



## Factors affecting public participation on the implementation of the dengue hemorrhagic fever prevention program at the medan deli health center, Medan City, Indonesia

Satria Gautama<sup>1\*</sup>, Destanul Aulia<sup>2</sup>

<sup>1,2</sup> Magister of Public Health Science, Universitas Sumatera Utara, Medan, Indonesia

\* Corresponding Author: Satria Gautama

---

### Article Info

ISSN (online): 2582-7138

Volume: 03

Issue: 02

March-April 2022

Received: 21-03-2022;

Accepted: 08-04-2022

Page No: 473-477

DOI:

<https://doi.org/10.54660/anfo.2022.3.2.15>

### Abstract

The report on the Dengue Hemorrhagic Fever (DHF) prevention program at the Medan Deli Subdistrict Health Center, Medan City in 2016 was very high due to factors originating from the community such as willingness, the opportunity to prevent DHF, utilizing counseling and low abilities and the role of the village head/officer was not optimal. The purpose of this study was to analyze the influence of internal factors (opportunity, ability, and willingness) and external factors (role of the village head, cadres / health workers) on community participation in the implementation of the DHF disease prevention program. This type of research is a *survey* with a approach *cross sectional*. The population was 24,344 families and the total sample was 100 people using *cluster sampling technique*. Data collection through questionnaires and observations. Data were analyzed using multiple logistic regression tests. The results of statistical tests showed that the opportunity, willingness, ability, role of the village head and cadres / health workers had an effect on community participation in the implementation of the DHF disease prevention program. Meanwhile, the dominant variable affecting community participation in implementing the DHF disease prevention program was the willingness with an RP of 11,201 which means The proportion of people who have the willingness to participate in the implementation of the DHF prevention program is 11.2 times greater than that of people who do not have the will.

**Keywords:** Community participation, implementation of the DHF program

---

### 1. Introduction

*Dengue Hemorrhagic Fever* or Dengue Hemorrhagic Fever (DHF) is a type of infectious disease that has become a global health problem, including Indonesia. This disease is a disease based on environmental health because its transmission is strongly influenced by the presence of vectors, namely the *Aedes aegypti* and *Aedes albopictus* mosquitoes.

Various program implementations have been carried out in an effort to overcome the increase in dengue cases. In addition, the Medan City government has also promoted the Mosquito Nest Eradication program (PSN) through the 3 M (Drain - Close - Bury) movement, such as replacing water in flower vases, bird drinking places or other similar places once a week, repairing drains and gutters not smooth, closing holes in bamboo / tree pieces, sprinkling larvicide powder, raising larvae eating fish, installing gauze, seeking adequate lighting and room ventilation (Medan City Health Profile, 2016). The low level of community participation in the eradication of mosquito nests can be caused by several factors, among others, due to the lack of knowledge about mosquito nest eradication programs and Dengue Hemorrhagic Fever and also the ability to monitor the density of mosquito larvae *Aedes aegypti* at home.

The community participation method developed by the World Health Organization (WHO) in 2004 is *Communication For Behavioral Impact* (COMBI). The COMBI method is a community mobilization method that integrates health education, communication, information and education (IEC), social marketing techniques and community mobilization, to change behavior based on changes in people's knowledge, attitudes and behavior.

The COMBI method has been widely applied to control DHF (Kamal, 2017). Participation basically includes two parts, namely internal and external. Participation internally means a sense of belonging to the community. External participation is related to how individuals engage with outside communities (Suparjan, 2010) [12]. The opportunity, ability and willingness of the community, as well as the low role of the village head and cadres / health workers in prevention efforts led to recurring cases of DHF, seen when when no DHF cases were found in their area, they did not routinely implement the program. However, some people began to realize when there was a new case of DHF which was suffered by the community.

## 2. Research Methods

### 2.1 Location and Sample

The research was conducted at the Medan Deli Public Health Center, which is part of the Medan Deli District, which is one of the districts where there are still many DHF sufferers. The population of this research is 24,344 households in three 3 sub-districts in Medan Deli. The sampling technique used the Slovin method with a sample size of 100 households.

### 2.2 Data Analysis

Data collection was carried out by direct interviews

conducted with research respondents who were guided by the questions in the research questionnaire that had been tested for validity and reliability (Aprilia *et al.*, 2020) [2]. The data analysis of this research used univariate, bivariate, and bivariate analysis, while the multivariate test used logistic regression tests.

## 3. Results and Discussion

In the results and discussion, univariate analysis will be conducted to obtain an overview of the distribution of the proportions of each independent variable including ability, willingness, motivation, and dependent variables, namely community participation in the implementation of the DHF prevention program. Bivariate analysis is used to see the influence between the independent variable (free) and the dependent variable (bound). Multivariate analysis was carried out using logistic regression test aimed to see the effect of several independent variables simultaneously on one dependent variable and to find out which independent variables had the most influence on the dependent variable.

### 3.1. Distribution of Internal and External Factors related to community participation in the implementation of DHF prevention

**Table 1:** Distribution of Respondents based on Internal and External Factors related to community participation in the implementation of DHF prevention

Variable	N	%
<b>Internal Factors</b>		
Opportunities for Community		
Utilization	45	45,0
Underutilized	55	55,0
Community Willingness		
Strong	34	34,0
Low	66	66,0
Community Ability		
Good	56	56,0
Less	44	44,0
<b>External Factors</b>		
Role of Lurah		
Good	39	39,0
Less	61	61,0
Role of cadres / health workers		
Good	53	53,0
Less	47	47,0
<b>Total</b>	<b>100</b>	<b>100,0</b>

Based on Table 1, it is found that the variables that have a high percentage are internal factors, namely underutilized public opportunities (55.0%), low public will (66, 0%), the ability of the community is not good (44.0%), and the external factors are the poor role of the village head (61.0%),

the role of cadres / health workers. good condition (53.0%).

### 3.2 Internal Factors Relations, External Factors on community participation in dengue prevention program implementation

**Table 2:** Analysis Relationship of Internal Factors, External Factors on community participation in dengue prevention program implementation

Independent Variable	<i>p Value</i>
Opportunities for Community	0,001
Community Willingness	<0,001
Community Ability	0,003
Role of Lurah	0,005
Role of cadres / health workers	<0,001

This means that there is a relationship between each internal factor consisting of opportunity, willingness and ability to community participation in the implementation of the DHF prevention program. Likewise, the test results show that the  $p$  value of the external factor variable, namely the role of the village head and cadres/health workers, is 0.005 and  $<0.001$  is smaller than the significant value of 0.05. This means that there is a relationship between each external factor consisting

of the role of the village head and the role of cadres / health workers in community participation in the implementation of the DHF prevention program.

### 3.3 The Influence of Internal and External Factors on community participation in the implementation of the DHF prevention program

**Table 3:** Results of Multiple Logistic Regression

Independent Variable	$\beta$ Value	$\beta$ Value	$Exp(B)$
Opportunities for Community	1,428	0,016	4,172
Community Willingness	2,416	$<0,001$	11,201
Community Ability	1,891	0,003	6,627
Role of Lurah	1,990	0,003	7,313
Role of cadres / health workers	1,391	0,017	4,019
<i>Constant</i>	-13,805	$<0,001$	$<0,001$

Based on Table 3 it is found that the five independent variables have a value  $p$  less than 0.05, namely opportunity (0.016), willingness ( $<0.001$ ), ability (0.003) and the role of the village head (0.003), and the role of cadres / health workers (0.017), which means that it is statistically proven that the variables of opportunity, willingness, ability and role of the village head, and the role of cadres / health workers have an effect on community participation in the implementation of the DHF disease prevention program.

Internal factor, namely the opportunity variable, the value of  $Exp(B)$ , namely 4.172, meaning that taking advantage of the opportunity well tends to be 4.172 times the community participates in implementing the DHF prevention program rather than a less good opportunity. The willingness variable, the value of  $Exp(B)$ , is 11.201, which means that people have a good will, which tends to be 11,201 times that the community participates in implementing the DHF prevention program rather than a poor will. The variable is considered dominant because the value of  $Exp(B)$  is greater than other variables. Furthermore, the variable for the ability value of  $Exp(B)$  is 6.627, which means having a good ability tends to be 6.627 times the community participates in implementing the DHF prevention program rather than having a poor ability.

The external factor is the variable of the role of the village head, the value of  $Exp(B)$  which is 7.313, which means that the role of a good village head tends to be 7.313 times the community participates in implementing DHF prevention programs than the role of a poor lurah. The variable of the role of cadres / health workers, the value of  $Exp(B)$ , is 4.019, which means that the role of cadres / health workers who are good tends to be 4.019 times that the community participates in implementing DHF prevention programs than the role of cadres / health workers who are less good.

#### The Influence of Opportunities with Community Participation in the Implementation of the DHF Prevention Program

The community does not take this opportunity in accordance with the answers to questions regarding information from cadres / health workers individually about ways to prevent DHF, not because the community does not attend the counseling held at the puskesmas / village head office. One family member rarely visits Posyandu as a place to find

information about DHF so that information exposure is only obtained from friends. However, this information has not made people take the opportunity to prevent DHF in the family environment.

According to research by Nordina (2017), most people have never received DHF prevention counseling, totaling 28 residents (28%) in the XI Ward of Falls Village, Medan Marelan District. This condition indicates that the community has not been actively involved in attending counseling on the prevention of DHF.

The head of the family did not convey information on the dangers and prevention of dengue and it was recommended that every family carry out PSN and 3M to break the mosquito chain. According to Notoatmodjo (2015)<sup>[8]</sup> that providing information about ways to achieve a healthy life, how to maintain health, how to avoid disease and so on will increase public knowledge about efforts to prevent dengue disease.

#### The Effect of Willingness on Community Participation in the Implementation of the DHF Prevention Program

The community has a low willingness in accordance with the answers to questions regarding objections to attending counseling activities to increase knowledge about DHF prevention due to outreach activities at the puskesmas or village head office held on Friday during working hours. Even the community also objected to participating in extension activities until it was finished because the activities seemed monotonous.

Community empowerment in the health sector can be done by using a group of people in a community to carry out the task of controlling dengue fever. This is, for example, by forming volunteers who are tasked with checking larvae periodically or known as Juru Pemantau Laren (Jumantik), but there are many trends in the community that do not want to be involved (Sukesi, 2018)<sup>[11]</sup>.

To increase the community's willingness to participate in implementing the DHF prevention program, it is necessary to motivate the community (all family members) by *sweeping* larvae to every house. Houses that are not larva free are given sanctions for installing red stickers. Whereas houses that are larva free are given an award for installing a green sticker and awarding a larva-free house award such as the ease of getting health services at a health center

### Effect of Ability on Community Participation in the Implementation of the DHF Prevention Program

The community also has good abilities because, among other things, they have the knowledge obtained from various sources such as magazines, internet and health workers as well as supported by a high educational background so that it is easy to analyze and adopt health information (Simanjuntak *et al.*, 2020 and Gea *et al.*, 2022) <sup>[9, 4]</sup>. In addition, one of the family members has suffered from dengue fever so the family tries to prevent dengue so that the disease does not recur. The review of Chelvam (2017) also stated that the community's ability is related to the knowledge about DHF prevention. The level of knowledge is one of the factors that can influence a person's behavior towards DHF prevention in the Kemiri Village, Jayakarta Karawang District. Public knowledge about prevention is already good at 55 percent. However, several things related to the perception of the community that they have not been able to implement DHF prevention, including the frequency of cleaning mosquito breeding places around the house due to busyness or daily activities and the family feels that preventing DHF in the environment is the duty and responsibility of officers appointed by the government. The community is also less able to do PSN to prevent dengue by cleaning mosquito breeding places, using mosquito repellent lotions in the morning and evening, and eliminating mosquito resting places.

### The Influence of the Role of the Village Head on Community Participation in the Implementation of the DHF Prevention Program

The role of the village head is not active in increasing community participation, among others, the village head does not invite the community to work together because this activity coincides with the Medan City Cleanliness Program which is held every Friday. All village cadres and civil servants carry out gotong royong in turns in each neighborhood. Agree with Andri's research (2015) <sup>[1]</sup> that the role of the village is less participation in empowering the community (family) to maintain the cleanliness of the house or the environment so that the family does not suffer from dengue disease with the results of the 60.9 percent categorization in Baiturrahman District, Banda Aceh City. Regarding environmental cleanliness in the prevention of DHF, sanitation policies such as environmental hygiene at the Medan Deli Community Health Center implemented through the Community Based Environmental Sanitation (SLBM) program are also programs that can break the chain of *Aedes aegypti* mosquitoes but have not succeeded in reducing dengue cases at Medan Deli Health Center.

### The Influence of the Role of Cadres / Health Workers on Community Participation in the Implementation of the DHF Prevention Program

According to Siyam's (2018) <sup>[10]</sup> opinion that cadres and health and other officers are given increased understanding of DHF prevention and control programs to support their roles or tasks in providing information about DHF prevention and control programs to students at SMP Islam Sultan Agung 4, Semarang.

The role of a good cadre can be seen from the community's statement regarding the distribution of brochures about DHF to the community, especially every family suffering from DHF. The role of cadres / other health workers is to provide

free abate every month in collaboration with Jumantik officers, especially people who visit the puskesmas or posyandu and inform how to use it and prevent dengue fever like 3M so that mosquitoes cannot breed in a place or container with water. According to Trapsilowati (2015), the involvement of DHF cadres in DHF vector control activities is seen from the routine presence of DHF cadres in PKK meetings and meetings of DHF cadres in Sendang Mulyo Village, Semarang City. The capacity of cadres in DHF prevention regarding knowledge of dengue prevention and informing the local community is in the very good category with a score of 85.5 percent.

### 4. Conclusions

Based on the results of the research and discussion that has been carried out, the conclusion of this study is on internal factors, namely community opportunity, community will, community ability to influence community participation in implementing DHF prevention programs and external factors, namely the role of the village head and the role of cadres / health workers. on community participation in implementing the DHF prevention program.

### 5. References

1. Andri. Hubungan faktor internal dan eksternal dengan partisipasi keluarga dalam pencegahan demam berdarah dengue (dbd) di Kecamatan Baiturrahman Kota Banda Aceh. Tesis. Institut Kesehatan Helvetia Medan, 2015.
2. Aprilia D, Safiera S. The Cultural Relativism (A Pattern of Symbolic Discourse or Language). Turkish Online Journal of Qualitative Inquiry. 2020; 11(4):910-915. <https://tojqi.net/index.php/journal/article/view/8201>.
3. Dinas Kesehatan Kota Medan. Profil Kesehatan Provinsi Sumatera Utara Tahun, 2015-2016.
4. Gea JS, Butarbutar M. How cash flow information determined and reported to external users in pandemic of COVID-19 era?. International Journal of Health Sciences. 2022; 6(S3):431-451. <https://doi.org/10.53730/ijhs.v6nS3.5172> & <https://sciencescholar.us/journal/index.php/ijhs/article/view/5172>
5. Jingga AL. Upaya pengendalian DBD. Diakses dari, 2011. <http://jinggadelia.community.undip.ac.id/2011/03/11/upayapengendalian-DBD>.
6. Kamal NN, Dharmadi M. Pengaruh partisipasi masyarakat dalam pencegahan Demam Berdarah Dengue (DBD) terhadap peningkatan kejadian DBD di Wilayah kerja Puskesmas Tegallalang I, Bali. Intisari Sains Medis. 2017; 8(1):77-81. doi: 10.15562/ism.v8i1.115.
7. Nordina. Motivasi dan partisipasi warga dalam mencegah angka kejadian DBD di Lingkungan XI Kelurahan Terjun Kecamatan Medan Marelan Tahun 2016. Jurnal Ilmiah Keperawatan IMELDA, 2017, 3(1).
8. Notoatmodjo S. Promosikesehatan danilmu perilaku. Jakarta: Rineka Cipta, 2015.
9. Simanjuntak AMB, Dauly P. Feltham Model: A Framework for Determining The Value of A Change In The Information Decision (The Decision Maker). Turkish Online Journal of Qualitative Inquiry. 2020; 11(4):964-977. <https://tojqi.net/index.php/journal/article/view/8209>
10. Siyam N, Cahyati WH. Implementation of School Based

- Vector Control (SBVC) for the Prevention and Control of Disease Vectors in Schools. *Media Kesehatan Masyarakat Indonesia (MKMI)*, 2018, 14(1).
11. Sukei TW, Supriyati, Satoto TBT. Pemberdayaan Masyarakat dalam Pengendalian Demam Berdarah Dengue (Literatur Review). *Jurnal Vektor Penyakit*. 2018; 12(2):67-78.
  12. Suparjan dan Hempri S. Pengembangan masyarakat dari pembangunansampai pemberdayaan. Yogyakarta: Aditya Media, 2010.
  13. Trapsilowati W, Mardihusodo SJ, Prabandari YS, dan Mardikanto T. Partisipasi masyarakat dalam pengendalian vektor DBD di Kota Semarang Provinsi Jawa Tengah. 2015, *Vektora*. 2015; (7)1:15-22.
  14. Wahyuni S. Implementasi kebijakan pembangunan dan penataan sanitasi perkotaan melalui program sanitasi lingkungan berbasis masyarakat di Kabupaten Tulungagung. *Jurnal Ilmu Lingkungan*. 2012; 10(2):111-122.