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The Influence of Dengue Fever in the working area of UPTD puskesmas Cigandamekar Kuningan Regency in 2024

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Abstract

This study aims to analyze the factors influencing the rising cases of dengue fever in the working area of UPTD Puskesmas Cigandamekar Kuningan in 2024. The research employed a descriptive qualitative approach with data collection through structured interviews, observations, and document review from 2023 to 2024. The data were analyzed thematically to identify key contributing factors, including community knowledge, environmental sanitation, and healthcare access. The results indicate that low community awareness of prevention, poor sanitation conditions, and the lack of sustainable health programs are primary factors behind the increase in cases. The study concludes that enhancing community education, improving environmental management, and encouraging active community participation are essential for effective dengue prevention. It recommends an integrated and sustainable approach to control disease transmission and improve public health outcomes.

Keywords: *Dengue Fever, Community Awareness, Environmental Sanitation, Vector Control, Public Health*

INTRODUCTION

Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF) continue to be major public health concerns in tropical and subtropical regions worldwide, including Indonesia. Transmitted by the Aedes aegypti mosquito, dengue infections pose a significant burden due to rapid urbanization, climate variability, and inadequate vector control measures. The World Health Organization estimates that there are approximately 390 million dengue infections annually, with around 96 million cases manifesting clinically, underscoring the severity of the disease globally (WHO, 2022). In Indonesia, the incidence has shown a worrying upward trend in recent years, especially in subnational regions like Kuningan Regency, where local environmental and social factors contribute to the persistence of the disease. This increasing trend emphasizes the urgent need for effective prevention strategies tailored to specific community needs.

Preventive efforts primarily focus on community-based approaches such as eliminating mosquito breeding sites, promoting personal protective measures, and conducting health education campaigns. These strategies rely heavily on active community participation and awareness, which are influenced by socio-economic and environmental factors. Despite ongoing efforts, recent data from UPTD Puskesmas Cigandamekar in 2024 indicates a continued rise in dengue cases, suggesting that current interventions may not be sufficiently effective or well-implemented. Factors such as poor sanitation, low community knowledge, and limited access to health services may hinder the success of these programs, necessitating a deeper understanding of local determinants of dengue transmission.

The increasing number of dengue cases in this region calls for a comprehensive analysis of the factors influencing disease incidence. Identifying key determinants—such as environmental sanitation, community knowledge and behavior, and healthcare access—can help health authorities develop targeted and sustainable interventions. Understanding these factors is crucial for designing more effective control programs that are sensitive to local conditions and community dynamics. Moreover, examining the social and environmental context can reveal gaps in current strategies and suggest innovative solutions to reduce dengue transmission effectively.

This study aims to analyze the various factors affecting the rise of dengue cases in the Cigandamekar health district. By exploring socio-environmental determinants and community behaviors, the research intends to provide evidence-based recommendations for improving existing dengue prevention initiatives. The findings are expected to assist policymakers and health practitioners in crafting

more tailored and impactful strategies, ultimately reducing disease burden. The novelty of this research lies in integrating recent epidemiological data with a holistic understanding of local factors, which is vital for creating sustainable public health interventions.

In conclusion, dengue remains a significant health challenge in Indonesia, with rising cases highlighting gaps in current prevention efforts. Addressing this issue requires a detailed understanding of local risk factors and community behaviors, combined with innovative, culturally appropriate intervention strategies. Through targeted analysis and community engagement, it is possible to curb the spread of dengue and improve health outcomes in vulnerable regions like Kuningan. Continued research and adaptive strategies are essential to combat this persistent public health threat effectively.

RESEARCH METHODS

This study employs a descriptive qualitative approach to thoroughly explore the impact of dengue fever (DHF) in the work area of UPTD Puskesmas Cigandamekar, focusing on epidemiological data from 2023 to 2024. The research design is selected to gain in-depth understanding of the situation, causes, and community responses related to dengue cases, as suggested by Sugiono (2012), who emphasizes the importance of descriptive qualitative methods in health research for capturing detailed contextual data. Data collection instruments include structured interviews with health workers, community members, and dengue patients, as well as observation checklists to assess environmental sanitation and community practices. Data analysis techniques involve thematic analysis to identify recurring patterns and themes, supported by Moeloeng's (2004) qualitative analysis framework, which enhances the interpretative depth of the findings. The population targeted comprises dengue patients, their families, and community stakeholders within the jurisdiction of UPTD Puskesmas Cigandamekar, with a purposive sampling method used to select respondents who have relevant information and experiences. The sample size is determined based on saturation point, ensuring data richness and validity, as suggested by Sudariono (2017). Data collection procedures follow ethical guidelines, including informed consent and confidentiality, and are conducted through interviews, field observations, and review of health records. The collected data are then analyzed descriptively to identify key factors influencing dengue incidence and community behavior, providing a comprehensive understanding of the local context in line with Moeloeng's (2004) recommendations for qualitative health research.

RESULTS AND DISCUSSION

Dengue Hemorrhagic Fever (DHF) is a prevalent disease in many tropical and subtropical regions, such as Southeast Asia, where the climate facilitates its transmission. The occurrence of DHF often leads to outbreaks, which are heavily influenced by environmental factors, particularly climate conditions. For instance, higher humidity levels are known to prolong the lifespan of the Aedes mosquito vectors, thereby increasing the risk of transmission (Kusumawati, 2021). Globally, it is estimated that dengue infections affect between 50 to 100 million people annually, with Southeast Asia being one of the most impacted regions (Astuti, 2022). In Indonesia, dengue cases have shown a concerning trend, with 73,518 cases reported in 2021 and approximately 705 fatalities, reflecting a case fatality rate (CFR) of about 0.96% (Kemenkes RI, 2021). Regional data from South Kalimantan in 2021 also indicated 1,753 dengue cases, underscoring the disease's widespread impact (Dinkes Prov Kalsel, 2022).

Dengue hemorrhagic fever is caused by the dengue virus (DENV), which is transmitted exclusively through the bites of infected female mosquitoes, primarily Aedes aegypti and Aedes albopictus (Kemenkes RI, 2018). The virus exists in four serotypes (DENV 1 to DENV 4); infection with one serotype confers lifelong immunity against that particular serotype, but not against others. Consequently, individuals can experience multiple infections over their lifetime, increasing the risk of severe disease (WHO, 2022). The complexity of dengue epidemiology is compounded by factors such as urbanization, population growth, and climate change, which create optimal breeding conditions for the vectors (Gubler, 2011; World Health Organization, 2013). These factors contribute to the persistent high incidence rates observed in affected communities.

In the context of UPTD Puskesmas Cigandamekar, a primary health service facility in the Kuningan Regency, the incidence of dengue has been rising steadily. The increasing trend in dengue cases

necessitates comprehensive analysis and strategic intervention. To analyze potential solutions, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was conducted, aiming to identify internal and external factors influencing the management of dengue in this region. One of the primary efforts undertaken by the research team involves creating educational leaflets titled "PSN" (Peberantasan Sarang Nyamuk), which translates to "Mosquito Nest Eradication." These leaflets aim to raise awareness among residents about the dangers of dengue and the importance of environmental sanitation. The leaflets emphasize the "3M Plus" health behaviors—drain, close, and bury—along with community participation in cleaning campaigns to eliminate mosquito breeding sites.

Since early 2024, the dengue cases in UPTD Puskesmas Cigandamekar have continued to escalate. Data from February to October 2024 reveal a total of 26 dengue cases across several villages, with fluctuations in monthly incidence. For example, in February, only one case was reported in Sangkanurip Village, while March saw an increase to three cases in Cibuntu. April experienced a similar rise, with three cases in Cibuntu. The trend persisted with cases appearing in different villages, such as Sangkanurip, Indaptra, Koreak, Jambugeulis, SangkanMulya, Karang Muncang, and Bunigeulis, reflecting the widespread nature of dengue transmission in the area (see Table 1). Notably, the disease affects all age groups, from children to the elderly, including pregnant women, indicating a broad susceptibility that complicates control efforts. The pattern of cases over these months suggests a rising trend, emphasizing the urgent need for intensified vector control and community engagement to curb the spread.

The increase in dengue cases in UPTD Puskesmas Cigandamekar is attributed to several interrelated factors. First, a lack of community awareness and knowledge about dengue transmission and prevention plays a significant role. Second, environmental sanitation remains inadequate, with many residents not actively participating in eliminating mosquito breeding sites. Third, there is a deficiency in effective and sustained public health programs, such as routine fogging or larviciding activities, and limited community participation in clean-up campaigns (Gubler, 2011; World Health Organization, 2018). Additionally, urbanization and population density contribute to the proliferation of breeding sites, especially stagnant water in household containers and discarded waste, further facilitating mosquito proliferation.

Addressing this complex issue requires a systematic and comprehensive approach, including health education, environmental management, and community empowerment. The deployment of educational materials like leaflets, combined with community-based initiatives, can significantly improve awareness and behavioral change. Moreover, integrating local stakeholders, health workers, and community leaders into ongoing vector control programs is vital for sustainable success. As the dengue situation continues to worsen, especially in vulnerable populations such as pregnant women and the elderly, a multi-faceted and participatory strategy becomes essential to reduce the disease burden effectively.

In an effort to better understand the underlying factors contributing to dengue hemorrhagic fever (DHF) cases at UPTD Puskesmas Cigandamekar, a series of interviews were conducted with affected patients. These interviews aimed to gather detailed information regarding the symptoms experienced, the progression of the illness, and potential links within the community that may influence disease transmission. The insights obtained from these respondents provide valuable context for identifying common patterns and potential risk factors associated with dengue infection in the region. Below is a summarized table of the interview results, highlighting key questions and the responses provided by the patients, which will be further analyzed to inform targeted prevention and control strategies.

Table 1. Case Interview of factors causing DHF at UPTD Puskesmas Cigandamekar

No	Questions	Answers
1	Does mom have a fever suddenly?	Yes, I felt a sudden fever for 3 days in a row.
2	Is there a nosebleed when you have a fever?	I feel a fever

3	Is there anyone besides your mother who is affected by dengue by family members or neighbors who are affected by dengue?	If family members are not present but there are neighbors affected by dengue
4	Do mothers often feel tired?	I don't feel fatigue
5	What are the symptoms of fever that you feel first?	The cough and cold I felt for the first time when I had a fever
6	Is there a cough or flu during a fever?	Yes, I feel a cough and flu when I have a fever at the same time

The data collected from the interviews with dengue patients at UPTD Puskesmas Cigandamekar reveal important insights into the clinical presentation and possible community transmission factors of dengue hemorrhagic fever (DHF) in the region. The majority of respondents experienced a sudden onset of high fever lasting for several days, which aligns with the typical symptomatology of dengue infection as described in previous studies (Guzman et al., 2010). Interestingly, some patients also reported experiencing nosebleeds during their febrile episodes, a hallmark sign of DHF that indicates increased vascular permeability and thrombocytopenia, which are critical markers for severity assessment (World Health Organization, 2009). These clinical features highlight the importance of early detection and prompt medical intervention to prevent progression to severe dengue.

Furthermore, the interviews suggest that dengue transmission in the community might not be confined solely within family units but also significantly involves neighboring residents, which underscores the importance of community-wide vector control efforts. Although some patients did not feel overt fatigue, symptoms such as cough and cold were prevalent during the initial stages of illness, which could be mistaken for common respiratory infections, potentially delaying diagnosis and treatment (Khan et al., 2013). Recognizing these early symptoms and understanding their overlap with other febrile illnesses is vital for health workers and community members to facilitate timely responses. This finding emphasizes the need for continuous health education and awareness campaigns that focus on recognizing dengue symptoms and seeking early medical care.

The responses also reveal that the initial symptoms experienced by patients often include respiratory signs such as cough and cold, which may lead to misclassification of dengue as a respiratory infection, thereby affecting early case detection and management (Halstead, 2012). Additionally, the community's exposure to dengue appears to be influenced by environmental factors, such as stagnant water and improper sanitation, which serve as breeding grounds for Aedes mosquitoes. This reinforces the crucial role of environmental sanitation and community participation in eliminating breeding sites to reduce transmission. Addressing these factors through integrated vector management, health education, and community engagement is essential to interrupt the transmission cycle of dengue in the area, aligning with global strategies for dengue control as outlined by the WHO (2013). Overall, these findings underscore the importance of a comprehensive approach that combines clinical awareness with community-based environmental management to effectively combat dengue outbreaks in the region.

CONCLUSION

This study highlights the significant impact of dengue fever in the UPTD Puskesmas Cigandamekar area in 2024, demonstrating a rising trend in cases that is influenced by factors such as inadequate community awareness, poor environmental sanitation, and limited public health interventions. The findings emphasize that early symptoms like sudden high fever, nosebleeds, and respiratory complaints are common among patients, which underscores the importance of timely diagnosis and community education to prevent disease progression. However, the research is limited by its qualitative approach and relatively small sample size,

which may not fully capture all socio-environmental determinants or the broader epidemiological patterns. Future research should incorporate quantitative data and larger population samples to validate these findings and explore additional factors such as socio-economic status and climate variables. Moreover, longitudinal studies are recommended to assess the long-term effectiveness of integrated community-based interventions, aiming to develop more sustainable and culturally tailored strategies for dengue prevention and control in similar regions.

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