suggests that women, especially housewives, have a high level of concern for their family's health and are actively involved in health education activities.

Reviewed from age characteristics, most of the respondents are in the adult age group, there are 4 people (16%) aged 25–30 years, 3 people (12%) aged 31–40 years, and 3 people (12%) aged 41–50 years and have children in this group aged 10–12 years as many as 6 people (24%), children aged 13–15 years as many as 5 people (20%), And children aged 16–17 years, 4 people (16%).

Table 2. Summary of the Results of the Dengue Fever Counseling Questionnaire Using Fanleaflet Media

Score Range	Category	Number of Respondents (n)	Percentage(%)
25-30	Good	18	72%
20-24	Enough	5	20%
< 20	Not enough	2	8%
Total		25	100%

Figure 1. Knowledge Value Categories About Dengue Fever



Based on Table 2 and Figure 1, it can be seen that the majority of respondents (72%) have a level of knowledge in the category *Good*, 20% of respondents are included in the category *Enough*, and 8% of respondents in category *not enough*. This shows that the media *Fan leaflet* has a positive impact on increasing public understanding of dengue fever prevention.

These results illustrate that the majority of respondents were able to understand the information conveyed through counseling, such as the causes of the disease, how it is transmitted, and steps to prevent dengue fever by implementing the 3M Plus movement (Draining, Covering, and Reusing Used Goods). In addition, the use of *Fan leaflet* proven to be able to attract the attention of respondents because of its colorful, illustrated appearance and easy to understand for all groups.

Respondents who have a level of knowledge *Enough* And *not enough* These respondents generally come from younger age groups or are less accustomed to participating in health education activities. Other factors that can influence this include the limited duration of the education sessions and differences in educational background. Therefore, ongoing follow-up education activities are necessary to increase public knowledge.

Overall, the results of this study indicate that the media *Fan leaflet* effectively used in health education at Dr. Iskak Tulungagung Regional Hospital. In addition to increasing public knowledge, this media also encourages active participation during the activity. Thus, *Fan leaflet* can be an innovative health promotion strategy to support infectious disease prevention programs such as dengue fever, both in hospital environments and in the general public.

This distribution shows that health education activities using media *Fan leaflet* successfully reached various age groups, both children and adults. The involvement of children shows that the media *Fan leaflet* able to attract the attention of young age groups because of its attractive and informative appearance, while parental involvement shows family support in preventing dengue fever.

DISCUSSION

Based on the results of the research that has been carried out, it can be seen that the use of media *Fan leaflet* Health education activities have a positive impact on increasing public knowledge about preventing Dengue Hemorrhagic Fever (DHF). The questionnaire results showed that most respondents had a good level of knowledge after participating in the education. Of the 25 respondents, 18 (72%) were in the good category. *Good*, 5 people (20%)

category *Enough*, and 2 people (8%) category *not enough*. This finding proves that extension services use media *Fan leaflets effectively* in conveying health messages in a more interesting and easy to understand way.

1. **Analysis of Respondents' Knowledge Level** The results of the study showed that most respondents were able to understand the information provided on dengue fever prevention well. The average score of 27.8 out of a maximum of 30 indicated that respondents were able to absorb the information provided through the presentation. *Fan leaflet* This indicates that public understanding of dengue fever prevention increased after being educated using visual media.
2. **The Effectiveness of Fanleaflet Media in Health Education**
Media *Fan leaflet* is a form of innovation in health promotion that serves as a visual communication tool between educators and the public. Its attractive, colorful format and accompanying supporting images, such as illustrations of mosquitoes and preventive measures, make the public more interested in reading and understanding the content. This media also has the advantage of being easy to carry, reread, and not boring. According to (Notoatmodjo 2018), health promotion media plays a crucial role in clarifying messages and strengthening the public's understanding of health information.
3. **Comparison with Conventional Extension Methods**
When compared with extension methods which only consist of lectures, the use of *Fan leaflet* much more attention-grabbing. Respondents appeared active during the counseling session, with many asking questions, discussing the material, and responding to its contents. This indicates that *Fan leaflet* not only an information medium, but also a communication tool that encourages public participation in the health education process.
4. **Factors Influencing Research Results**
Although the majority of respondents had a good level of knowledge, a small proportion (8%) still had a low level of knowledge. This is likely due to several factors, such as education level, age, attention during counseling, or limited time for educational activities. Younger respondents may need more time to understand the counseling content. Therefore, follow-up counseling activities are necessary to ensure optimal absorption of the messages.
5. **Relationship with Previous Theory and Research**
The results of this study align with the health communication theory proposed by Effendy (2017), which states that delivering messages using visual media can increase the appeal and effectiveness of information delivery. Similar research was also conducted by Hanif, Ririanty, and Nafikadhini (2018), which stated that visual media can increase public knowledge and awareness of clean and healthy living behaviors (PHBS). Thus, this study supports previous findings that visual media such as *Fan leaflet* effective in changing people's knowledge and behavior in disease prevention efforts.

CONCLUSION

Based on the results of the research conducted, it can be concluded that the use of media *Fan leaflet* Health education activities at Dr. Iskak Tulungagung Regional General Hospital have had a positive impact on increasing public knowledge about preventing Dengue Hemorrhagic Fever (DHF). This media has proven effective as a health promotion tool because it is engaging, easy to understand, and provides clear and engaging information for various age groups.

1. Most respondents had a knowledge level in the good (72%), sufficient (20%), and poor (8%) categories with an average score of 27.8 out of 30, which indicates an increase in public understanding after the outreach.
2. Fan leaflets have proven effective in increasing public knowledge about dengue fever prevention, with 72% of respondents having good knowledge. The visualization of messages through fan leaflets facilitates understanding and enhances educational appeal. Therefore, this medium is suitable for continued use in health promotion activities, particularly in community-based disease prevention programs.
3. Factors such as education level, age, and duration of outreach activities influence the results. Therefore, ongoing educational efforts are needed to ensure equitable public knowledge.
4. It is recommended that the media *Fan leaflet continues* to be used as a health promotion strategy at Dr. Iskak Tulungagung Regional Hospital and its use is being expanded within the community. Furthermore, the development of interactive digital media can also be an alternative to strengthen the delivery of health messages to the wider community.

REFERENCES

- Effendy, O. U. 2017. "Communication Science: Theory and Practice." *Bandung: Rosdakarya Youth*.
- Espiana, Ika. 2020. "COMMUNITY ABOUT THE ERADICATION OF DENGUE HEMORRHAGIC FEVER (DHF) MOSQUITO NESTS Correlation Of Knowledge And Attitude With Community Behavior About The Eradication Of Dengue Blood Fever (DHF) Mosquito Nests."
- Hanif, Muthmainah Farida, Mury Ririanty, and Iken Nafikadhini. 2018. "ISSN 2354-5852 Effectiveness of PHBS Pocket Book in Schools in Improving Clean and Healthy Living Behavior." 6(2): 46–53.
- Izza, Annisa Nurul, and Surahma Asti Mulasari. 2023. "RELATIONSHIP BETWEEN ENVIRONMENTAL FACTORS AND THE PRESENCE OF DENGUE HEMORRHAGIC FEVER (DHF) VECTORS." 3(3): 106–13.
- Kaswulandari, A. 2024. "The Effectiveness of Health Education on Increasing Public Knowledge in Preventing Infectious Diseases in Tropical Areas." *Indonesian Journal of Public Health*: 12(1), 45–53.
- Ministry of Health of the Republic of Indonesia. 2023. "Indonesian Health Profile 2023." *Jakarta: Ministry of Health of the Republic of Indonesia* (Jakarta Ministry of Health of the Republic of Indonesia).
- Notoatmodjo, S. 2018. "Health Promotion Theory and Application." *Jakarta: Rineka Cipta*.
- Ridwan, Heri, Popi Sopiah, Aghniya Zhafira, Dwi Putri, Almaidah Janah, and Devia Nurulaeni. 2024. "Platelet Levels in Cell Injury in Dengue Fever Patients." 4(2): 267–72.
- Sulistiyawati, D. & Aminah, S. 2023. "The Influence of Leaflet Media on Increasing Public Knowledge About Dengue Fever Prevention." *Journal of Health Promotion*: 8(2), 77–

Riza Yuliawati et.al Overview Of Visitors' Knowledge About Dengue Fever (Dhf) Prevention Efforts: A Study At Dr. Iskak Tulungagung Regional Hospital

85.

Tansil, Melissa G, Novie H Rampengan, and Rocky Wilar. 2021. "Risk Factors for Dengue Hemorrhagic Fever in Children." 13(28): 90–99.