

## COMMUNITY EMPOWERMENT REGARDING “ONE HOUSE ONE JUMANTIK” PROGRAM IN KARANG BESUKI SUB-DISTRICT, MALANG CITY

Alidha Nur Rakhmani\*<sup>1,2</sup>, Lilik Zuhriyah<sup>2</sup>, Rivo Yudhinata Brian Nugraha<sup>3</sup>

1. Department of Family Medicine, Faculty of Medicine, Universitas Brawijaya
2. Department of Public Health, Faculty of Medicine, Universitas Brawijaya
3. Department of Parasitology, Faculty of Medicine, Universitas Brawijaya

\*Corresponding Author: alidha@ub.ac.id

### ABSTRACT

In 2016, Indonesia has been launching the “Indonesia Sehat” program which the strategy used is to strengthen health services through a family approach. According to the 2016 Ministry of Health technical guidelines, the larva inspector, also known as *Juru Pemantau Jentik (Jumantik)*, is involved in Jumantik participating by each family. Their role is the same as 3M plus actions including in the inspection, monitoring, and eradication of mosquito larvae for controlling infectious diseases, especially Dengue Fever. The purpose of these activities was to increase community participation to conduct a “one house one Jumantik” program. The study was the quasi-experimental post-test only design that was located in Karangbesuki sub-district, Malang City from August until September 2017. One cluster *Rukun Warga (RW)* from the Karangbesuki sub-district that consisted of 9 *Rukun Tetangga (RT)* was chosen as the location. The intervention was in collaboration with Mulyorejo Public Health Center (*Pusat Kesehatan Masyarakat / Puskesmas*) in Malang. The methods used were ovitrap utilization training and focus group discussion (FGD), health promotion and “one-house one-Jumantik” training program, also the contest to choose the best RT. The results of this activity succeeded in establishing a Jumantik team in each RT although there was one RT that has not yet succeeded in forming a team. Furthermore, for the sustainability of the program, it is hoped that this program could be improved by collaborating with Mulyorejo *Puskesmas* staff who monitor activities routinely through the integrated service post (*Pos Pelayanan Terpadu / Posyandu*).

**Keywords:** Dengue, Jumantik, Malang

### INTRODUCTION

Dengue remains a health problem in Malang, which is the second-largest city in East Java Province, Indonesia. Urban areas in Malang are generally stricken with dengue whose number of cases tends to increase each year. The worst case of dengue fever in Indonesia was in 2010, as reported in urban areas in Malang. In February 2010, there were 243 dengue fever patients reported by the Public Health Office of Malang. A total of 658 dengue cases were found in January to May in that year. However, the number of cases decreased in the following years afterward.

Regrettably, in 2014, the number of cases increased. There were 160 dengue patients and one patient died in 2014. In 2015, there were 181 dengue patients with three deaths. Moreover, the latest data in 2016 showed that the death rate increased by approximately ten people (1-3). Data show that dengue cases are higher in urban areas than in rural areas. These data are supported by a surveillance study in Malang in 2010 that urban areas have a greater risk of larvae finding than rural areas and have the potential to transmit dengue virus (4).

The Indonesian Ministry of Health has several strategies and programs to control the spread of dengue infection. In 1992, the Ministry launched a strategy that included surveillance systems, case management, vector controls, and changes in community behavior. Vector controls and changes in community behavior were combined through a surveillance system. This program is known as 3M plus that means fighting mosquito nests regularly, conducted by the public. The 3M plus slogan consists of “3M” and extra methods. The “3M” consists of draining water reservoirs (Menguras), closing water reservoirs (Menutup), and burying or recycling used water containers (Mengubur / Mendaur ulang), while “Plus” is an activity to reduce mosquito breeding sites, such as fogging or the use of chemicals to kill larvae. “Plus” can also be described as the activities to protect people from mosquito bites, such as by using mosquito coils, larvicides, or long sleeves and long trousers. The success of mosquito nests reduction activities can be measured by the larva free index. If the larva free index is more or equal to 95%, it is expected that dengue transmission can be reduced or prevented (5, 6).

Since 2004, the government has introduced the Communication for Behavioral Impact (COMBI) program to change behavior to support the reduction of mosquito breeding sites. The implementations of this program are carried out in several cities, such as Jakarta, Padang, Yogyakarta, Bandung, Tangerang, and Surabaya. However, this program has not succeeded in minimizing mosquito breeding sites. During 2007 and 2009, the larva free indexes were lower than the national target. The incidence rate was more than 20 per 100,000, which is higher than the national target. However, mortality rates decreased by less than 1%. According to these backgrounds, the government has tried to promote and improve people's behavior (5).

In the “Indonesia Sehat 2016” program, the strategy used was to strengthen health services through the family approach. According to the technical guidelines of Ministry of Health of 2016, “one house one Jumantik” program is the role and empowerment of the community by involving each family in the inspection, monitoring, and eradication of mosquito larvae to control infectious diseases, especially Dengue Fever through the socialization of the 3M Plus Eradication of Mosquito Nest (7). Therefore, this activity aimed to increase community participation to conduct a “one house one Jumantik” program.

## **MATERIALS AND METHODS**

The study was a quasi-experimental post-test only group located in Karangbesuki sub-district, Malang City from August until September 2017. One cluster *Rukun Warga* (RW) from the Karangbesuki sub-district that consisted of 9 *Rukun Tetangga* (RT) was chosen as the location. The intervention was in collaboration with the Mulyorejo Public Health Center in Malang.

There were eight RT participated in this program. Each RT selected one resident as the coordinator of Jumantik and 20 residents as the Jumantik in their own home. The materials provided were calendars that contain larva monitoring sheets that would be used to monitor larvae independently. The "one house one Jumantik" program manual was also distributed to health volunteers and residents who work as Jumantik coordinators at each RT level.

The activities consisted of three stages. First stage was ovitrap training and conducting focus group discussions with the community. Community including representative health volunteers in each RT, ibu RT (woman leader of RT), and a representative from primary health care. Second stage was providing health promotion and training regarding the "one house one Jumantik" program inserted into the social gathering of women (*arisan PKK*). This activity included the distribution of larva monitoring calendars and "one house one Jumantik" materials to 150 randomly selected people from eight RT. The materials presented in this activity were information of the "one house one Jumantik" program including how to do it, who could be a *Jumantik*, and where to observe the mosquito larva. The calendars that contain larva monitoring sheets were given to the participants. The last stage was organizing the best RT contest. The evaluations used were the best RT, *Jumantik* name list, and also the number of *Jumantik* who reported mosquito larva observation in their calendars.

## RESULTS AND DISCUSSION

Ovitrap training and focus group discussion activities were attended by health volunteers and representatives from each RT. Only 6 from a total 10 health volunteers performed ovitrap placement. The results of the six collected ovitraps showed no *Aedes aegypti* eggs. These negative results could be caused by errors in the construction of the ovitrap or the lack of ovitrap duration including time and attractant type (8-10). The study showed ovitrap was done more than two weeks (8) which could not be done in this study because the lack of resources to control it every week. Straw water and even shrimp marinated water could attract more mosquitoes than normal water, which were used in this study (9-10).

From the focus group discussion, it found that some participants had misperceptions of the dengue cases in their neighborhood coming from the outside. Several of them are migrants who have high mobility, they travel to their hometown on the weekend. They concluded that the patients got the disease when they were outside then spread it to their neighborhood. Furthermore, they found several uninhabited houses and buildings which could be the place of mosquitoes nests. Indeed, some people did not permit health volunteers to come into their house for examining the mosquito larva. These reasons lead some residents do not want to practice good dengue prevention. Previous study found respondents who had positive perception showed better dengue prevention behavior than those who had a negative perception. Also, people who considered themselves had higher risk to get dengue infection would practice good dengue prevention (11)

Regarding knowledge, the results showed an increased level of knowledge among 48 participants. The mean of the pre-test was 68.75 and the mean of the post-test was 87.5. This showed there was a significant result of increasing knowledge levels among the participants.

Previous study reported giving education had a positive impact on knowledge (12). However, the post-test was done immediately after getting health promotion that might cause bias in this study. Although they had good knowledge, the practice to be *Jumantik* was still poor that was shown from less of participants who filled the form in the calendar. The evaluations used self-reports on the calendar. From the monitoring results of 148 people who received the calendar, only 79 people reported larva monitoring in their homes independently on the calendar. Previous studies also reported that a good level of knowledge did not relate to the good practice of dengue prevention behavior (13-15).

The list of *Jumantik* teams in *Rukun Warga* (RW), was made based on the mutual agreements, including a list of *Jumantik* names in the RT. However, due to some leaders in each RT concerned about their job, the activity was slightly hampered. Some residents also rejected *Jumantik* to observe their home. Therefore, they proposed that the team should be legally assigned by the letter of assignment from the RW or the village office.

Best RT contest competition criteria were the completeness of the *Jumantik* calendar self-report, the activeness of the *Jumantik* coordinator, and the number of houses participated in each RT. This activity evaluates the role of coordinator to encourage their team for doing larva monitoring and reports on the self-form. Based on the evaluation, three best RT were obtained, in which the coordinator and the team of *Jumantik* performed a good job.

Furthermore, the success of creating the *Jumantik* team was initiated by primary health care staff and collaborated with an ex woman leader of RW also health volunteers. Based on the theory of innovation diffusion, primary health care staff, an ex woman leader of RW or RT, and health volunteers are the early adopters who acted as role models in their neighborhood. Primary health care staff had an important role to work in monitoring the program through *Posyandu* that has been held every month. Meanwhile, other participants are the early majority because others have done so and they come to believe that it is the right thing to do. This process is called an imitative effect (16,17). Maintaining this program needed support from all parties, including the community themselves that should be reinforced by the policy in their RW.

## **CONCLUSION**

This activity succeeded in establishing a *Jumantik* team in each RT, although there was one RT that has not yet succeeded in forming a team. Furthermore, for the sustainability of the program, it is hoped that this program could be improved by collaborating with Mulyorejo public health center staff who are responsible to monitor the activities routinely through the *Posyandu*.

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