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Research Article

Community Behavioral Knowledge about the Dengue Fever Eradication Program in Sibolahotang Village, SAS, Toba Regency, 2025

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Abstract: Dengue Hemorrhagic Fever (DHF) is an acute febrile illness found in tropical regions and caused by four serotypes of viruses from the Flavivirus genus, family Flaviviridae, also known as breakbone fever. DHF has now become an epidemic in more than 100 countries. This disease can be effectively managed through prevention efforts that focus on changing community behavior, including knowledge, attitudes, and actions in responding to the disease. This study aims to describe community behavior regarding the Dengue Fever Eradication Program (PSN) in Toba Regency. The method used in this study was descriptive analytical with a cross-sectional approach. The sample used in this study was 100 randomly selected respondents. Data were collected through a questionnaire designed to explore community knowledge, attitudes, and actions towards the dengue eradication program. Data were then presented in tabular form and analyzed quantitatively. The results showed that community knowledge of the National Dengue Fever Prevention and Eradication Program (PSN) was quite good, with a score of 90.14%. However, knowledge about dengue fever itself varies, with nearly half of respondents reporting poor knowledge. Public attitudes toward dengue fever eradication efforts were very positive, with 100% of respondents expressing support for dengue eradication efforts. Public support for dengue fever eradication efforts was also generally positive, with a score of 87.25%. The study concluded that public attitudes toward dengue fever eradication efforts in Toba Regency were generally positive. However, there are still gaps in public knowledge about dengue fever that need to be addressed through further education. This study provides important insights for the government and relevant parties to improve the effectiveness of dengue eradication programs in the region.

Keywords: Community Behavior, Dengue Fever Eradication, Eradication Program, Knowledge, Sibolahotang Village.

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1. Introduction

Environmentally-based diseases remain a public health problem. One disease caused by inadequate environmental sanitation is dengue fever (DHF). Dengue fever was first suspected in Indonesia in 2024, first appearing in Surabaya and Jakarta, and then drastically increasing and spreading throughout the country. This disease can also cause outbreaks (KLB) (Indonesian Ministry of Health, 2024). Dengue fever is an infectious disease caused by the dengue virus which is transmitted through the bites of the Aedes aegypti and Aedes albopictus mosquitoes. It is currently a public health problem that has not been fully resolved due to the difficulty of breaking the chain of transmission and the lack of a vaccine to prevent it.

In 2023, there were 673 cases of dengue fever in Tobasa Regency with 8 deaths (data from the Tobasa Regency Health Office, 2023), while the Laguboti Health Center had 101 cases of dengue fever with 1 death, the most dengue fever sufferers occurred in Sibolahotang SAS Village, namely 70 cases (data from the Tandang Buhit Health Center, 2024). Efforts to prevent the spread of dengue fever require the role of families in

implementing the Eradication of Dengue Fever Mosquito Nests (PSN DBD) so that every house is free from Aedes aegypti mosquito larvae (Ministry of Health of the Republic of Indonesia, 2000). Laguboti District, as an endemic area for dengue fever, really needs the role of families in the PSN DBD if this disease is to be eliminated.

Assessing this situation, it is important to identify family behavior towards PSN DBD. Human behavior problems are beneficial (positive) and detrimental (negative). If related to the eradication of dengue fever mosquito nests, positive behaviors such as making efforts to drain, cover, bury (3M) while negative behaviors are a contradiction of this effort. Community behavior in eradicating dengue fever mosquito nests in Laguboti District has not been optimally realized, because there are still garbage that is thrown carelessly/scattered in the yard and in residential areas such as: used cans, used tires, shells, and still found breeding and breeding places for dengue fever mosquitoes inside and outside the house, all of which can be factors causing the still high number of dengue fever cases.

Considering that the highest number of dengue fever cases is in Laguboti District, the working area of the Laguboti Health Center, the author is interested in raising the issue of dengue fever, especially the behavior of families in Laguboti District towards the PSN DBD efforts. Based on the above background, this question will be formulated as follows: How is the behavior of the Community regarding the Eradication of Dengue Hemorrhagic Fever in Laguboti District, Tobasa Regency? The general objective of this study is to obtain an overview of the behavior of the Community regarding the Eradication of Dengue Hemorrhagic Fever in Sibolahotang Village, SAS, Toba Regency. The purpose of the study is: Environmentally based diseases are still a public health problem to date. One of the diseases caused by environmental sanitation conditions that do not meet health requirements is dengue hemorrhagic fever (DHF). Dengue hemorrhagic fever in Indonesia was first suspected to have spread in Surabaya and Jakarta in 2023 and then drastically increased and spread throughout Indonesia. This disease can also cause extraordinary events (KLB) (Ministry of Health of the Republic of Indonesia, 2024).

Dengue hemorrhagic fever is an infectious disease caused by the dengue virus which is transmitted through the bite of the Aedes aegypti and Aedes albopictus mosquitoes, so that currently it is still a public health problem that cannot be fully resolved because of the difficulty of breaking the chain of transmission and the lack of a vaccine to prevent it. In 2023, cases of dengue hemorrhagic fever in Tobasa Regency were 673 people suffering from DHF with 8 deaths (data from the Tobasa Regency Health Office, 2008), while the Laguboti Health Center had 101 cases of DHF with 1 death, the most DHF sufferers occurred in Laguboti District, namely 70 cases (data from the Tandang Buhit Health Center, 2023).

Efforts to prevent the spread of dengue fever require the role of families in implementing the Eradication of Dengue Fever Mosquito Nests (PSN DBD) so that every house is free from Aedes aegypti mosquito larvae (Ministry of Health of the Republic of Indonesia, 2024). Sibolahotang SAS Village, as a dengue endemic area, really needs the role of families in the PSN DBD if this disease is to be eliminated. Assessing this situation, it is important to identify family behavior towards the PSN DBD. Human behavior problems are beneficial (positive) and some are detrimental (negative). When linked to the eradication of dengue mosquito nests, positive behaviors such as carrying out efforts to drain, cover, bury (3M) while negative behaviors are a contradiction to these efforts. Community behavior in eradicating dengue fever mosquito nests in Laguboti District has not been optimally realized, because there are still rubbish that is thrown away carelessly/scattered in the yard and in residential areas such as: used cans, used tires, coconut shells, and there are still places where dengue fever mosquitoes breed and breed inside and outside the house, all of which can be causal factors that are still contributing to the high number of dengue fever cases.

Considering that the highest number of dengue fever cases is in Laguboti District, the working area of the Laguboti Community Health Center, the author is interested in raising the issue of dengue fever, especially the behavior of families in Laguboti District towards the PSN DBD efforts. Based on the above background, this problem will be formulated as follows: How is the behavior of the Community regarding the Eradication of Dengue Fever in Sibolahotang Village SAS

2. Research Methods

This study used a household survey method with a descriptive approach. The study was conducted in Laguboti District, Tobasa Regency, North Sumatra Province, which is an endemic area for dengue fever. The general objective of this study was to obtain an overview of community behavior regarding dengue fever control in Sibolahotang Village, SAS, Toba Regency. The research objectives were:

1. To obtain an overview of community knowledge about the eradication of Dengue Hemorrhagic Fever in Sibolahotang Village, SAS, Toba Regency.
2. To obtain an overview of community attitudes regarding the eradication of Dengue Hemorrhagic Fever in Sibolahotang Village, SAS, Toba Regency.
3. To obtain an overview of community actions regarding the eradication of Dengue Hemorrhagic Fever in Sibolahotang Village, SAS, Toba Regency.

This method was chosen because it is the best way to obtain information from the head of the family, family members, home and their environment. (Notoatmodjo, 2005). The population in this study was the community in Laguboti District, Tobasa Regency. The determination of the sample size taken was 345 samples. Furthermore, for the selection of family samples in each environment, *proportional random sampling was taken* . That is, by randomly taking the desired number of samples in each environment. The inclusion criteria for this study were heads of families who had lived for more than 1 year and were willing to be respondents. The exclusion criteria in this study were heads of families who were not present at the time of the survey.

3. Results And Discussion

A person's activities are closely related to their type of employment. The variety of respondents' occupations indicates that most respondents are housewives (IRT). Being a housewife without a job outside the home certainly supports their activities in carrying out routine activities at home, such as maintaining and maintaining the beauty of the inside and around their residence. Conversely, those who work for the private sector, government, or self-employed usually spend more time outside the home related to their work activities. In this case, the role of housewives within the family is important, because almost every health problem, from its inception to its resolution, is influenced by the family. The family as a group can cause, ignore, prevent, or correct problems within its own group.

The distribution of respondents' education shows that respondents with a high school diploma/equivalent are 188 (54.50%) and college 83 (24.05%) so that the total is 271 (78.55%) and those who answered poorly to the question regarding the understanding of Dengue Hemorrhagic Fever are 94 (27.25%). Here it can be seen that the good level of education of respondents in high school and college education 170 (49.26%) does not mean they know/can answer all the questions asked by the researcher. This shows that not only respondents with lower education levels, namely elementary school/equivalent and junior high school/equivalent, who do not know about the definition and transmission of Dengue Hemorrhagic Fever, but also respondents who have received higher education, namely high school/equivalent and college.

Research conducted on 345 respondents found that 306 (88.69%) respondents were of productive age (20-59 years). Meanwhile, the remaining 39 (11.30%) were aged 60-69 years, apart from those aged 20-59 years who were found in the research to participate in community service work to clean the environment. The study, conducted on 345 respondents, found that 280 (81.16%) were female, while only 65 (18.84%) were male. Therefore, it is hoped that the current PSN for dengue fever can be maintained and even further improved.

Based on the data, it shows that respondents who have good knowledge are 311 (90.14%0 of all respondents. This study is associated with the level of education showing that respondents with a good level of education of high school and college 170 (49.26%) are not necessarily able to answer all questions asked by researchers, especially about the definition and method of transmission of dengue fever. However, respondents' knowledge of dengue fever PSN is generally good 311 (90.14%). This can be influenced by several things, including: whether or not someone has received counseling about dengue fever PSN and the source from which respondents get information about. Eradication of Dengue Hemorrhagic Fever Mosquito Nests. In this study, respondents

obtained information from formal sources 54 (16.41%). Information from formal sources will be more complete and intact when compared with information from non-formal sources. This condition shows us that knowledge plays a very important role in the process of changing attitudes and behavior, from unhealthy behavior to behavior that is beneficial for health.

Respondents' knowledge about how Dengue Hemorrhagic Fever is transmitted is through the Aedes aegypti mosquito, but respondents did not know that the Dengue virus is the cause of Dengue Hemorrhagic Fever. Knowledge of where the Aedes aegypti mosquito breeds is said to be good because, most of the respondents knew that it was clear, stagnant water and others answered more completely, namely in places/containers that are not in direct contact with the ground. Respondents' knowledge about how to eradicate Dengue Fever by the 3M method is very good because most of them answered correctly, this means that most respondents have good knowledge about the Aedes aegypti mosquito breeding and the consequences if these breeding places are left alone, then this good knowledge allows respondents to clean their homes from Dengue Hemorrhagic Fever Mosquito Nests. This study on respondents' knowledge of PSN DHF is mostly good, but the role of formal figures such as health workers and information from the mass media is very necessary in providing recommendations and information about PSN DHF (Ministry of Health of the Republic of Indonesia, 2023).

Attitude is a tendency to act toward or reject environmental factors. Attitude describes a person's likes or dislikes towards an object. Attitudes are often derived from personal experience or from others. There are four main reasons why someone behaves in a certain way. These four things are: Knowledge, Belief, Attitude, and important people as references (Notoatmodjo, 2023). Respondents' attitudes towards the Dengue Fever Prevention and Control (PSN) efforts fell into the positive attitude category (345%, 100%). This indicates that the community has a tendency to respond positively to the PSN efforts. Things that are considered are that positive attitudes towards health values are not always manifested in concrete actions. This is due to several reasons, namely: attitudes will be manifested in actions depending on the situation at that time, attitudes will be followed or not followed by actions that refer to the experiences of others, also based on the extent or lack of a person's experience, and in any society, values always apply that are the guideline for each person in organizing community life (Notoatmotjo, 2023).

From the data obtained, that the majority welcomed/agreed with the activities to prevent Dengue Hemorrhagic Fever. This is proven by the agreement of 345 (100%) to the PS DBD actions, namely draining and closing water reservoirs, burying/removing used items that can collect rainwater, also for respondents who have water reservoirs because it is difficult to get water, agreed to be given abate powder. But respondents who did not agree were given abate powder because they did not collect water. Also regarding the implementation of the Ovitrap method which is being promoted by the Health Office, respondents welcomed the effort because it was considered very good.

Human behavior is the result of all kinds of experiences and human interactions with their environment that are manifested in knowledge, attitudes and actions. In other words, behavior is an individual's reaction to stimuli originating from outside or from within themselves. This response can be passive (without action) or active (taking action). Family actions in the PSN DBD in this study include their participation in the PSN DBD by implementing 3M (draining, covering and burying), participating in the success of prevention and control efforts for Dengue Hemorrhagic Fever through community service cleaning the environment from the presence of Dengue Hemorrhagic Fever mosquito nests, and Participation in counseling activities. Respondents' actions to drain water reservoirs, mostly once a week, even those who do not have water reservoirs drain water reservoirs every day. This shows that most people have understood that draining water reservoirs is necessary to prevent the breeding of Aedes aegypti mosquitoes.

Another action is to close water reservoirs. Respondents' actions include throwing away/removing used items that are no longer used (cans, bottles, tires, etc.) which are media/breeding grounds for Aedes aegypti mosquitoes. Cleaning the yard, gutters, and not hanging clothes in random places are efforts to prevent Aedes aegypti mosquitoes from hiding at night. Also, other efforts carried out by respondents during the day include using electric mosquito repellent/bakers, and some also apply lotion (anti-

mosquito) to children while at school, and some also use fans/AC in their rooms to avoid being bitten by Aedes aegypti mosquitoes.

Respondents' actions in the PSN DBD through community service cleaning the residential environment were carried out at each respondent's home. Respondents' actions in the PSN DBD, found 216 (62.61%) of all respondents included in the good category, this is because the Government provided Garbage Transport Vehicles, and 129 (37.39%) respondents put used items that were no longer used in front of the house and then collected by cleaning staff, but if not immediately collected it will be a predisposing factor for the transmission of dengue fever. Family behavior in the actions of respondents mostly showed good PSN behavior, while those who participated in PSN action outreach activities were partly not through direct counseling by health workers but from print and electronic media 280 (81.16%), but respondents' actions in the PSN DBD were generally good 301 (87.25%). Community attitudes toward dengue fever (PSN) in Toba Regency are generally positive, but health issues are influenced by three other factors: the environment, the availability of healthcare facilities, and heredity. These factors were not examined in this study. Family attitudes toward dengue fever (PSN) in Toba Regency are generally positive, but health issues and heredity are also factors not examined in this study.

4.Conclusion and Suggestions

The conclusion that can be drawn from this study is: Family knowledge about eradicating Dengue Fever Mosquito Nests is good. Family attitudes in efforts to eradicate Dengue Fever Mosquito Nests have shown good attitudes. Family actions in eradicating Dengue Fever Mosquito Nests are generally good. Suggestions " For Community Health Centers, the quality and quantity of Dengue Fever counseling should be improved because the quality and quantity of counseling can improve family knowledge/education. For the Government/Village Head, by more activating activities that support environmental cleanliness. Community participation in this case, health cadres who have been trained to check Aedes aegypti mosquito larvae from house to house.

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