



The Level of Knowledge Regarding Dengue Hemorrhagic Fever

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ABSTRACT

Objective: The primary objective of this study is to assess the Level of Knowledge regarding Dengue Hemorrhagic Fever (DHF) within the Tanjung Karang Community Health Center's operational jurisdiction.

Method: The research employed an analytical descriptive approach. The study population comprised individuals residing in the Tanjung Karang Community Health Center area who had encountered dengue fever. The total number of reported dengue fever cases within the Tanjung Karang Community Health Center's operational boundary, spanning six sub-districts from January 2021 to August 2022, amounted to 96 cases. Utilizing the Slovin formula with a margin of error set at 0.05, the calculated sample size was 77.

Results: Findings revealed that 39 individuals (50.6%) exhibited sufficient knowledge of preventive measures against DHF. Subsequently, 20 participants (26.0%) demonstrated good knowledge of preventative strategies, while 18 individuals (23.4%) displayed a lower level of awareness regarding DHF prevention efforts.

Conclusion: The study findings revealed varying levels of knowledge among participants regarding prevention efforts for Dengue Hemorrhagic Fever. These results underscore the importance of continuous education and awareness initiatives to enhance community knowledge and promote effective prevention strategies.

Keywords: community, dengue, fever

Introduction

Dengue hemorrhagic fever, caused by the *Aedes Aegypti* mosquito transmitting the dengue virus, is a prevalent health issue with far-reaching consequences within society (Kemenkes RI, 2022; Dania, 2016). This disease, affecting individuals across all age groups annually, results from inadequate community involvement in eradicating

mosquito breeding grounds, known as Pemberantas Sarang Nyamuk (PSN) in Indonesia (Safira et al., 2022; Najamuddin et al., 2020). The high incidence of dengue fever cases reflects suboptimal implementation of PSN-related preventive measures, emphasizing the critical need to raise public awareness and advocate for the adoption of PSN practices to mitigate dengue fever occurrences (Kurniawan et al., 2022).

In 2021, the World Health Organization (WHO) projected approximately 100-400 million global dengue infections each year, with Asia bearing the highest burden of dengue fever cases annually, accounting for 70% of the total cases (Sari et al., 2024). Notably, Southeast Asia, particularly Indonesia, faces significant morbidity and mortality rates attributed to dengue fever, representing 58% of the region's total dengue cases (Sari et al., 2024; Gunawan et al., 2023).

The data until 2020 reflects a concerning picture of Dengue Hemorrhagic Fever (DHF) in Indonesia, with a total of 95,893 reported cases and 661 resulting deaths. These cases were distributed among 472 districts/cities across 34 provinces, with fatalities reported in 219 of these areas. Additionally, as of November 30, 2020, an additional 51 DHF cases and one death were recorded (Indonesia, Kementerian Kesehatan Republik, 2021). Furthermore, 73.35% of districts/cities, totaling 377 areas, exhibited an Incident Rate of 49 per 100,000 population (Depkes, 2021). Among age groups, children aged 5-14 years bore the highest proportion of dengue fever cases at 33.97%, with a notable death rate of 34.45% in this group. Gender-wise, dengue fever cases disproportionately affected men at 53.11%, compared to women at 46.89% (Indonesia, Kementerian Kesehatan Republik, 2021).

Community efforts to prevent the spread of dengue fever play a crucial role in mitigating its transmission, with eradicating mosquito breeding sites being a key preventive measure (Jastika, 2018). The success of dengue fever prevention programs hinges on factors such as the community's understanding of the *Aedes aegypti* mosquito as the vector for dengue transmission and the effective implementation of measures aimed at eradicating mosquito breeding grounds in the local environment (Kementerian Kesehatan RI, 2019).

As per the NTB Provincial Health Profile (2021), Dengue Hemorrhagic Fever (DHF), or DBD, is characterized by severe pain akin to bone pain and is caused by a virus transmitted through mosquito bites. DHF outbreaks can emerge suddenly, leading to rapid infections among populations. DHF remains a pertinent public health issue in NTB Province due to its fast transmission rate, potential fatality, and widespread presence in all districts and cities. The recorded cases of dengue fever in 2021 showed a decrease compared to the previous year, with 3,919 cases in 2020 dropping by 0.69 times to 2,719 cases in 2021, resulting in 18 fatalities (CFR: 0.7%). Every district and city reported cases of dengue fever, with Mataram City recording the highest number of cases at 544. The DHF Incidence Rate (IR) per 100,000 population exhibited fluctuations from 2017 to 2021, with a decrease from 2017 to 2018, followed by an increase until 2020, and another reduction in 2021. Despite the decline in 2021, the incidence of dengue fever remains relatively high, with IR ranging from 10.7 to 76.5 per 100,000

population over the past five years. The highest DHF IR was recorded in 2020 at 76.5 per 100,000 population, exceeding the national IR threshold of <40/100,000 population.

According to the Mataram City Health Service (2022), the period between January and June 2022 witnessed the highest number of Dengue Hemorrhagic Fever (DHF) transmissions, totaling 385 cases, with one DHF patient succumbing to the disease. Among these six months, January recorded the highest number of DHF cases, with 107 reported cases and one fatality. The surge in cases during January can be attributed to unpredictable weather patterns fluctuating between sunny mornings and rainy afternoons, creating optimal breeding conditions for mosquito larvae. Subsequently, the number of dengue cases fluctuated in the following months: decreasing to 54 cases in February, increasing to 59 cases in March, decreasing again to 49 cases in April, rising to 59 cases in May, and then declining to 57 cases in June.

Data obtained from the Tanjung Karang Community Health Center revealed instances of Dengue Fever occurring from January 2021 to August 2022 across six sub-districts.

Table 1. Data on the incidence of Dengue Fever in the Tanjung Karang Community Health Center Working Area

No	Region	Year		Amount
		2021	2022	
1	Tanjung Karang	7	12	19
2	Tanjung Karang Permai	13	8	21
3	Kekalik Jaya	8	7	15
4	Taman Sari	8	5	13
5	Banjar	8	2	10
6	Ampenan Selatan	10	8	18
Total number		54	42	96

Objective

The objective of this research is to assess the level of knowledge regarding Dengue Hemorrhagic Fever (DHF) prevention and control efforts within the working area of the Tanjung Karang Community Health Center.

Method

The research design employed in this study was analytical descriptive research. The target population included all residents who had encountered cases of Dengue Hemorrhagic Fever (DHF) within the working area of the Tanjung Karang Community Health Center. The total number of reported DHF cases in the Tanjung Karang area, comprising six sub-districts, from January 2021 to August 2022, amounted to 96 individuals. These figures were then subjected to the Slovin formula using a margin of error of 0.05, yielding a sample size calculation of 77. Consequently, the researchers selected 77 individuals as respondents for the study.

Result

The outcomes of the conducted research will be presented in the form of a comprehensive analysis detailing the demographic characteristics of the respondents and the findings related to the assessment of the level of knowledge regarding Dengue Hemorrhagic Fever (DHF) prevention efforts. This information will be visually represented through a structured table and diagram, providing a clear and organized display of the results.

Table 2. Characteristics of Respondents

Variables	f	%
Age		
25-29	8	10,4%
30-34	15	19,5%
35-39	16	20,8%
40-44	13	16,9%
45-49	12	15,6%
50-54	7	9,1%
55-59	6	7,8%
Sex		
Male	37	48,1%
Female	40	51,9%
Education		
Primary	9	11,7%
Secondary	11	14,3%
Tertiary	20	26,0%
University	23	29,9%

LEVEL OF KNOWLEDGE EFFORTS TO PREVENT OF DHF

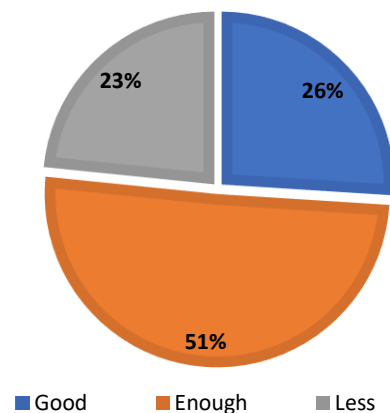


Figure 1. Percentage Effort to Prevent of DHF

Based on the data presented in Table 2, it can be concluded that the majority of respondents were in the 35-39 age group, comprising 16 individuals (20.8%), while the lowest number was in the 55-59 age group, with 6 individuals (7.8%). Furthermore, the data indicates that the majority of respondents were female, totaling 40 individuals (51.9%), with the minority being male, accounting for 37 individuals (48.1%). Additionally, it is evident that the majority of respondents had a higher level of education, specifically completing high school, with 23 individuals (29.9%), while the lowest number of respondents had no formal education, totaling 9 individuals (29.9%).

Discussion

Changing or adopting new behaviors is a multifaceted and time-consuming process (Lestari et al., 2020). While possessing positive knowledge is essential, it does not necessarily translate into positive attitudes and actions. Other factors, such as infrastructure and facilities, as well as the availability of supportive government policies, play crucial roles in shaping individual behaviors (Notoatmodjo, 2018).

The significance of supportive government policies for enhancing community involvement in eradicating mosquito breeding sites is underscored, especially through the establishment and training of JUMANTIK cadres responsible for overseeing vector control activities in the community. Research results have shown that JUMANTIK cadres exert a significant influence, leading to a notable increase in the larval free rate. For instance, initial larval surveys demonstrated a rate of 68%, which subsequently increased to 89% following the formation and training of JUMANTIK cadres, highlighting the positive impact of their involvement (Rubandiyah & Nugroho, 2018).

Prevention efforts are crucial in combating the transmission of Dengue Hemorrhagic Fever (DHF) (Dinas Kesehatan Provinsi Nusa Tenggara Timur, 2020). The 4M Plus approach, encompassing draining, covering, burying, and monitoring mosquito larvae, effectively limits the reproduction of *Aedes Aegypti* mosquitoes and aids in controlling the transmission of the virus (Fauziah, 2023).

Control measures for DHF are regulated under specific health decrees emphasizing prevention strategies, including the elimination of mosquito breeding sites through the Public Health Center (PHC) movement (PSN), coupled with enhanced healthcare capacity, epidemiological surveillance, and the prompt identification of DHF outbreaks in Indonesia, known as Kejadian Luar Biasa (KLB). Vector control management is generally governed by the Minister of Health of the Republic of Indonesia Regulation Number 374/MENKES/PER/III/2010 focusing on vector control strategies (Permenkes RI, 2010).

To effectively prevent the spread of DHF, prioritizing personal and environmental hygiene is imperative. Increasing knowledge regarding DHF prevention strategies, such as implementing the 3M Plus approach advocated by the government - namely ensuring the closure of water reservoirs, eliminating water-holding containers like tubs and containers, proper waste management, fogging, administering larvicides, utilizing mosquito repellents, planting mosquito-repelling vegetation, and introducing larvivorous fish - is essential (Ustiawaty et al., 2020). Suboptimal PSN implementation is recognized as a contributing factor to the high morbidity rates associated with DHF outbreaks (Sumantri, 2014).

Conclusion

The study findings revealed varying levels of knowledge among participants regarding prevention efforts for Dengue Hemorrhagic Fever. A significant proportion of respondents demonstrated adequate knowledge (50.6%), with a smaller percentage exhibiting good knowledge (26.0%), while a portion had limited understanding (23.4%). These results underscore the importance of continuous education and awareness initiatives to enhance community knowledge and promote effective prevention strategies. The study serves as a valuable reference for implementing targeted interventions aimed at improving overall knowledge levels and fostering leadership roles within communities to drive positive health outcomes. This underscores the need for ongoing efforts to empower individuals with the necessary knowledge to combat Dengue Hemorrhagic Fever effectively.

Conflict of interest

There is no conflict of interest.

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