KnE Social Sciences
ICASI
International Conference on Advance & Scientific Innovation
Volume 2023

Research Article

Dengue Hemorrhagic Fever in The Working Area of Abeli Public Health Center, Kendari City

Wa Ode RisnaJuhanda S, Hardi, Muhamad Asra, Fauziah Ibrahim, Halimah, Ramadhan Tosepu*

Department of Magister Public Health, Postgraduate of Halu Oleo University, Indonesia

Abstract.
Dengue Hemorrhagic Fever (DHF) is an infectious illness spread by vectors caused by a virus. According to data, DHF cases at Abeli Health Center in 2021 have increased compared to the previous year, namely 19 cases. These cases have increased compared to the incidence of DHF, with 3 cases in 2020 and 6 cases in 2019. The primary goals of this study are to explain the description of dengue fever incidents at the Abeli Health Center in Kendari City in 2022. In 2021, This type of research will employ an observational survey with secondary data obtained from health data in the Abeli Health Center work area. Furthermore, it is linked to reports of DHF events in the Abeli Health Center's operating area. The type of investigation data was numerical. The investigative information was displayed within the frame of charts and narratives. This study found no association between the description of Dengue Hemorrhagic Fever in the working region Abeli Public Health Care, Kendari City, in 2022. This was because most of the houses in the district met the requirements of healthy homes. Meanwhile, the cases of Dengue Hemorrhagic Fever (DBD) and Wastewater Disposal Channel (WWDC)inAbeli District, Kendari City, 2022, still had a relationship. This was because many Wastewater Disposal Channels still did not meet the requirements, which risk causing dengue fever in Abeli District, Kendari City, in 2022.

Keywords: Dengue Hemorrhagic Fever (DHF), Wastewater Disposal Channel (WWDC)

Corresponding Author:
Ramadhan Tosepu; email:
ramadhan.tosepu@uho.ac.id

Published 26 May 2023

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICASI Conference Committee.

1. Introduction

Dengue Hemorrhagic Fever (DHF) is a viral infection conveyed by vectors. Dengue fever is caused by the dengue virus.. The first DHF case in Indonesia was reported in Surabaya in 1968. Since its discovery, this case has continued to show an increase every year[1]. This disease is commonly referred to as a disease whose development is very fast in the world [2].

Climate change can influence the reproduction of Aedes aegypti mosquito larvae, which cause DHF. Environmental factors around the house can also affect the breeding

of dengue mosquitoes. Residential density, unclean environment and stagnant water are breeding grounds for larvae [3].

Environmental sanitation is very closely related to the process of growth and reproduction of mosquitoes. Poor environmental sanitation induce various sickness, For instance, DHF is caused by the AedesAegypti mosquito. Aedes aegypti vector breeding grounds, according to the World Health Organization (WHO), are directly tied to factors of storing clean water, providing waste disposal facilities, and changing larval habitats..[4] . One of Indonesia's programs to reduce the incidence of BDB is the "Mosquito Nest Eradication" (PSN) program. Eradication of mosquito nests includes closing water reservoirs, draining bathtubs, burying used items and using repellene[5].

DHF is a seasonal illness that frequently recurs each year. It seems that there is no end to infecting the people of tropical and subtropical regions[6]. According to World Health Organization (WHO) data, dengue fever cases are growing year after year. The largest number of dengue cases occurred in 2019 with 5.2 million cases. The reported deaths between 200 and 2015 increased from 960 to 4032. The highest number of dengue cases were reported in Asian countries such as 101,000 cases in Bangladesh, 131,000 occurrence, the Philippines with 420,000 occurrence, and Vietnam with 320,000 occurrence. Indonesia is one of the Southeast Asian countries with the largest number of dengue cases [7]. The reported DHF cases in Indonesia in 2021 recorded 73,518 cases with a total of 705 deaths. DHF death cases have decreased compared to 2020, namely 108,303 cases and 747 deaths [8].

The Central Bureau of Statistics for Southeast Sulawesi Province on April 27 2021 reported 824 DHFcases. Kendari City had the most DHF cases, with 305, North Buton Regency had the fewest, with two, and Konawe Islands and Central Buton Regencies had none [2]. In 2020, DHF cases in Kendari City decreased compared to 2019. The number of cases in 2020 was 905 people with 9 deaths (IR = 34.48/100,000 population, CFR = 0.99%). In 2019, 1,510 cases were reported, with an average morbidity rate of around 34.8/100,000 population. [10].

Abeli Public Health Center is a public health center whose working area covers the coastal area. The coastal area is land space closely related to ocean space. Abeli Public Health Center is located in the north of the bay, most of its area is the bay and sea level with the character of the community being a coastal community. Coastal communities have high health risks that need special attention[11]. According to data, the incidence of dengue fever at the Abeli Health Care in 2021 has increased compared to the previous

year, namely 19 cases. These cases have increased when compared to the incidence of DHF with 3 cases in 2020 and 6 cases in 2019 [11].

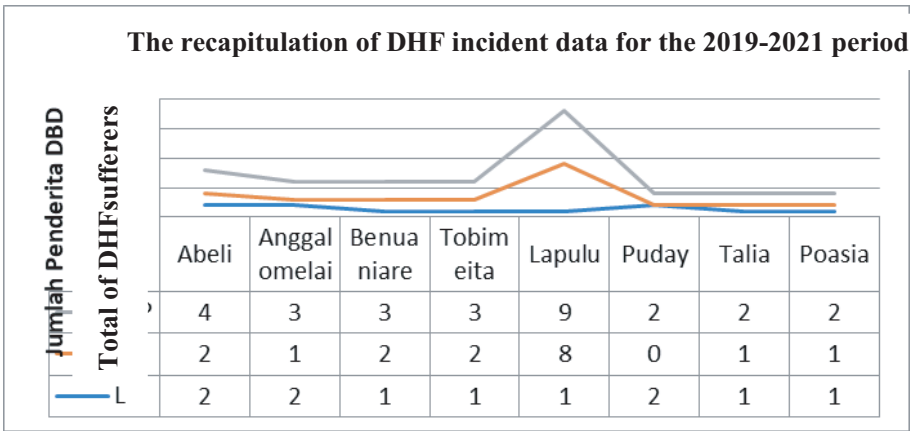
According to the above description, The researchers want to do a study called ”A Description of Dengue Hemorrhagic Fever (DHF) in the Working Area of Abeli Public Health Center, Kendari City.”

2. Methods

The study was an observational descriptive study that used secondary data from a health report in the operating region of Abeli Public Health Care in 2021. It also included information on the prevalence of Dengue Hemorrhagic Fever (DHF) in the Abeli Public Health Center’s operational region. The findings of this investigation are presented in graphs and narratives.

3. Results

The findings of this study are depicted in a line chart with the accompanying explanation:



Abeli	Anggal omelai	Benua niare	Tobim eita	Lapulu	Puday	Talia	Poasia
4	3	3	3	9	2	2	2
2	1	2	2	8	0	1	1
2	2	1	1	1	2	1	1

Figure 1: The incidence of DHF in Abeli District for the period 2019 – 2021.

Graph 1 shows a recapitulation of DHF case data in Abeli District for the 2019-2021 period. In the 2019-2021 timeframe, Lapulu District had the largest number of DHF incidences, with 9 cases, and Puday, Talia, and Poasia had the lowest, with 2 instances each.

Graph 2 shows the home condition in all villages in Abeli District in 2021.The data show that 2818 houses meet the requirements, and 379 houses do not meet the requirements.

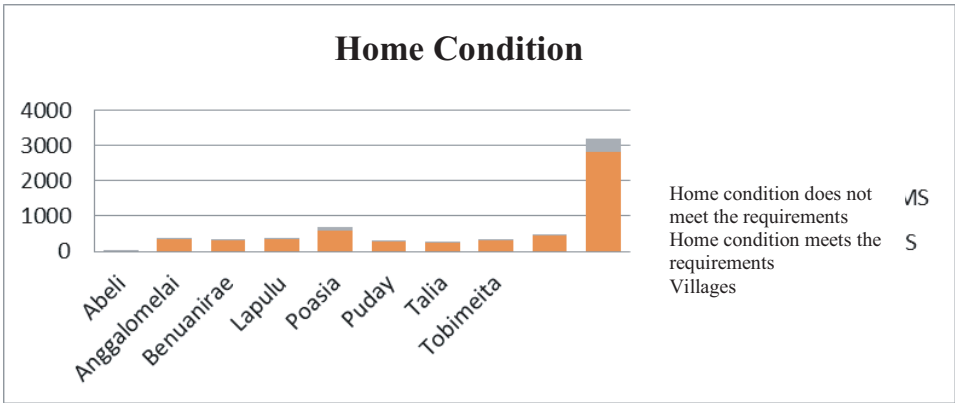


Figure 2: Family latrine facilities in 2021.

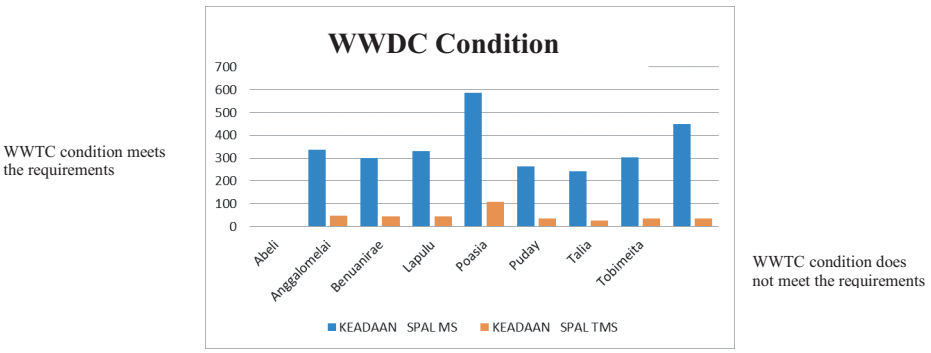


Figure 3: Quality of WWDC in 2021.

Graph 3 shows that the condition of WWDC that meets and does not meet the highest requirements in the Abeli District area is Lapulu Village, with a total of 587 that meet the requirements and 108 that do not meet the requirements.

4. Discussion

4.1. Incidence of DHF in Abeli Public Health Center's Working Area in Kendari City in 2022

Dengue Hemorrhagic Fever (DHF) is a virus-borne illness spread by the Aedes aegypti mosquito. This illness is a scary specter since it may spread swiftly in a given location. Even in endemic regions, the number of dengue cases in a month might reach tens of thousands of persons infected with the dengue virus. [13].

The Southeast Sulawesi Health Office reported 824 instances of Dengue Hemorrhagic Fever (DHF) in the region. Kendari City had the most instances, with 305, while North Buton Regency had the fewest, with only two. [9].As for the working area of AbeliPublicHealth Center, DHF cases in 2021 have increased compared to previous

years. Based on the graph, the incidence of DHF cases in 2021 was 19 cases. The most incidents were in LapuluVillage, namely 9 cases and the fewest is in Poasia, Talia, and PudaiVillages, namely 2 cases.

The incidence of DHF is related to the presence of vectors of DHF transmission, dengue virus, and human interaction between humans and the environment [14]. Residential density, the prevalence of mosquito breeding sites, mosquito density, and larvae-free rate are some of the environmental factors driving a rise in the incidence of DHF [15].

4.2. Home Conditions and the Incidence of DHF at Abeli Public Health Center in Kendari City in 2022

The prevalence of DHF is directly connected to household cleanliness, which contains Aedes aegypti mosquitoes. [16]. Environmental variables associated with the occurrence of DHF include biological environmental factors (Aedes aegypti mosquito vector density and presence of larvae), physical environmental factors (air temperature, humidity, lighting, ventilation nets, and availability of lids on containers), social environmental factors (population density, residential density, and support from health workers) [17].

In 2021, Abeli District consisted of 23,964 residents and 4,926 heads of households. The number of houses that met the requirements with the clean and healthy environmental conditions category was 2818, while 379 houses did not meet the requirements [11]. From the data we obtained, it showed that the population density data met the requirements for having a house with good ventilation, humidity, and lighting so that mosquitoes felt uncomfortable nesting in these places. Meanwhile, houses that did not meet the requirements for ventilation did not use screens, making it easier for mosquitoes to enter and bite humans in the house. Therefore, the results show that most of the conditions of community houses in Abeli District, In 2021, residences in Kendari City that do not satisfy the standards may see the growth of DHF mosquitoes, as opposed to ones that do.

4.3. The Association Between the Condition of the WWDC (Wastewater Disposal Channel) and the Incidence of DHF in the Working Area of Abeli Public Health Center, Kendari City in 2022

Closed wastewater disposal channels that meet the requirements do not pollute clean water sources and do not have the potential to become breeding grounds for disease-spreading animals. [18].

In 2021, Abeli District consisted of 23,964 residents and 4,246 houses. There were 4,246 houses with available Wastewater Disposal Channels (WWDC). From the availability of Wastewater Disposal Channels (WWDC) in the working area of Public Health Center, a total of 3,197 Wastewater Disposal Channels (WWDC) have been inspected for quality with detailed results as follows: 2,818 (66%) Wastewater Disposal Channels (WWDC) met the requirements, and 379 (9%) Wastewater Disposal Channels (WWDC) did not meet the requirements [3]. Therefore, the results indicated that Wastewater Disposal Channels that do not meet the requirements are at risk of causing the spread of dengue disease compared to sewers that meet the requirements.

5. Conclusion

Lapulu District has the greatest number of Dengue Hemorrhagic Fever (DHF) patients in Abeli District, with 9 cases, and the lowest in 3 villages namely Puday, Talia, and Poasia with 2 cases, respectively. Based on data from Abeli Public Health Center, most of the home conditions in this district meet the requirements of healthy homes. However, the data on the WWDC condition still does not meet the requirements so it can cause a risk of DHF incidents in Abeli District.

References

[1] Indonesia KK. Profil Kesehatan Indonesia, Jakarta: Kementerian Kesehatan RI, 2019.

[2] Mistawati Y, Lestari H. Forecasting prevalence of dengue hemorrhagic fever using ARIMA model in Sulawesi Tenggara Province, Indonesia. Public Health Indonesia. 2021;7(2):75–86.

[3] Marwaty M, Wahyono MT. Faktor Lingkungan Rumah dan Keajadian Demam Berdarah Dengue di Kota Palopo 2016. Jurnal Epidemiologi Kesehatan Indonesia.

2019;2(1):19–26.

[4] Hartiono EJ, Nyoman WI. ”Hubungan Antara Status Gizi Dengan Penurunan Kadar Trombosit Pada Anak Yang Menderita Demam Berdarah Dengue Di RSUP SANGLAH DENPASAR Periode Maret - Desember,” E-JURNAL MEDIKA UDAYANA /, vol. 8, no. 8, 2015.

[5] Tosepu R. Trends of dengue hemorrhagic fever in bau bau district, Southest Sulawesi province, indonesia, 2009-2014. Public Health Indonesia; 2017. pp. 147–51.

[6] Tosepu R. Factors Related to the Presence of Mosquito Eggs Trapped in Ovitraps DHF-Endemic Areas in Kendari City, Indonesia. Public Health of Indonesia. 2021;7(4):159–65.

[7] Organization WH. ”Dengue and severe dengue,” World Health Organization, 10 January 2022. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue. [Accessed 26 December 2022].

[8] K. RI. ”Profil Kesehatan Indonesia,” in Profil Kesehatan Indonesia, Jakarta, Kemenkes RI, 2021, pp. 21-29.

[9] Sultra B. ”Jumlah Kasus Penyakit Menurut Kabupaten Kota Dan Jenis Penyakit di Sulawesi Tenggara,” 17 November 2020. [Online]. Available: https://sultra.bps.go.id/statictable/2021/04/27/3075/jumlah-kasus-penyakit-menurut-kabupaten-kota-dan-jenis-penyakit-di-sulawesi-tenggara-2020.html. [Accessed 26 Desember 2022].

[10] Sultra, ”Profil Kesehatan Sulawesi Tenggara Tahun,” 15 Oktober 2020. [Online]. [Accessed 26 Desember 2022].

[11] P. Abeli, ”Data Kesehatan Puskesmas Abeli,” 2021. [Online]. [Accessed 23 September 2022].

[12] Syamsir AD. Analisis Spasial Efektivitas Fooging di Wilayah Kerja Puskesmas Makroman. Volume 1. Jurnal Nasional Ilmu Kesehatan; 2018.

[13] Syamsir AD. Analisis Spasial Efektivitas Fooging di Wilayah Kerja Puskesmas Makroman. Jurnal Nasional Ilmu Kesehatan; 2018. p. 1.

[14] Hidayat L. Pengaruh Sosiodemografi dan Kondisi Lingkungan Terhadap Kejadian Demam Berdarah Dengue (DBD) Di Unit Wilayah Kerja Puskesmas Tegal Gundi. Jurnaal Intersional; 2014. pp. 1–4.

[15] Wahyono TM. Faktor-Faktor Yang Berhubungan Dengan Kejadian Demam Berdarah dan Upaya Penanggulangannya Di Kecamatan Cimanggis. Jurnal Nasional; 2010.

[16] Mawaddah F, Pramadita S, Triharja AA. Hubungan Kondisi Sanitasi Lingkungan dan Perilaku Keluarga dengan Kejadian Demam Berdarah Dengue di Kota Pontianak. Jurnal Teknologi Lingkungan Lahan Basah. 2022;10(2):215.

[17] N. Hendayani and Y. &. I. S. Faturahman, ”Hubungan Faktor Lingkungan dan Kebiasaan 3M Plus dengan Kejadian Demam Berdarah Dengue (DBD) di Wilayah Kerja Puskesmas Manonjaya.,”. Jurnal Kesehatan Komunitas Indonesia. 2022;18(1):406–15.

[18] K. K. RI. ”Pembuatan saluran pembuangan air limbah (SPAL) Sederhana.,” in Kebijakan Diklat Kesehatan Lingkungan, Jakarta, Kementrian Kesehatan, 2018, pp. 1-20.