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Analysis of Community Knowledge about Dengue Hemorrhagic Fever (DHF) and DHF Prevention Measures in the Working Area of the Martoba Pematangsiantar Community Health Center

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ABSTRACT

Dengue Hemorrhagic Fever (DHF) is one of the important public health problems in Indonesia and often causes an Extraordinary Event (KLB) with large deaths. Dengue cases in 2022 in Pematang Siantar City amounted to 629 cases. The purpose of this study is to Identify Public Knowledge about DHF, Identify Community Actions in DHF prevention, Analyze the Relationship between Public Knowledge about DHF and Dengue Hemorrhagic Fever (DHF) Prevention Actions. The research method used is a correlation design with a cross-sectional approach and the test carried out is the chi-square test. In this study, the population was 7,030 people and the type of sample in this study was Non-probability sampling with Purposive sampling technique. where the number of samples was 99 respondents. The results of this study are There is a Relationship between Public Knowledge about DHF and Community Actions when carrying out DHF prevention in the Working Area of UPTD Puskesmas Bane where Ha is accepted obtained with a significance value (p) of 0.035 <0.05. The significance value of the analysis of the relationship between knowledge and DHF prevention measures is <0.05. The conclusion of the study is that there is a significant relationship between community knowledge about DHF and DHF prevention measures at the Bane Community Health Center UPTD. Suggestions that can be taken are that the city government and the health service team are expected to provide more detailed information about DHF knowledge and correct DHF prevention measures, and to make posters or advertisements about DHF as well as to community organizations or local RT/RW to more routinely carry out cleaning activities in the surrounding residential areas.

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INTRODUCTION

Dengue Hemorrhagic Fever (DHF) was first discovered in 1635 in the French West Indies (Howe, 1977 in WHO - SEARO, 2011). It spread to Asia in 1779, Europe in 1784, South America in 1835, England in 1922, and Queensland, Australia in 1981 (Widoyono, 2005). Currently, DHF is an epidemic in more than 100 countries in Africa, the Americas, the

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Eastern Mediterranean, Southeast Asia, and the Western Pacific. The Americas, Southeast Asia, and the Western Pacific are the regions with the most cases, with Asia representing approximately 70% of the global disease burden (WHO, 2019).

Dengue hemorrhagic fever (DHF) infection remains a global health problem. In the past 20 years, the frequency of DHF cases has increased sharply. In 2010, more than 2.4 million DHF cases were reported to the World Health Organization (WHO), and in 2019, this number reached 5.2 million. Globally, the WHO reports 100-400 million DHF infections annually. Asia has the highest percentage of DHF cases, accounting for 70% of cases annually (WHO, 2021).

Dengue fever in Indonesia also continues to be a public health problem. The number of cases of dengue fever in Indonesia tends to fluctuate, this can be seen in 2018 there were 65,602 cases, then increased significantly in 2019 to 138,127 cases, then decreased in 2020 to 108,303 cases and decreased again in 2021 to 73,518 cases (Ministry of Health of the Republic of Indonesia, 2021).

Although the incidence of dengue fever tends to increase, the mortality rate (CFR) due to dengue fever has decreased over time. The dengue mortality rate of 0.69% in 2020 has reached the national target indicator (<1%), and has met the WHO NTD roadmap target of less than 0.8% (WHO, 2020). However, there are still 7 provinces and 186 districts/cities with mortality rates >1%, including Maluku (6.5%), Central Java (1.9%), Maluku (1.9%), and Maluku (1.9%).

North 1.9% North Kalimantan 1.6%, North Sulawesi 1.5%, Riau 1.3%, and South Kalimantan 1.1%. Over the past two years, Maluku Province has had the highest mortality rate nationally, with an increasing trend from 2.1% in 2019 to 6.5% in 2020 (Ministry of Health). Health, 2020).

The main target of the dengue hemorrhagic fever (DHF) program set out in the 2020-2024 National Medium-Term Development Plan (RPJMN) and the 2020-2024 Ministry of Health Strategic Plan is for 90% of districts/cities to have a DHF incidence rate (IR) of ≤49/100,000 population by 2024, which will be achieved in stages. This target is expected to be achieved through activities such as increasing vector control innovation (integrated and biological vector control), strengthening case management, increasing advocacy and communication, strengthening the public health laboratory system for surveillance, strengthening reporting and real-time surveillance, build systemearly warning and improvement regional capacity (Ministry of Health, 2020).

In North Sumatra Province in 2015, there were 5,695 cases, representing 41.4% of the total number of deaths, and 45. In 2016, the number was 8,715 cases with a percentage of 63.3% and a death toll of 60 people. In 2017, there was a decrease with a number of 5,454 cases with a percentage of 39.6% and a death toll of 28 people. In 2018, there were 5,786 cases of dengue fever, with a percentage of 40.1% and a death toll of 26 people. There was an increase in the number of cases compared to 2017 and 2018. In 2019, there were 7,584 cases of dengue fever with a percentage of 52.1% and a death toll of 37 people. However, the number of deaths decreased from the previous year, namely the

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Case Fatality Rate (CFR) in 2019, which was 0.5% (Health Profile of North Sumatra Province, 2019). In 2022, the number of dengue fever cases was 8,514 cases and in 2023 until March it was recorded 1,265 cases of dengue fever. The largest dengue fever cases and deaths occurred in 2015 and 2016 (North Sumatra Provincial Health Profile, 2023).

Data on dengue fever cases in Pematang Siantar City per 100,000 population in 2020 was 223 and the number of deaths was 10 people, in 2021 the number of dengue fever cases decreased by 104 cases and the number of deaths was 7 people, while in 2022 the number of dengue fever cases increased significantly with the number of cases being 629 cases and the number of deaths being 13 people (Pematang Siantar City Health article, 2022).

According to research by Tika Fransiska et al in Malang city, it was proven that almost half (46.7%) of parents' knowledge about Dengue Hemorrhagic Fever was lacking, the majority (53.3%) had inadequate Dengue Hemorrhagic Fever prevention behavior, while the results of the Spearman rank test obtained a p value = 0.05 with a correlation value of 0.654, so it can be concluded that the better the knowledge, the better the prevention of Dengue Hemorrhagic Fever. the better the behavior of preventing Dengue Hemorrhagic Fever (Tika Fransiska et al., 2019).

Research in Kupang City showed no significant relationship between knowledge and attitudes and dengue fever incidence. Meanwhile, actions were significantly related to dengue fever incidence. Empowerment efforts public WhichPrioritizing preventive measures is essential to reduce the risk of dengue fever (Putra AU, 2020).

The proportion of mosquito nest eradication (PSN) activities carried out by households in Indonesia remains low. According to data from the 2018 Basic Health Research, the proportion of PSN implementation for national 3M activities was only 31.2%. Mosquito nest eradication is a form of health behavior that involves disease prevention. This requires special attention in efforts to break the chain of dengue fever transmission in the community.

Behaviorpublic veryBehavior is crucial in this context, as it relates to knowledge and action. Lack of knowledge can influence a person's health behavior, leading to a high rate of disease transmission, including dengue fever (DHF), which carries a high risk of transmission and spread. DHF, an environmentally-based disease, is also influenced by both personal and environmental hygiene. Good sanitation, meeting health requirements, and supported by good personal hygiene, can reduce the risk of disease, including DHF. Good personal hygiene and environmental sanitation can be achieved if supported by positive community actions or actions that support the DHF eradication program (Adventus et al. 2019).

METHODOLOGY

This type of research uses a correlation design with a cross-sectional approach. Correlational research is a type of non-experimental research method in which a researcher measures two variables, understands, and assesses the statistical relationship. To determine

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the relationship between knowledge of Dengue Hemorrhagic Fever (DHF) and dengue fever prevention measures, data for the independent and dependent variables will be collected simultaneously.

RESULTS AND DISCUSSION

Based on the research results and information obtained from interviews with several research informants at the Banguntapan I Bantul Yogyakarta Health Center, the following results were obtained: Description of Respondent Characteristics. Based on the sample selected, all people who came to visit the UPTD Martoba Health Center, from teenagers to the elderly, amounting to 99 respondents, this study included age, gender, education and occupation.

Tabel 5.2 Distribusi frekuensi responden berdasarkan Jenis Kelamin

		Frequency	Percent %
Valid	Laki laki	40	40,4
	Perempuan	59	59,6
	Total	99	100,0

Based on table 5.2, it is known that the gender of the 99 respondents is male with a total of 40 people with a percentage of 40.4% and the female gender is the largest with a total of 59 people with a percentage of 59.6%.

Tabel 5.3 Distribusi frekuensi responden berdasarkan Pendidikan

	Frequency	Percent
SD	4	4,0
SMP	18	18,2
SMA/SMK/SLTA Sederajat	56	56,6
Perguruan Tinggi (PT)	21	21,2
Total	99	100,0

Based on table 5.3 above, the respondents' education levels are grouped into 4 categories, namely elementary school, middle school, high school/vocational school/equivalent high school, and tertiary education (PT). It is known that the last education level of respondents was The respondents were 4 elementary school students (4.0%), 18 junior high school students (18.2%), 56 senior high school students (56.6%), and 21 university students. (21.2%). Based on the data in table 5.3, it can be concluded that the most common level of education is high school/vocational school/high school.

Tabel 5.4 Distribusi frekuensi responden berdasarkan usia

	Frequency	Percent
usia 10-30 tahun	41	41,4
usia 31-50 tahun	31	31,3
usia 51-70 tahun	22	22,2
usia 71-85 tahun	5	5,1
Total	99	100,0

Based on table 5.4, it is known that respondents aged 10-30 years have the highest frequency, namely 42 respondents (41.4%), respondents aged 231-50 has a frequency of 31 respondents (31.3%), respondents aged 51-70 years have the highest frequency of 22 respondents (22.2%), while respondents aged 71-85 years have a frequency of 5

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respondents (5.1%). Based on table 5.4, it can be concluded that the most common age is 10-30 years old.

Tabel 5.5 Distribusi frekuensi responden berdasarkan Pekerjaan

Responen		Freqncy	Percent
Valid	Bekerja	46	46,4
	Tidak Bekerja	35	35,3
	Pelajar	18	18,2
	Total	99	100,0

Based on table 5.5, it is known that 46.4% of respondents are working, 35.3% are not working and 18.2% are students. Based on table 5.5, it can be concluded that the respondents who work the most are 46.4%.

Univariate Analysis

Level of Public Knowledge about Dengue Hemorrhagic Fever (DHF)

Tabel 5.6 Distribusi frekuensi responden berdasarkan Pengetahuan

		Frequency	Percent
Valid	Kurang baik	87	87,9
	Baik	12	12,1
	Total	99	100,0

Based on table 5.6, the research results show that of the 99 respondents, 12 respondents (12.1%) had good knowledge and 12 respondents (12.1%) had poor knowledge. 87 respondents (87.9%). Knowledge is information resulting from knowledge, and this occurs after a person senses a particular object. Knowledge or cognitive is a very important domain in shaping a person's actions (over behavior). Data information is merely capable to inform or evenlf it causes confusion, then knowledge has the ability to direct action. This has the potential to take action (Notoatmodjo, 2010).

The results of the study showed that the majority of respondents had high school/vocational high school/senior high school education, with 56 respondents (56.6%). Although the average education level of respondents was high school, their level of knowledge about dengue fever was still poor, for example, with the example of the color of the mosquito that transmits dengue fever, most respondents answered brown with white spots, whereas the actual color of the mosquito that transmits dengue fever is black with white spots. Therefore, information or counseling about dengue fever is needed to support health.

Community Actions in Dengue Fever Prevention

5.7 Distribusi frekuensi responden berdasarkan tindakan pencegahan DBD responden

	Frequency	Percent
Baik	19	19,2
Kurang Baik	80	80,8
TOTAL	99	100

Based on Table 5.7, it is known that the majority of respondents are categorized as having poor dengue fever prevention measures, namely 80 people (80.8%). Respondents who are categorized as having poor behavior are respondents who let water stagnate around the house, do not clean the bathtub at least once a week, do not sprinkle abate

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powder in water reservoirs, do not check for larvae in water reservoirs, and like to hang clothes inside the house. Respondents also do not involve their families in dengue fever prevention measures, especially for parents who do not involve their children in carrying out dengue fever prevention from an early age, such as not hanging clothes at home, not letting water stagnate, not eating fast food or junk food and others.

Bivariate Analysis

Tabel 5.8 Pengetahuan Responden * Tindakan Responden

Crosstabulation

			TINDAKAN RESPONDEN		To tal
			Baik	Kurang baik	
PENGETAHUAN RESPONDEN	Tidak baik	Count	14	73	87
		% within PENGETAHUAN RESPONDEN	16,1%	83,9%	10 0, 0 %
	Baik	Count	5	7	12
		% within PENGETAHUAN RESPONDEN	41,7%	58,3%	10 0, 0 %
Total		Count	19	80	99
		% within PENGETAHUAN RESPONDEN	19,2%	80,8%	10 0, 0 %

Based on the data in Table 5.8, it shows that of the 99 people who have poor knowledge with poor actions, there are 73 people (83.9%), those who have poor knowledge but good DHF prevention actions are 14 people (16.1%). Meanwhile, good knowledge with poor actions are 7 people (58.3%) and good knowledge with good actions are 41.7%.

The output produced is in the form of LB 1 information, the hope being that the information is accurate, relevant, timely and complete.

Tabel 5.9 hasil perhitungan dengan Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4,447[a]	1	,035		
Continuity Correction[b]	2,951	1	,086		
Likelihood Ratio	3,753	1	,053		
Fisher's Exact Test				,050	,050
Linear-by-Linear Association	4,403	1	,036		
N of Valid Cases	99				

Based on the data in table 5.9, the results of the analysis of the relationship between knowledge and dengue fever prevention measures obtained a significance value (p) of 0.035 < 0.05. The significance value of the results of the analysis of the relationship between knowledge and dengue fever prevention measures where less than 0.05 means that there is a significant relationship between knowledge and dengue fever prevention measures. To determine the results of the strength of the relationship between community knowledge regarding DHF with DHF prevention measures, the correlation coefficient was obtained with a value of 0.212, which means that the better the community's knowledge about DHF, the better the community's preventive measures against DHF in Martoba Village, Pematang Siantar City.

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https://ejournal.seaninstitute.or.id/index.php/healt

Discussion

Knowledge Respondents About Dengue fever in Martoba Village

Based on Table 5.9 study This presented in narrative form from the results of research conducted by the research. In this discussion is adjusted to the purpose of the research, namely to determine the level of knowledge and actions of the community in Martoba Village, Siantar Martoba District about dengue fever (DHF). The subjects in this study were 99 people (100%) respondents who came to visit the UPTD Martoba Health Center. The majority of the community is self-employed in Martoba Village, Siantar Martoba District. Viewed by age group, the largest is the 10-30 year age group. In addition, seen from the educational aspect, most respondents had a high school/vocational school/high school education or equivalent. This shows that respondents should have good knowledge and good skills in carrying out preventive measures. As education is one of the factors that is the basis for carrying out preventive measures for Dengue Fever (DHF).

Based on the results of this study, it can be seen that during the period from school to family life, it is hoped that people will be more receptive to information about health issues, especially dengue fever, which affects people of all ages and genders. However, it turns out that the majority of the Bane sub-district community is largely unaware of dengue fever. In terms of education, the level of education will influence the response that comes from outside, someone with a higher education will have a broader perspective (Wawan and Dewi, 2016).

Besides education, employment also influences a person's knowledge. According to Wawan and Dewi (2016), work influences a person's life. Therefore, their level of thinking ability will influence their knowledge. The research results showed that the majority of respondents (31 people) were self-employed. The majority of self-employed respondents also reported poor knowledge, as their busy work schedules meant they had little interaction with their environment and local residents. This also impacted the information they obtained, for example, about dengue fever.

This study shows knowledge about dengue fever prevention such as signs of people suffering from dengue fever, mosquito breeding sites and how dengue fever spreads. Prevention methods include burying used goods and cans, covering and draining water reservoirs. Knowledge plays a role in determining respondents' actions. Respondents who understand the dangers of dengue fever will be more careful in carrying out daily activities because they will realize that people with dengue fever can bring disaster to themselves (death) and their families because they are considered people who can transmit the disease to others.

Community Actions in Dengue Fever Prevention in Martoba Subdistrict

The results of this study show that the majority of respondents carried out bad actions, namely 80 respondents (80.8%), while for respondents who carried out good actions, there were 19 respondents (19.2%). This is supported by research by Mardiana (2009) which shows that the actions being carried out are bad. 83.3%. However, there is a discrepancy between knowledge and practice. Looking back, many respondents (121)

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drained and cleaned bathtubs or water reservoirs at home, while 144% of respondents (144%) regularly cleaned, buried, or burned used items that could become breeding grounds for mosquitoes. (Notoadmodjo in Mardiana, 2009).

The Aedes aegypti mosquito bites in the morning and afternoon, when children are still studying in the classroom. It also prefers to nest in damp, dark places. The initial symptoms of dengue fever are fever accompanied by red spots on days 1-3. On days 3-5, the fever subsides, and children are willing to eat, drink, and play. However, they still appear lethargic, restless, and have abdominal pain. This is when parents play a crucial role in the child's care and recovery (Unair article, 2022).

A person can act or behave in a new way without first knowing the meaning of the stimulus he received, in other words, a person's actions do not have to be based on knowledge, which is more lasting than behavior based on knowledge and more lasting than behavior that is not based on knowledge. The high level of respondents' knowledge about DHF is not in line with the implementation of DHF prevention measures/practices, so that suspicion of DHF cases in the Bane Village area is still quite high.

The results of this study are in line with (Hidayat in Mardiana 2009) who stated that although the level of knowledge of respondents was in the good category, namely 66 respondents (90.4%). However, only 13 respondents (17.8%) were categorized as good in their efforts to implement dengue fever prevention practices or measures. According to the Ministry of Health (2020), an Extraordinary Event (KLB) of Dengue Fever can be avoided if the Early Warning System (SKD) and vector control are carried out properly. good, integrated, and sustainable.Vector control through vector surveillance is regulated in the Ministry of Health No. 581 of 1992, that Mosquito Nest Eradication (PSN) activities are carried out periodically by the community coordinated by the RT/RW in the form of PSN with the core message of 3M plus.

The results of research conducted by Manalu (2010) found that behavior towards preventing the transmission of dengue fever was still less than correct, this was reflected in the majority of respondents stating that they had not implemented 3M, respondents only carried out community service and were less focused on routinely draining water reservoirs, not covering water reservoirs, not burning or burying used goods which were suspected of being a breeding ground for dengue-transmitting mosquitoes.

Based on the explanation above, it can be simply concluded that poor dengue fever prevention behavior can be caused by personal hygiene, which is related to the habit of not keeping the environment clean and healthy, especially in relation to dengue fever prevention. Therefore, the most important thing in this case is to increase public perception of the importance of the PSN program in the management and prevention of dengue fever, so that the public will know and understand this PSN DBD program and ultimately have a good perception and are willing to support and implement the PSN DBD program with full awareness.

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https://ejournal.seaninstitute.or.id/index.php/healt

CONCLUSION

The results of this study conclude that: The knowledge of the community in Martoba Village, Pematang Siantar City, almost all respondents were categorized as poor, where the results of this study showed that out of 99 respondents, 12 respondents (12.1%) had good knowledge and 87 respondents (87.9%) had poor knowledge. The actions of the community in Martoba Village, Pematang Siantar City, almost Overall, respondents were categorized as less than good, where the results of this study showed that out of 99 respondents, 19 respondents (19.2%) had good knowledge and 80 respondents (80.8%) had less knowledge. There is a relationship between public knowledge about dengue fever and public actions when carrying out dengue prevention in the UPTD Martoba Health Center work area. This shows that of the 99 people who have poor knowledge with poor actions, there are 73 people (83.9%), those who have poor knowledge but good dengue prevention actions are 14 people (16.1%). Meanwhile, good knowledge with poor actions is 7 people (58.3%) and good knowledge with good actions as many as 5 people (41.7%). The results of the analysis of the relationship between knowledge and dengue fever prevention actions obtained a significance value (p) of 0.035. The significance value of the results of the analysis of the relationship between knowledge and dengue fever prevention actions is less than 0.05.

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