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RESEARCH ARTICLE

Cross-Sectional Study: Predisposing Factors for Dengue Haemoragic Fever Prevention Behavior by the Community

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ARTICLE INFO	ABSTRACT
	Dengue Haemoragic Fever (DHF) increases morbidity in the Kupang area. The health promotion plan must begin by identifying and diagnosing the knowledge and attitudes that shape health behaviors. The purpose of this study is to analyze predisposing factors related to the prevention behavior of *Dengue Haemoragic Fever* (DHF). This study uses an observational analysis with *a Cross-Sectional* design. It was conducted in Kupang City from June to August 2024. The sampling technique is *proportional random sampling*, involving 339 respondents. The instrument is a questionnaire, and it is carried out with an interview approach. Data analysis is using IBM SPSS *Windows ver. 25.0.* The study showed that most respondents (36.30%) had good knowledge and a positive attitude (42.60%). There was a significant relationship between knowledge (p=0.000) and attitude (0.001) on DHF prevention behavior. Health promotion efforts require innovation through socio-cultural approaches, cross-stakeholder cooperation, optimization of the function of educational institutions, social media, and the role of the family in increasing public awareness of DHF prevention.

INTRODUCTION

Dengue Hemorrhagic Fever (DHF) contributes to the rising morbidity and death rates in tropical nations globally. The World Health Organization (WHO) estimates that 2.5 billion individuals, or 40% of the global population, are at risk of DHF, particularly those residing in metropolitan regions of tropical and subtropical nations. Approximately 400 million dengue illnesses are predicted to occur globally yearly (WHO, 2021).

Dengue Haemorrhagic Fever (DHF) is a viral illness carried by Aedes mosquitoes, particularly Aedes aegypti. Fuadzy et al. (2020); Roy and Bhattacharjee (2021). This DHF presents with common clinical manifestations, including a fever lasting 7 days, and is marked by strong muscular spasms, arthralgia, and elevated body temperature, correlating with the severity and duration of the symptoms (Mallhi et al., 2021). Most dengue virus infections are asymptomatic; nonetheless, the virus can lead to serious disease and mortality, particularly in regions inhabited by female Aedes mosquitoes, including Aedes aegypti and Aedes albopictus. (Schaefer et al., 2024).

Indonesia is one of the most tropical nations globally, with elevated air humidity levels. (Marvianto et al., 2023). Data from the Ministry of Health indicates that in 2022, the incidence of dengue cases reached 131,265, with approximately 40% occurring in children aged 0–14. The total fatalities amounted to 1,135, with a significant 73% of these occurring among children aged 0–14 years (Ministry of Health of the Republic of Indonesia, 2022). The World Health Organization (WHO) has corroborated this information, indicating that Indonesia holds the distinction of having the highest incidence of dengue fever in Southeast Asia and ranks second globally, following Thailand (WHO, n.d.)(Karyanti & Hadinegoro, 2016).

As of early 2019, the Indonesian Ministry of Health indicates that East Nusa Tenggara is third in the incidence of Dengue Hemorrhagic Fever in Indonesia, after East Java and Central Java. NTT Province is among the regions affected by Dengue Hemorrhagic Fever, designated as an Extraordinary Event (KLB) in many of the province's regencies and municipalities. Since the start of the year, this sickness has resulted in a substantial number of fatalities. Dengue Hemorrhagic Fever outbreaks transpired in the regencies and towns of East Nusa Tenggara, with 1,028 verified cases reported by the end of January 2019. According to the NTT Provincial Health Office, fourteen residents of NTT succumbed to dengue hemorrhagic fever at the start of 2019. Many deaths transpired in many districts, including Ende, Ngada, East Manggarai, Manggarai, West Manggarai, West Sumba, Rote Ndao, and Kupang City. In January 2019, West Manggarai, Kupang City, and West Sumba were designated Extraordinary Events (KLB) for Dengue Hemorrhagic Fever in NTT (Nuraini, 2019). This label was derived from the study by NTT Antar.

Kupang City is one of the cities with the highest number of DHF cases, with 202 cases. In addition to being caused by rainy weather, there is also the understanding and attitude of the community, which needs to know how to prevent dengue, which is the main trigger factor for the emergence of dengue. So far, public understanding and awareness of the dangers of Dengue Fever is still very low, causing cases of Dengue Fever in Kupang City *to continue to soar.* (Dinkes Kupang, 2023).

Epidemiological study identifies many variables that lead to the development of hemorrhagic fever (DHF). The factors comprise: (1) Geographical conditions conducive to the rapid proliferation of Aedes aegypti mosquito breeding grounds at altitudes below one thousand meters; (2) Elevated population mobility; (3) Inadequate environmental sanitation practices; (4) Mutations in the dengue virus genome; and (5) Insufficient health promotion initiatives. In particular, Roy and Bhattacharjee (2021) and Fuadzy et al. (2020). A cross-sectional study conducted in a specific region of Indonesia revealed that individual behavior, particularly concerning prevention, is significantly influenced by two variables: knowledge (p=0.004) and attitude (p=0.001) (Prameswarie et al., 2022). A separate study using the case-control methodology concluded that the levels of knowledge (p=0.000), education (p=0.000), attitude (p=0.000), and the availability of larvicide (p=0.000) are significant predisposing variables correlated with the incidence of DHF. In 2020, Sutryawan et al.

Formulating an effective plan is essential to use an evidence-based paradigm for identifying health concerns (Green et al., 2022). The first assessment of the construction Precedes Theory has successfully identified challenges and the need for a tailored approach to a specific demographic or community to inform further interventions (Borhani et al., 2015; Notoadmodjo, 2020). The predisposing variables that serve as beginning conditions influencing DHF preventative behavior in the Kupang City population have not been thoroughly and precisely investigated since previous studies have not addressed these factors comprehensively. To identify and contribute to innovation, health promotion initiatives, and strategies related to DHF prevention by relevant organizations and validate findings from other studies, it is crucial to analyze the factors predisposing individuals to develop the condition.

RESEARCH METHODOLOGY

This study utilizes observational analysis within a cross-sectional framework. The research is scheduled in Kupang City between June and August of 2024. The population of interest comprises individuals from 11

Kupang City Health Center districts, incorporating both identified and unidentified cases. A stratified random sampling approach will be employed to identify participants.

This study will involve a sample size of 339 individuals. The information gathered will consist of primary data acquired via questionnaires. The design of these questionnaires is such that they are closed in nature, enabling respondents to choose answers that align with their specific characteristics. Participants express their selections by indicating (√) the relevant response. The questionnaire has undergone rigorous validation and has been assessed for its reliability. Data tabulation and analysis shall be conducted utilizing IBM Statistical Product and Service Solutions version 25.0.

RESULT AND DISCUSSION

A total of 339 participants participated in this research, which was carried out at the Kupang City Health Center. Within the age group of 20 to 29 years old, most responses (57.14%) were male.

53.13% of people who participated in the poll had prior experience working in the private sector, holding occupations such as farmers, fishermen, and merchants. 10% of respondents had previous experience in higher education. However, most respondents (46.36%) were still in high school. The outcomes of an analysis of data on several predisposing variables acquired as a result of observation are described in the following paragraphs.

The results shown in Table 1 reveal that 36.60% of participants exhibited a proficient comprehension of DHF preventive techniques. The average participant demonstrated a score of 42.17 ± 8.11. The results reveal a substantial proportion of knowledge about preventing Dengue Hemorrhagic Fever in Kupang is markedly high, at 36.6%, corresponding to 146 out of 339 respondents.

The study of behavior is fundamentally anchored in knowledge, given its significant influence on individuals' actions and engagement with the surrounding environment. Glantz et al. (2015) noted that an individual's understanding significantly shapes their attitudes, perceptions, and behaviors. Thus, comprehending knowledge could facilitate formulating strategies to influence individuals' behaviors across various domains, including health and education (Michaelson et al., 2021).

The survey results indicate that 12.80 percent of participants have a limited comprehension of preventing Dengue Hemorrhagic Fever (DHF) through applying insect repellents and implementing environmental cleanliness practices. The availability of information, the level of education attained, cultural heritage, and individual experiences are among the factors that may influence this understanding (Notoadmodjo, 2020).

The statistics suggest that 1.0% of respondents, four out of 399, had a very bad attitude towards DHF prevention, while 6.5%, or twenty-six individuals, demonstrated a low attitude. Additionally, 32.1% (128 individuals) had a moderate degree of knowledge, 42.6% (170 individuals) displayed a high level of attitude, and 17.8% (71 individuals) possessed a very optimistic attitude. The results indicate a substantial pool of responders requiring a more optimistic approach to cardiovascular disease prevention.

A correlation exists between attitudes and acceptance, responsiveness, valuing, and accountability levels. In the studies conducted by Glanz et al. (2015) and Michaelson et al. (2021), The findings from field observations indicate that inadequate knowledge, an ineffective water distribution system, and substandard waste management contributed to the community's poor sanitation practices in preventing dengue hemorrhagic fever (DHF). The results indicated that 19.22% of respondents exhibited minimal preventive behavior, especially concerning awareness of environmental cleanliness and sanitation. The results were derived from interviews. Correlation analysis showed a significant relationship between knowledge (0.000) and attitude (0.0001) on DHF prevention behavior, so these two variables can explain the lack of DHF prevention behavior in some respondents. Knowledge and attitudes are predisposing variables strongly correlated with individuals' behavior. (Parwati et al., 2021).

Certain localities indicated that they had undertaken measures to prevent and control the proliferation of Aedes aegypti larvae, receiving support from their community administration. The preventative efforts were less effective than anticipated due to limited access to information and insufficient awareness. Innovative educational initiatives enhance public awareness regarding the importance of environmental cleanliness and the prevention of mosquito breeding. A recent study utilizing an experimental model demonstrated that the instruction and promotion of dengue fever prevention through a media card game significantly enhanced primary school students' knowledge regarding dengue fever prevention ($p = 0.000$). Mufida et al. (2024). Schools can significantly contribute.

Variable	Percent (%)	Correlation (Sig)
Knowledge		
Excellent	17.00	
Good	36.60	0.000
Medium	31.30	
Low	12.80	
Poor	2.30	
Mean	**42.17±8.11**	
Attitude		
Excellent	17.80	
Good	42.60	
Medium	32.10	
Low	6.50	0.001
Poor	1.00	
DHF Prevention Behavior		
Excellent	15.65	
Good	35.55	
Medium	29.58	
Low	14.65	
Poor	4.57	
Mean	**39.17±2.91**	

CONCLUSION AND RECOMMENDATIONS

Efforts to promote health require innovation through a socio-cultural approach, cooperation between different stakeholders, optimization of the function of educational institutions, social media, and the role of families in increasing public awareness of the importance of cardiovascular disease prevention.

Implications of the Study

The importance of behavioral studies in dengue disease prevention cannot be overstated, particularly for health policy development, for several key reasons:

1. **Enhancing the Effectiveness of Prevention Programs**

   Understanding community behaviors related to dengue prevention allows for the tailoring of health policies, thereby improving compliance with preventive measures such as using mosquito nets, eliminating mosquito breeding sites, and implementing effective waste management.

2. **Identifying Barriers and Challenges**

These studies can reveal the barriers or challenges communities encounter when implementing preventive measures, such as insufficient knowledge, inconvenience, or access issues. This insight allows policymakers to devise more targeted and effective interventions.

3. **Increasing Knowledge and Awareness**

Gaining insight into individual behaviors regarding prevention can lead to developing more potent public health campaigns, thereby raising awareness about the significance of preventive measures in reducing the risk of dengue outbreaks.

4. **Resource Planning**

Understanding community behaviors enables governments to allocate resources more efficiently, such as counseling services, self-protection tools, and vector control initiatives, ensuring they are effectively targeted.

5. **Policy Evaluation and Improvement**

Behavioral studies provide critical data for evaluating existing programs, allowing for evidence-based decision-making in formulating policies better aligned with the community's needs.

In summary, these behavioral studies play a vital role in enhancing disease prevention strategies, mitigating their impact on public health, and fostering the implementation of more effective health policies.

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