

## Original Research Article

# The illustration of behavioral health determinants for dengue fever control measures in Motoboi Kecil public health center, Kotamobagu city

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## ABSTRACT

**Background:** Behavioral health determinants is the situation of someone who has one of the determining factors to determine their own behavior; predisposing, reinforcing, and enabling. Those factors have been materialized in Puskesmas Motoboi Kecil, Kotamobagu city in action, physical environment nor public figures where those factors can influence the effort in dengue fever control. The aim of this research generally is to get the illustration of behavioral health determinants for dengue fever control measures in Puskesmas Motoboi Kecil, Kotamobagu city.

**Methods:** The method of this research was using qualitative research type. The data collection was done by deep interview with interview guidelines and also by recording tape. The data from interview was processed and analyzed and then presented in narrative text. The data validity checking was using the triangulation method.

**Results:** The research result of the action of dengue fever control measures with the result of the deep interview that the people pay less attention to environmental health and healthy life style. Furthermore, control of the dengue fever would only be done when one of the people in Motoboi Kecil district got dengue fever while the community leaders or public figures only participated in the empowerment of the community health but not routinely.

**Conclusions:** The conclusion of this research is that the behavioral of a person can influence in every effort in controlling dengue fever. To control their behavior, it needs the desire and awareness for individuals and groups to improve the healthy life style to be better.

**Keywords:** Determinant, Dengue fever, Public health center

## INTRODUCTION

Dengue hemorrhagic fever (DHF) is a disease caused by a virus that has spread rapidly in various countries in recent years. The dengue virus is transmitted by female mosquitoes, namely *Aedes aegypti* and *Aedes albopictus*. This mosquito can also transmit chikungunya, yellow fever and Zika infection. The dengue virus is widespread throughout the tropics which is influenced by rainfall, temperature and rapid urbanization.<sup>1</sup>

Green analyzed a person's behavior according to the level of health. The health of a person or society can be influenced by two main factors, namely behavioral factors and factors outside of behavior. Furthermore, the behavior is formed from three factors, namely predisposing factors, reinforcing factors and enabling factors. Each of these factors is manifested in actions, physical environment and community leaders.<sup>2</sup>

According to Benjamin Bloom (1980), practice or action is one of the divisions of the domain of behavior and for

the sake of practical education it is also one of the 3 levels of the domain of behavior, namely attitudes, knowledge and actions. Attitudes cannot be ascertained manifested in a person's actions.<sup>3</sup> Furthermore, the physical environment itself is everything that is around a person in the form of living or inanimate objects, real or abstract objects, including other humans and the atmosphere that is formed due to the occurrence of elements in nature.<sup>4</sup> Meanwhile, the understanding of the community figure itself is someone who can influence and be confirmed by the environment or society. All his actions and words are followed by the surrounding community.<sup>5</sup>

Indonesia is located in a tropical area which has two seasons, namely the rainy season and the dry season, where Indonesia has a risk of contracting dengue hemorrhagic fever. The rainy season is a condition in which small puddles appear and becomes a breeding ground for the *Aedes aegypti* mosquito. This disease not only causes extraordinary events but can cause social and economic adverse effects. The ministry of health of the republic of Indonesia recorded the number of dengue hemorrhagic fever sufferers in Indonesia in January-February 2016 as many as 8,487 patients with 108 deaths. The largest group that experiences dengue hemorrhagic fever in Indonesia at the age of 5-14 years reaches 43.44% and aged 15-44 years reaches 33.25%.<sup>6</sup> Specifically at the Motoboi Kecil public health center, Kotamobagu city, in 2014 there were 22 people suffering from DHF, while in 2015 there were 16 people suffering from DHF.<sup>7</sup>

It is often seen that individual and group actions can affect someone affected by DHF, in this case the lack of awareness to get used to living cleanly and paying attention to the surrounding environment besides maintaining good coordination between groups such as the presence of community leaders who can help control dengue fever dengue, because community leaders are influential as a position whose words can be followed by the community.

Dengue hemorrhagic fever control efforts have been carried out by the Motoboi Kecil city health center, Kotamobagu, but what happens is that every year the people in the working area of the Motoboi Kecil public health center, Kotamobagu city still experience the DHF. The aim of this research generally is to get the illustration of behavioral health determinants for dengue fever control measures in Puskesmas Motoboi Kecil, Kotamobagu city.

## METHODS

This type of research is a qualitative study to obtain a description of the determinants of health behavior towards the control of DHF in the working area of Motoboi Kecil public health center, Kotamobagu city. This research was conducted in the work area of the

Motoboi Kecil public health center, Kotamobagu city in January-July 2020. In this study, the data source used a purposive sample that focused on selected informants who were closely related to the research topic. The informants in this study consisted of the head of the health center, the person in charge of P2M surveillance, people who have experienced DHF, and one of the community leaders in the working area of Motoboi Kecil health center, Kotamobagu city. There was a total of 4 informants for this qualitative study. The data was collected through in-depth interviews using interview guidelines and voice recording and observation tools. Data collected was processed and analyzed and presented in the form of a script. Checking the validity of the data was carried out using triangulation method technique consisting of source triangulation and method triangulation. Statistical analysis was done with univariate analysis which consists of descriptive tables of variables distribution.

## RESULTS

Distribution of DHF cases by age group in Kotamobagu city can be seen in Table 1.

**Table 1: Distribution of DHF cases based on the group age in 2018.**

Age group (years)	N	%
<1	3	2.48
1-4	14	11.58
5-14	44	36.37
15-19	16	13.22
20-24	9	7.44
25-44	23	19
>45	12	9.91
<b>Total</b>	<b>121</b>	<b>100</b>

Data obtained from the Kotamobagu city health office based on age groups in Kotamobagu city in 2018, the most cases of DHF were in the 5–14-year age group, amounting to 44 cases, and the fewest cases in the <1 year group amounting to 3 cases. The cases were distributed from January to December 2018. Distribution of DHF cases by gender in Kotamobagu city can be seen in Table 2.

From the data obtained in 2018, the most cases of DHF based on gender in Kotamobagu city were female, namely 72 people (59.5%) compared to male gender, namely 49 people (40.5%).

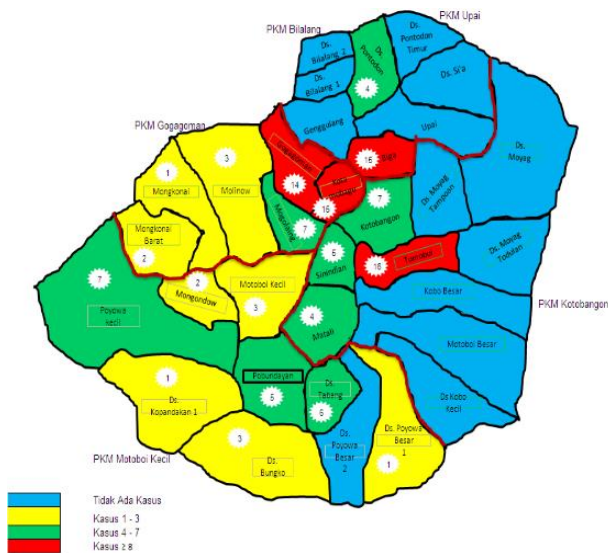
**Table 2: Distribution of DHF cases based on gender in 2018**

Gender	N	%
<b>Women</b>	<b>72</b>	<b>59.5</b>
<b>Man</b>	<b>49</b>	<b>40.5</b>
<b>Total</b>	<b>121</b>	<b>100</b>

**Table 3: Distribution of DHF cases by working are of health center in Kotamobagu city.**

Working area of public health center	N
Gogogoman	42
Kotabangon	32
Motoboi Kecil	28
Bilalang	0
Upai	19
<b>Total</b>	<b>121</b>

The description of the distribution of DHF cases in 2018 carried out by the surveillance team of the Kotamobagu city health office, there were as many as 121 patients spread across several health centers in Kotamobagu city. The sequence with the most cases of dengue fever was Gogogoman health center with 42 cases, Kotabangon health center 32 cases, Motoboi Kecil health center 28 cases, and Upai health center 19 cases. Meanwhile, at the Bilalang health center there were absolutely no DHF cases throughout 2018.



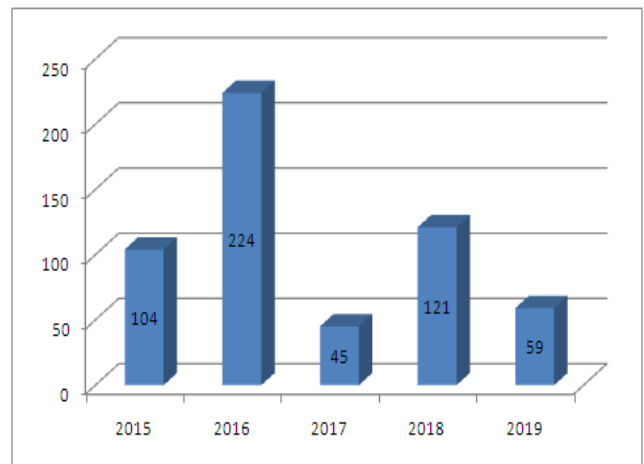
**Figure 1: Distribution map of DHF cases by village/sub-District in Kotamobagu city in 2018.**

The picture above shows the distribution of DHF cases by village/sub-district in Kotamobagu city from January to December 2018 where the blue area indicates there are no DHF cases, the yellow area has 1-3 cases of dengue, the green area has 4-7 cases. cases and the red area there were more than or equal to 8 cases. It can be seen that the areas that were still dengue free in 2018 were Bilalang 1, Bilalang 2, Genggulang, East Pontodon, Sia, Upai, Moyag, Moyag Tampoan, Moyag Todulan, Kobo Besar, Motoboi Besar, Kobo Kecil and Poyowa Besar 2, while Desa/Other urban villages have dengue cases.

It can be seen that cases of DHF in the Motoboi Kecil Kota health center area in 2018 had a total of 28 cases of DHF and a decrease in 2019 was 12 cases.

**Table 4: Distribution of DHF cases in Motoboi Kecil health center work area.**

Village/Sub-district	Number of cases
Poyowa Besar 1	0
Poyowa Besar 2	1
Tabang	0
Bungko	1
Kopangkan 1	3
Poyowa Kecil	2
Mongondow	0
Motoboi Kecil	3
Pobundayan	2
<b>Total</b>	<b>12</b>



**Figure 2: Distribution of DHF cases based on time (years) in Kotamobagu city, 2015-2019.**

Figure 2 depicts DHF cases from 2015 to 2019 (up to February 25, 2019), where the most cases were in 2016 with 224 cases, then in 2018 as many as 121 cases.

In-depth interviews were conducted, obtained the following results and discussion:

**Action**

This section explores the community's actions towards efforts to control DHF.

Generally, the answers given are very different and have different meanings, based on the following quote:

*"Once every three months. However, the implementation is no longer routine, it's just the awareness of the community to wash the water reservoir and give it abate powder."(D2)*

*"Only when dengue fever is known by the health center and fumigation is carried out." (D3)*

The above statement was confirmed by key informants as the following quote:

*"Once every three months. However, the implementation is no longer routine, it's just the awareness of the community to wash the water reservoir and give it abate powder."(D2)*

From the above statement it can be analysed that the implementation of DHF disease control is not carried out routinely by the health center and relies on the behaviour of the people in the working area of the Motoboi Kecil public health center, Kotamobagu city. And this was confirmed by one of the informants who said that its implementation depends on field activities such as the implementation of Posyandu activities.

The absence of routine activities to control dengue disease, it is hoped that the health center and the community will be able to improve the control process.

### **Physical environment**

The purpose of implementing community service in the working area of the Motoboi Kecil public health center, Kotamobagu city.

Based on the results of the in-depth interview, it is described as follows:

*"Community service is good for the environment, for that we often provide information for controlling the dengue fever, avoiding control by means of fogging. Then drain the bath and given abate powder."(D2)*

*"To clean the drains." (D3)*

From the results of the in-depth interviews above, the meaning analysis is that the working area of the Motoboi Kecil public health center has one of the programs created by the local government by carrying out community service every Friday. The understanding of the health center on the implementation of community service is a good way to control DHF because besides avoiding chemical control methods such as fogging and giving abate powder. While other informants' statements do not understand the purpose of community service, this can affect the clean behaviour of the people in the working area of the Motoboi Kecil public health center, Kotamobagu city because the community thinks that the implementation of community service is only a government program which basically is for environmental health. which is in the area of Motoboi Kecil public health center, Kotamobagu city.

One of the influences that is quite important for the community and is chosen by the community who is able to coordinate the community is called a community figure, where community leaders can also influence the health status around the coordinating area.

### **Community leaders**

Based on the results of in-depth interviews regarding the

responses of community leaders in efforts to control DHF, namely as follows:

*"Community leaders responded by providing fumigation in our area." (D3)*

*"We, as religious leaders, are quick to act when the environmental health in our area is disturbed. However, in our area so far there has never been a dengue disease." (D4)*

From the results of the in-depth interview above the meaning analysis: community leaders have good coordination with the health center when one of the people is suffering from DHF, which is characterized by chemical control so that other people can avoid DHF.

## **DISCUSSION**

From the related information, it was found that to control cases of DHF in the working area of the Motoboi Kecil public health center, Kotamobagu city was when there was one disease case in the work area of the Motoboi Kecil health center, the health workers in the health center immediately surveyed the location and took immediate action to prevent the spread of cases. In addition to socialization to the community and the health team in the field, there is also a policy program from the health center, namely tracking larvae, eradicating mosquito nests, clean Friday community work with local residents, and conducting fogging and counselling. The health center collaborates with urban villages and cross-sector in clean Friday which is conducted once a week. In addition, the program carried out by this health center has received positive support from the government and the population. The efforts and programs carried out by the health center are very good and are accompanied by cooperation that is no less good with the surrounding community. In addition to controlled cases of DHF, this can also increase public trust in the health center. Research conducted by Dardjito et al stated that the risk of dengue fever in the <12 years age group was 19,056 times greater than the ≥12 years age group.<sup>8</sup> Research also takes place in schools. Research conducted by Sari states that sub-districts with high population density have a high rate of dengue fever as well.<sup>9</sup> Sari also stated that the results of this study stated that the higher the population density, the easier it would be for dengue transmission to occur, because the mosquito flight distance is estimated at 50 meters. Nutritional theory affects the degree of DHF in relation to nutritional status. Where the nutritional status of children suffering from dengue can vary. The incidence of DHF is more common in children with immunocompetence and good nutritional status, associated with a good immune response, which can lead to severe DHF. Children who suffer from DHF often experience nausea, vomiting, and decreased appetite. If this condition continues and is not accompanied by the fulfilment of adequate nutrition, then the child can experience weight loss so that their

nutritional status becomes less and the degree of severity of the child's DHF will get worse.<sup>10</sup> The limitation of this study was the insufficient number of informants who certainly do not describe the real situation.

## CONCLUSION

The lack of good supervision of health workers who are authorized to carry out programs as well as to the community in an effort to control dengue disease which has been socialized by Motoboi Kecil public health center. Lack of knowledge from the local community about the control efforts carried out in the working area of the Motoboi Kecil public health center, Kotamobagu city due to a lack of socialization about clean and healthy living habits. Coordination between the health center and community leaders has not been well established. This study suggests the health center should try to increase awareness in the process of controlling DHF, by carrying out routine controls and having an attitude of not depending on health workers and paying attention to the health of the surrounding environment. Increase efforts to control dengue fever in accordance with established policies without waiting for cases to occur in certain areas. Establish better relationships with community leaders in the working area of the Motoboi Kecil public health center, Kotamobagu city so that the coordination will be more optimal.

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