



# Study on the Role of Jumantik Cadre in Decreasing Dengue Hemorrhagic Fever Cases in Panaikang Village, Makassar City

Esse Puji Pawenrusi<sup>1</sup>, Ilham Syam<sup>1</sup>, Dewi Purnama Windasari<sup>1\*</sup>, Andi Ayumar<sup>1</sup>, Kamariana Kamariana<sup>1</sup>, Iskandar Zulkarnaen<sup>1</sup>, Haeril Amir<sup>2</sup>

<sup>1</sup>*Sekolah Tinggi Ilmu Kesehatan Makassar, Makassar City, South Sulawesi, Indonesia;* <sup>2</sup>*Universitas Muslim Indonesia, Makassar, Indonesia*

## Abstract

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\***Correspondence:** Dewi Purnama Windasari, Sekolah Tinggi Ilmu Kesehatan Makassar, Makassar City, South Sulawesi, Indonesia. E-mail: dewi.epidpasca@gmail.com

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**BACKGROUND:** Dengue virus is a disease, transmitted through the *Aedes aegypti* mosquito. In 2021, there were 17 cases in May, seven cases in June, and seven cases in July.

**AIM:** The purpose of this study was to find out the picture of the role of jumantik cadres in the decrease of dengue cases in Panaikang Village of Makassar City.

**METHODS:** This research was carried out through a quantitative research using with a descriptive approach, involving 216 houses as the research population. Among the population, 140 houses were selected as the research sample by simple random sampling technique which is collecting the data randomly using questionnaires.

**RESULTS:** Based on the research, it was obtained that the implementation of extension in Panaikang Village was obtained by 61 people (87.1%), while the remaining nine people (12.9%) did not obtain the extension. Meanwhile, in terms of Panaikang Village 59 people (84.3%) obtained the extension, while the remaining 11 people (15.7%) did not obtain the extension. Furthermore, in terms of the periodic mosquito larvae monitoring (PMLM) in Panaikang Village 51 houses (72.9%) obtained the monitoring, while the remaining 19 houses (27.1%) did not obtain the monitoring. Meanwhile, in the context of 47 houses (67.1%) obtained monitoring, while the remaining 23 (32.9%) did not obtain monitoring. Furthermore, mosquito net eradication in Panaikang Village was carried out to 59 houses (84.3%), while the remaining 11 houses (15.7%) did not obtain the eradication, meanwhile, in eradication was carried out in 55.

**CONCLUSION:** Furthermore, it can be concluded that among 140 respondents, the extension was conducted in 120 houses. PMLM was carried out in 98 houses. Mosquito Nest Eradication was carried out to 114 houses. In this case, in terms of PMLM and Mosquito Nest Eradication, 18 houses are categorized as free. Eventually, it is recommended that Public Health Center Officer and *Jumantik* Cadres are expected to continue to carry out extension, PMLM, and Mosquito Nest Eradication to improve public health and free from dengue fever.

## Introduction

Dengue hemorrhagic fever is a disease caused by a virus transmitted through female mosquitoes which is mainly from the *Aedes aegypti* species and to a lesser extent, *Aedes albopictus*. This disease was first found in the 1950s. Dengue fever is widespread throughout regions, especially those which have a tropical and warm climate [1].

Data from the Ministry of Health of the Republic of Indonesia reported 68,407 dengue cases in 2017 with 493 people died [2]. In 2018, there have been 53,075 cases with 344 deaths and 133 people dead in 2019 (until January 29, 2019) [2].

Furthermore, United States reported in 2017 that there was a decrease in the number of dengue cases from 2,177,171 cases in 2016 to 584,263 cases in 2017. In addition, dengue fever outbreaks have also been reported and increase in Congo, Ivory Coast, Tanzania in African regions. An estimated 500,000

people with severe dengue fever require hospitalization each year, of which about 2.5% of them were died each year [3].

This disease has become one of the most serious health problems in Indonesia since 1968. The number of diseases and spread continues to increase. Dengue fever has spread in 34 provinces and 85% of the total cities/regencies in Indonesia. Nationally, the number of dengue cases on February 3, 2019, was 16,692 cases with 169 people died [4].

South Sulawesi Province is included in the category of ten provinces in Indonesia with the highest number of dengue fever sufferers in 2016 (Ministry of Health, 2017). According to the Prevention, Control and Environmental Health (P2PL) report, dengue case incident rate (IR) in 2014 was 35.17/100,000/person with CFR of 0.84%. In this case, the highest IR rate was 92.18/100,000/person in Palopo City, 89.93/100,000/person in East Luwu Regency, and 85.03/100,000/soul in Bantaeng Regency. Meanwhile, the lowest was 8.07/100,000/person in Luwu Regency, 6.05/100,000/

person in Enrekang Regency, and 0.00/100,000/person in Selayar Regency [5].

Department of Health of Makassar City reported that there were 65 cases until mid-March 2020. Based on the results of the data, there are cases that occurred since January as many as 23 cases which then added by 42 cases in February to March with no deaths [6].

The results of Kalsum and Halim's research in Jambi City revealed that the presence of mosquito larvae in the patient's home was 29%, the mosquito larvae figure is only 71%, and the respondents' knowledge level was low by 57.8%. Furthermore, in terms of the behavior of the mosquito net eradication of dengue fever related to 4M plus action, 92.5% of the respondents routinely drained the bathtub, 89.5% of the respondents brushed the bathtub, and 88.4% closed the water reservoir. However, only 16.2% of the community which destroyed second-hand goods, 29.7% of the community routinely used abate. In this case, the regencies were dengue fever were the highest are South Jambi, Kota Baru, and Telanaipura. Furthermore, most patients involved in the research were at the elementary school-aged group (6–14 years) by 43.5% [7].

The government through the Ministry of Health regulates the Mosquito Nest Eradication program as stated in the Letter Number PM.01.11/MENKES/591/2016 dated November 8, 2016, on the implementation of the 4M Plus Mosquito Nest Eradication through One House One *Jumantik*. This is a strategy shown to strengthen health services with the aim of promotive and preventive activities which in this case are Arbovirus disease, especially dengue fever. The government is trying to move the community because Arbovirus is growing inside or outside the house environment that became the place of transmission of dengue fever [8].

According to preliminary data taken in Pampang Public Health Center working area in the past 3 months, there were 17 cases in May, seven cases in June, and seven cases in July. The highest number of cases emerged in Panaikang Village, where there were 18 cases [9].

Panaikang Village has eight where there is eight *Jentik* Monitors (*jumantik*). In a year, there are four house visits for periodic mosquito larvae monitoring (PMLM), because due to the situation and conditions of the pandemic, PMLM is limited to three visits a year. In addition, regular mosquito larvae monitoring are carried out when there are many cases appear [9].

The data above show that *Jumantik's* action in performing roles and responsibilities in the field of health for dengue fever management is one of the important factors to maintain the environment. Therefore, researchers are interested in conducting research in Panaikang Village where dengue fever case is quite high by 18 people of 175 families. Furthermore, this research was carried out by examining the role of jumantik cadres in the decrease of dengue fever cases in Panaikang Village.

## Research Objective

The objective of this research is as follows:

1. General Objective  
The general objective of the implementation of the current research was to find out an overview of the role of *Jumantik* cadres in the decrease of dengue fever cases in Panaikang Village of Makassar City
2. Special objective  
Meanwhile, the special objective of this research was
  - a. To find out the role of *Jumantik* Cadres in conveying information or giving counseling about Mosquito Larvae Monitoring and Mosquito Nest Eradication
  - b. To find out the role of The *Jumantik* Cadre in checking/monitoring the place where mosquitoes miss in and outside the house every 4 months
  - c. To find out the role of *Jumantik* Cadres in moving family members/residents from their house to do Mosquito Nest Eradication every 4 months
  - d. To find out the role of *Jumantik* Cadres in reporting the results of the implementation of mosquito larvae monitoring and mosquito net eradication and recorded them in the report format.

## Research Results

This research was conducted quantitatively using describing method by involving 140 people as the research samples. Furthermore, this research aims at describing the role of *Jumantik* cadres in the decrease of dengue cases in Panaikang Village, Makassar City.

Research data were collected using questionnaire sheet, which was distributed directly to the communities of RW 02 and RW 04 of Panaikang Village. The questionnaires contain questions, including the implementation of counseling, PMLM, mosquito net eradication, and report formats. The data obtained were further processed using the SPSS 16.0 application through univariate analysis. This aims to describe the variables studied. Furthermore, the results obtained were presented in the form of tables followed by narratives that can make it easier for researchers to be more directed and easy to understand. The research results data can be seen as follow:

### **Characteristics of RW/02 respondents**

The results of the study above describe the characteristics of the community Panaikang Village

Makassar City as many as 70 people. Based on the characteristics of the respondents as shown in Table 1, the highest age group is 36–45 years old by 19 people (27.1%), while the lowest age group is >66 years by four people (5.7%). Furthermore, it shows that most of the respondents were female by 57 people (81.4%), while the remaining 13 people (18.6%) are male. Concerning the education of the respondents, most of them had elementary school education by 27 people (38.6%), while the lowest education group is Diploma III by three people (4.3%). In addition, most of the respondents are housewives by 45 people (64.3%), while the least is teacher by two people (2.9%).

**Table 1: Characteristics based on age, gender, education, and occupation of Panaikang village Makassar city**

Characteristics of Respondents	n	%
Age (year)		
17–25	14	20.0
26–35	16	22.9
36–45	19	27.1
46–55	12	17.1
56–65	5	7.1
>66	4	5.7
Gender		
Male	13	18.6
Female	57	81.4
Education		
Elementary school	27	38.6
Junior High School	14	20.0
Senior High Vocational School	16	22.9
School	3	4.3
Undergraduate	10	14.3
Occupation		
House wife	45	64.3
Entrepreneur	7	10.0
Daily Labor	7	10.0
Civil servant	3	4.3
Teacher	2	2.9
Nurse	3	4.3
Midwife	3	4.3
Total	70	100.0

Source: Primary Data.

### Characteristics of RW/04 respondents

- The results of the study obtained the characteristics of the community of rw 04 Panaikang Village of Makassar City as many as 70 people. Based on Table 2 on the respondent

**Table 2: Characteristics of respondents based on age, gender, education, and occupation in RW/04 community of Panaikang village Makassar city**

Characteristics of respondents	n	%
Age (year)		
17–25	16	22.9
26–35	20	28.6
36–45	8	11.4
46–55	9	12.9
56–65	10	14.3
>66	7	10.3
Gender		
Male	10	14.3
Female	60	85.7
Education		
Elementary school	37	52.9
Junior high school	15	21.4
Vocational School	13	18.6
Diploma III	1	1.4
S1	4	5.7
Occupation		
Housewife	48	68.6
Entrepreneur	11	15.7
Daily Labor	7	10.0
Civil servant	1	1.4
Teacher	1	1.4
Nurse	1	1.4
Midwife	1	1.4
Total	70	100.0

Source: Primary Data.

characteristics, most of them were ate the age group of 26–35 years by 20 people (28.6%), while the lowest age group is >66 years by seven people (10.0%). Furthermore, most of the respondents are also female by 60 people (85.7%), while the remaining ten people (14.3%) are male. In addition, concerning the education, most of them had elementary school education by 37 people (52.9%), while the lowest education group is Diploma III education by one person (1.4%). In addition, most of the respondents are housewives by 48 people (68.6%), while the least occupation is civil servant by one person (1.4%), teacher by one person (1.4%), nurse by one person (1.4%), and midwives by one person (1.4%) as well.

### 2. Univariate Analysis.

Based on Table 3 of the results obtained from the distribution of the frequency of extension implementation, it can be known that *jumantik* cadres provide more extension to 61 people (87.1%), while people who did not get the extension were nine people (12.9%) from 70 houses.

**Table 3: Distribution of frequency of extension implementation in RW/02 of Panaikang village Makassar city**

Implementation of Extension	n	%
Done	61	87.1
Unsustainable	9	12.9
Total	70	100.0

Source: Primary Data.

Based on the results of Table 4 on the frequency distribution of PMLM, it can be known that *jumantik* cadres did more mosquito larvae monitoring, which was to 51 houses (72.9%), while the remaining 19 houses (27.1%) obtained less monitoring implementation.

**Table 4: Frequency distribution of periodic mosquito larvae monitoring in RW 02 of Panaikang village, Makassar city**

Periodic flick monitoring	n	%
Implemented	51	72.9
Less Implemented	19	27.1
Total	70	100.0

Source: Primary Data.

Based on Table 5 results on the frequency distribution of mosquito net eradication, it can be known that more *jumantik* cadres did mosquito net eradication, which is to 59 houses (84.3%), while the remaining 11 houses (15.7%) obtained less eradication implementation frequency.

**Table 5: Frequency distribution of mosquito nest eradication in RW 02 of Panaikang village, Makassar city**

Mosquito Nest Eradication	n	%
Done	59	84.3
Under-Implemented	11	15.7
Sum	70	100.0

Source: Primary Data.

- Based on Table 6 results obtained from the frequency distribution of PMLM and mosquito net eradication recorded in the report format, it can be known that the free have a report format of 11 houses (15.7%), while the not free has a report format of 59 houses (84.3%) out

**Table 6: Frequency distribution of periodic mosquito larvae monitoring and mosquito net eradication in report format**

Report Format	n	%
Free	11	15.7
Not Free	59	84.3
Total	70	100.0

Source: Primary Data.

of 70 houses.

## 2. Univariate Analysis.

Based on Table 7 results obtained from the frequency distribution of the extension implementation, it can be known that *jumantik* cadres provide extension to 59 people (84.3%), while people who did not obtain extension was 11 people (15.7%) from 70 house.

**Table 7: Frequency distribution of extension implementation in RW 04 of Panaikang village, Makassar city**

Implementation of extension	n	%
Sustainable	59	84.3
Unsustainable	11	15.7
Total	70	100.0

Source: Primary Data.

Based on Table 8 results obtained on the frequency distribution of periodic mosquito larvae frequency, it can be known that *jumantik* cadres did more monitoring, which is to 47 houses (67.1%), while the remaining 23 houses (32.9%) obtained less monitoring.

**Table 8: Periodic mosquito larvae monitoring frequency distribution in RW 04 of Panaikang Village, Makassar city**

Periodic mosquito larvae monitoring	n	%
Implemented	47	67.1
Less Implemented	23	32.9
Total	70	100.0

Source: Primary Data.

Based on Table 9 results obtained from the frequency distribution of mosquito net eradication, it can be known that *jumantik* cadres did more mosquito net eradication, which is to 55 houses (78.6%), while the remaining 15 houses (21.4%) obtained less eradication implementation.

**Table 9: Frequency distribution of mosquito net eradication in RW 04 Panaikang Village, Makassar city**

Mosquito Nest Eradication	n	%
Implemented	55	78.6
Less Implemented	15	21.4
Total	70	100.0

Source: Primary Data.

Based on the Table 10 results on the frequency distribution of PMLM and mosquito net eradication in the report format, it can be known that the free have a report format of 7 houses (10.0%), while those which are not free have a report format of 63 houses (90.0%) from 70 houses.

**Table 10: Frequency distribution of periodic mosquito larvae monitoring and mosquito net eradication in report format**

Report Format	n	%
Free	7	10.0
Not Free	63	90.0
Total	70	100.0

Source: Primary Data.

## Discussion

This research has been conducted on the communities of RW 02 and RW 04 of Panaikang Village, Makassar City to 140 people. Based on the characteristics of RW 02 communities, the highest age groups are 36–45 years old by 19 people (27.1%), while the lowest age group is >66 years by four people (5.7%). Furthermore, most of the respondents are female by 57 people (81.4%), while the remaining 13 people (18.6%) are male. Furthermore, concerning the education of the respondents, most of them had elementary school education by 27 people (38.6%), while the least education owned was Diploma III by three people (4.3%). Meanwhile, concerning the occupation, the highest was the housewife by 45 people (64.3%), while the least was teacher by two people (2.9%).

Furthermore, concerning the characteristics of RW 04 respondents, the highest age group was 26–35 years old by 20 people (28.6%), while the least age group was >66 years by seven people (10.3%). Furthermore, most of the respondents are female by 60 people (85.7%), while the remaining ten people (14.3%) are male. Furthermore, the most education owned by the respondents were elementary school education by 37 people (52.9%), while the least education group is Diploma III by one person (1.4%). Furthermore, most of the respondents involved worked as housewife by 48 people (68.6%), while the least employment was civil servant by one person (1.4%), teacher by one person (1.4%), nurse by one person (1.4%), and midwife by one person (1.4%).

### **Implementation of extension in RW 02 and RW 04 of Panaikang village, Makassar city**

Extension is one of the educational implementation activities for a person and group, providing knowledge, notification in all kinds of abilities to form community actions, attitudes, and behaviors that should be implemented. Based on the frequency distribution of the extension implementation, it can be known that *jumantik* cadres provide more extension in RW 02, which is to 61 people (87.1%), while the remaining nine people (12.9%) did not get the extension. Furthermore, based on the frequency distribution of extension conducted in in RW 04, among 70 people, 59 people (84.3%) obtained the extension, while the remaining 11 people (15.7%) did not obtain the extension.

Based on the results of the data, it can be known that the extension in RW 02 and RW 04 of Panaikang Village, Makassar City has been done well. This is proven based on the percentage that more people have received information through the extension than people who have not received information through the extension. This extension is very important so that

the public can know the information well and imitate what to do in accordance with the information obtained through the extension.

This extension activity was carried out by the public health center officers and accompanied by *jumantik* cadres, which is by gathering the community to give extension in an effort to prevent the dengue fever cases. The results obtained that those who have received extension in RW 02 were 61 people (87.1%), while those who obtained in RW 04 were 59 people (84.3%). This indicates the presence of a very high public curiosity that extension can change the behavior of the community for the efforts to prevent dengue fever cases. Meanwhile, those who have not received extension in RW 02 were nine people (12.9%), while those who have not received extension in RW 04 were 11 people (15.7%). This occurred because there was still a lack of community involvement due to time constraints and many other tasks or work that should be conducted by the community, so they could not get the information from the extension. According to Sarwono (2009), attitude occurs in a person's personality simultaneously through the experience of each individual who is directed and resulted through the actions toward various conditions/situations. In this study, the extension conveyed from the public health center officer and *jumantik* cadres was about how to prevent dengue fever case by conducting PMLM and mosquito nests eradication. Through this extension, public health center officers and *jumantik* cadres are able to provide encouragement and motivation to the community, which further can affect public awareness and understanding of the dangers of the disease through the countermeasures implementation that run smoothly and in accordance with the predetermined activity plan. Therefore, most of the community has also increased changes in behavior and actions in the environment. This extension can be interpreted as one of the actions to change healthy living society [10].

According to Damayanti (2017), Mosquito Nest Eradication (PSN) and education is significantly related with  $0.000 < 0.05$ . This indicates that this study is supported by Notoatmodjo (2010) who stated that actions are formed due to several stages of the previous educational process so that it then forms a human mindset. This shows that education is indirectly very influential on a person's health.

#### **PMLM in RW 02 and RW 04 of Panaikang village, Makassar city**

The implementation of mosquito larvae monitoring was carried out by *jumantik*. *Jumantik* takes a role as a source of reference because they directly communicate with the local community, thus they can be a direct and indirect example of dengue patients. *Jumantik* cadres are assigned to carry out the examination, monitoring and eradication of mosquito

larvae, especially *A. aegypti* (P2 Vector and Zoonotic Diseases (2016). The monitoring is conducted by cadre which was selected by officers from the community in an environment whose formation and performance is fully supervised by the regency/city government. *Jumantik* is fostered and monitored by officers appointed as *jumantik* supervisors by the head of the public health center.

Based on the frequency distribution of PMLM, it was obtained that among 140 houses, *jumantik* cadres have conducted monitoring in in RW 02, where 51 houses (70.0%) obtained the monitoring, while the remaining 19 houses (30.0%) did not obtain the monitoring. Meanwhile, in terms of RW 04, 47 houses (67.1%) obtained the monitoring, while the remaining 23 houses (32.9%) did not obtain the monitoring.

Based on the results obtained, it can be known that *jumantik* cadres have conducted good mosquito larvae monitoring, which is to 98 houses and only 47 houses that are not visited by *jumantik* in mosquito larvae monitoring. This means that the *jumantik* cadre has tried to carry out monitoring as the task has been given. Although there are still houses that are not monitored, the number does not reach 50% of the population.

According to Notoatmojo (2010), this PMLM encourages the community to improve actions to keep the house environment clean and free from mosquito larvae [11]. PMLM activities were carried out once every 4 months by the officer from Public Health Center targeting 70 houses per RW. It also has been determined and routinely checked if many cases of dengue fever appear. Mosquito larvae observations were carried out periodically to motivate the community to routinely clean the environment around the house and will get a reprimand when mosquito larvae are found in the water reservoir and will cause a culture of shame [10]. Public health center officers and *jumantik* cadres experience problems, namely with people who do not want or do not like their homes to be inspected. If many mosquito larvae are found in a house environment, public health center officers carry out eradication on the mosquito larvae by providing explanation as well as health extension.

#### **Eradication of mosquito nests in RW/02 and RW/04 of Panaikang Village Makassar city**

According to Basri and Hamzah (2017), breaking the chain of dengue hemorrhagic fever transmission cases can be carried out through eradicating *A. aegypti* mosquitoes and optimize by doing mosquito net eradication, which is through the movement of "4M plus," larva eradication, and fogging (smoking) [7].

The data processing results show that among 70 houses in RW 02, the mosquito net eradication was done in 59 houses (84.3%), while the remaining 11 houses (15.7%) did not obtain the eradication. Meanwhile, among 70 houses in RW 04, eradication was carried out in 55 houses (78.6%), while the remaining

15 houses (21.4%) did not obtain the eradication.

This is because the actions of the community will behave well by carrying out PSN activities if there is an encouragement from the role of *jumantik* cadres and some communities only do prevention and eradication when there are dengue fever cases and do not carry out routine hygiene activities. Therefore, the eradication of mosquito nests by *jumantik* is needed. Efforts to prevent the transmission of dengue fever cases are carried out by breaking the chain of distribution of dengue fever, which is a system to prevent the bite of *A. aegypti* mosquitoes. Good action is done through Mosquito Nest Eradication because where public health center officers collaborates with *jumantik* cadres who play an active role in conveying to the community to eradicate mosquito nests with the implementation of "4M plus." This activity is conducted by draining water containers in the bathtub and jars of clean water/drinking water, closing all water containers tightly to prevent mosquitoes from entering and laying eggs, burying waste that has the potential to contain rainwater such as broken glass and used cans, as well as monitoring the entire water reservoir which can cause mosquito breeding. After that, it can be sown with abate (larvaidation) and smoking (fogging). This means that the better the science of the community, the better the behavior, while the less knowledge, the less good the activity. According to Santhi *et al.*, (2012), it was stated that the relationship between the level of science and mosquito net eradication activities had  $p = 0.001$ . People who have good science, will carry out the eradication of mosquito nests well and vice versa.

Based on the data above, it can be known that *jumantik* cadres have done a good job of eradicating mosquito nests in 114 houses and only 26 houses which have not received visits for mosquito net eradication. Therefore, it indicates that *jumantik* cadres can complete the task about 81.4%.

Furthermore, the results of this study is in line with research conducted by Adnan and Siswani (2019), which obtained  $p = 0.000$  ( $p < \alpha = 0.05$ ) and an OR of 17 (95% CI; 6.477–44.618). This means that the role of *jumantik* in the eradication of mosquito nests has a 10 times chance of producing good community behavior than eradicating mosquito nests that are not good in efforts to prevent dengue fever disease.

### **PMLM and mosquito nest eradication in report format**

The role of Mosquito Larvae Monitoring Cadre (*Jumantik*) includes PMLM, providing socialization related to dengue fever prevention and mosquito nests eradication through 3M Plus action. In accordance with the theory described by Soegijanto (2006) in Nugroho, the role of *jumantik* cadres includes checking the presence of mosquito larvae in water container inside and outside the house and waterlogged places as well as giving abate powder to water reservoirs that are difficult to drain.

It is known that the research location still has dengue fever cases by 11 cases in RW 02. This is due to the environment where there is a high density of settlements associated with the density of the population that can show that the narrower and the distance between the houses can inhibit poor air circulation and community settlements becomes moist. Meanwhile, there were seven cases of dengue fever in RW 04. This is due to the environment that is lowly datated so that there is still water left. According to Sari (2005), the place where rainwater is inundated around the community's house environment can pose risk factors for the occurrence of dengue hemorrhagic fever cases and the breeding of *A. aegypti* mosquitoes around community settlements inside and outside the house. This most quickly appears in urban areas that become breeding grounds in sharing a place where clean water reservoirs cannot be directly related to the soil and protected from sunlight [12].

Based on the results of data processing on PMLM and Mosquito Nest Eradication in the Report Format of 140 houses, it showed that those affected by dengue fever cases in RW 02 with the free category is 11 houses (15.7%), while those who were not free was 59 houses (84.3%). Meanwhile, in RW 04, seven houses (10.0%) are free, while the remaining are not free (90.0%). The format of this report is a form of filling sheet that is used to record the results of mosquito larvae and records all 4M "plus" activities in the house environment. The reason is that *jumantik* cadres only provided a report format to houses where dengue fever cases occurred with the aim that the residents checked their for the mosquito larvae in 2 weeks. If there is mosquito larvae, the occupants note in the format of the report and the *jumantik* cadre presents it to the public health center. The obstacles found that there are still people who do not routinely fill out the report format because they are forget to fill out the mosquito larvae card since they are too busy with other jobs.

According to Adnan and Siswani (2019), *Jumantik* cadres are local community residents who are trained as a form of movement or active participation in tackling dengue fever disease. The existence of *jumantik* can increase people's motivation to participate in dengue fever vector control [13].

### **Conclusion**

Based on the results of the study on "Study of mosquito larvae monitors (*jumantik*) in dengue fever case in RW 02 and RW 04 of Panaikang Village Makassar city," it can be concluded that:

1. The implementation of extension by *jumantik* cadres was carried out well in RW 02, where 61 people (87.1%) out of 70 people obtained

the extension, while the remaining nine people (12.9%) did not obtain the extension. Meanwhile, the implementation of extension in RW 04, 59 people (84.3%) obtained extension, while the remaining 11 people (15.7%) did not obtain the extension

2. PMLM carried out by *jumantik* cadres carried out in RW 02 was conducted to 51 houses (70.0%), while the remaining 19 houses (30.0%) did not obtain the monitoring. Meanwhile, in RW 04, 47 houses (67.1%) obtained monitoring while the remaining 23 houses (32.9%) did not obtain the monitoring
3. The eradication of mosquito nets carried out by *jumantik* cadres in RW 02, there were 59 houses (84.3%) which obtained the eradication, while the remaining 11 houses (15.7%) did not obtain the eradication. Meanwhile, in terms of RW 04, 55 houses (78.6%) obtained eradication, while the remaining 15 houses (21.4%) did not obtain the eradication
4. PMLM and monitoring nest eradication were recorded in the report format which is divided into RW 02 communities with a free category of having a report format of 11 houses (15.7%), while the remaining 59 houses (84.3%) was not free. Meanwhile, in RW 04, seven houses were free (10.0%), while the remaining was not free (90.0%).

### Suggestion

- a. Public Health Center (P2P officers) and *Jumantik* Cadres are very expected to continue to conduct extension, PMLM, and mosquito net eradication to improve public health, namely free from dengue cases
- b. For the community, it is expected to always maintain the house environment by conducting 4M Plus to always avoid the presence of mosquito larvae and nets
- c. For further researchers, this research is used as a reference and foundation in developing related theme, which is about the role of *jumantik* cadres in decreasing dengue fever cases.

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