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Increasing Awareness Cadres Regrading Environmental Cleanliness in Handling Danguue Fever Mosquito Flars

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A B S T R A C T

Several incidents of dengue fever cases in residents of RW 07 Pulowonokromo indicate that the large number of mosquitoes that cause dengue fever are attacking residents, dense environments and riverbank areas, which causes mosquitoes to breed quickly and it is necessary to prevent mosquito larvae. The dengue mosquito cycle begins with the Ae mosquito cycle, aegypti L. reproduce and undergo complete metamorphosis. This community service aims to make residents aware of the importance of breaking the chain of the Aedes aegypti mosquito, thereby minimizing the incidence of dengue fever in residents. The method used is to hold a workshop which is attended by cadre mothers. The workshop attended by residents had a positive impact. Conclusion: From the activities that were attended by cadres of RW 07 Residents, Wonokromo Subdistrict, Wonokromo District, Surabaya City, which were attended by 52 participants with the characteristics of providing information that most of the workshop participants were high school educated and aged < 50 years with the profession of housewives who were very enthusiastic and full of enthusiasm in its implementation, this training was very beneficial to the participants and there was an increase in knowledge from the results of the pretest and posttest from the results of the correlation paired t-test. There was a significant difference between the Pre-Test and Post-Test based on the results of the Paired Sample T-Test with an Alpha of 5%.

INTRODUCTION

Some people sometimes underestimate the dangers of dengue fever, but they should know that it can be deadly in a matter of days (Nawang Asri et al., 2023). Mosquitoes are one of the animals that can wreak havoc on humanity. One of them is the Aedes aegypti type mosquito. This is due to the ability of this mosquito which, if it attacks humans, can have very dangerous impacts and even fatal consequences such as death if it does not receive proper treatment immediately (Siyam and Cahyati, 2019). The humans he attacked were indiscriminate, from all ages, both children and adults. The disease caused by this mosquito in Indonesia is known as Dengue Hemorrhagic Fever (DHF). The Aedes aegypti mosquito is often found in tropical areas (Rosdiana, 2019). The population will increase as the rainy season enters. These mosquitoes will nest in places flooded with clean water. Even rainwater can become a good nest for this animal. It is not difficult to build a nest for these mosquitoes. Because every used can, or dirty container that has water in it, can become a nest for these mosquitoes.

these mosquitoes (Tansil, Rampengan and Wilar, 2021).

Apart from that, this mosquito has special features compared to other types of mosquitoes. Starting from a different life cycle from ordinary mosquitoes. He can only be active from morning until 3 in the afternoon (Bellinda Putri Kolondam, Jeini Ester Nelwan, 2018). So, from morning to evening the *Aedes aegypti* mosquito will transmit the dengue virus to humans. This is the reason why mosquito exterminators only come to the house during the day (Yuningsih, 2019).

Several incidents of dengue fever cases in residents of RW 07 Pulowonokromo indicate that the large number of mosquitoes that cause dengue fever are attacking residents, dense environments and riverbank areas, which causes mosquitoes to breed quickly and it is necessary to prevent mosquito larvae. The dengue mosquito cycle begins with the *Ae* mosquito cycle. *aegypti* L. reproduce and undergo complete metamorphosis (Salim et al., 2021).

This community service aims to make residents aware of the importance of breaking the chain of the *Aedes aegypti* mosquito, thereby minimizing the incidence of dengue fever in residents. The Surabaya Health Service recorded 187 cases of dengue fever in 2022. As the year-end rainy season approaches, the Health Department is alerting and anticipating dengue fever. The transition from the dry season to the rainy season like now has the potential for mosquitoes to breed. Moreover, rain can fall at any time accompanied by hot and scorching weather (Wijirahayu and Sukesu, 2019). The *Aedes aegypti* mosquito is a mosquito that is very aggressive in hot temperatures. Active in the morning and evening (Ustiaty, Pertiwi and Aini, 2020), and even tends to bite indoors. The Surabaya City Government continues to strengthen efforts to prevent and control dengue fever. By continuing to campaign for dengue fever awareness efforts in the community, in this regard, it is necessary to strengthen knowledge among RW 07 cadres regarding the prevention of dengue fever mosquitoes by providing insight into the importance of preventing rather than treating. RW 7 is in the Strent River and has a very dense population.

METHOD

The method that will be applied in this community service activity is an educational mini-seminar with the following explanation:

Time and Place of Implementation

This community service activity program will be held in RW 07, Wonokromo Village. The program will be implemented for 1 month.

Target Participants

The target participants are elderly residents of RW 07, Wonokromo Village

- a. Stages or Step Which will be held for solution Which offered Will in organize it Counseling to the cadres in RW 07, Wonokromo Village, they conveyed about handling dengue fever mosquitoes in the

form of a workshop program aimed at providing solutions to the problem of handling the aides agepty mosquito which causes dengue fever.

b. Participation partner in the implementation program

Organizer Workshops Increased awareness of female cadres regarding environmental cleanliness in handling dengue fever mosquito larvae in RW 07 Wonokromo sub-district, the workshop program is aimed at providing solutions to the problem of handling the aides agepty mosquito which causes dengue fever

c. Method evaluation implementation program and continuity program after activity devotion to What the community has done is to monitor environmental cleanliness and monitor mosquito larvae.

RESULT AND DISCUSSION

By continuing to campaign for dengue fever awareness efforts in the community, in this regard, it is necessary to strengthen knowledge among RW 07 cadres regarding the prevention of dengue fever mosquitoes by providing insight into the importance of preventing rather than treating. RW 7 is in the Strent River and has a very dense population. The following is a series of outreach activities to increase awareness of female cadres regarding environmental cleanliness in handling dengue fever mosquito larvae.



Figure 1. Flyer Announcement of Workshop Activities to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Greetings for Handling Dengue Fever Mosquito Larvates

The invitation was made in the form of a Flyer Announcement of Workshop Activities to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Greetings on Handling Dengue Fever

Mosquito Larvae to be distributed to all cadre groups. The following are the characteristics of workshop participants.

Table 1. Characteristics of Workshop Participants to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Greetings for Handling Dengue Fever Mosquito Larvates

No	Characteristics	Frequency	Percentage
Education			
1	Elementary school	4	7.69%
2	Junior High School	12	23.08%
3	Senior High School	31	59.62%
4	Bachelor	5	9.62%
Audience Age			
1	< 50 Years	30	57.69%
2	50 - 55 Years	12	23.08%
3	56 - 60 Years	6	11.54%
4	> 60 Years	4	7.69%
Work			
1	Retired	4	7.69%
2	Government employees	5	9.62%
3	Housewife	35	67.31%
4	Other	8	15.38%
		52	100.00%

Table 1 provides information that most of the workshop participants were high school educated aged < 50 years and were housewives.



Figure 2. Implementation of Workshop Activities to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Greetings for Handling Dengue Fever Mosquito Larvates

Quoting the Ministry of Health, dengue fever or *dengue hemorrhagic fever* usually increases during the middle of the rainy season because there are more mosquito breeding places (Primarti and Trisnasari, 2018). Activities to drain or clean places that often become water reservoirs. The walls of the tub and water reservoir must also be scrubbed to clean and remove mosquito eggs that are tightly attached to the walls. During the rainy and transition seasons, this activity must be carried out every day to break the life cycle of mosquitoes which can survive in dry places for 6 months (Suryowati, Beki and Faradila, 2018).

Activities to tightly close water reservoirs, such as bathtubs or drums. Closing can also be interpreted as the activity of burying used items in the ground so as not to make the environment dirtier and potentially become a breeding ground for mosquitoes. Burying used items is the activity of burying used items that have the potential to hold water which can become a breeding ground for mosquitoes that cause dengue fever. If you don't bury it, perhaps you can reuse the economically valuable waste (recycled) as another way to prevent the spread of mosquitoes that cause dengue fever (Afifi, 2018).

The mosquito life cycle occurs in four stages, namely starting with the egg stage, then becoming a larva, pupa, and then becoming a mosquito. The mosquito life cycle lasts 8-10 days. The way to break the mosquito life cycle is by draining and closing water reservoirs and reusing used goods (Sukendra, Indrawati and Hermawati, 2017). Knowing the mosquito life cycle is important to break it and prevent various diseases related to mosquitoes, such as dengue fever. The mosquito life cycle occurs in four stages and generally lasts 8-10 days, but some last up to a month (Jannah *et al.*, 2022).

The first three stages in the mosquito's life cycle occur in water and only in the fourth stage, when the mosquito has developed into an adult mosquito, will it live by flying in the air. Mosquitoes are one of the deadliest animals in the world (Susilowati and Cahyati, 2021). Because its ability to spread disease can cause millions of deaths every year. According to data released by WHO, in 2015, malaria caused 438,000 deaths worldwide. Apart from malaria, diseases caused by other mosquitoes, such as dengue hemorrhagic fever, also cause quite a few fatalities (Tirtadevi, Riyanti and Wisudanti, 2021).

Cases of dengue hemorrhagic fever have increased 30-fold in the last 30 years and are an endemic disease in Indonesia. DHF is caused by the dengue virus which is spread through the bite of the *Aedes aegypti* mosquito. When infected with dengue fever, symptoms such as fever, rash or red spots on the skin, body aches, nausea and vomiting can be felt. Preventing the spread of disease due to mosquito bites is most effective when mosquitoes are still in the early stages of their life cycle (Triana, Hardiansyah and Taurina, 2020).

Dengue fever is an infectious disease caused by a virus that is transmitted through mosquito bites. This disease causes symptoms of high fever, headache, and bone and muscle pain. If not treated properly, dengue fever is life-threatening. Dengue fever or DHF can attack children and adults (Asep, 2014). This disease is transmitted when mosquitoes carrying the *Dengue virus* bite people with dengue fever, and then bite healthy people. This disease is often found in tropical climates, including Indonesia, and the incidence of this disease usually increases during the rainy season (Taamu, Misbah and Purnama, 2018). Dengue fever occurs more often during the rainy season. This is because, during that season, the *Aedes aegypti* mosquito breeds more. In addition, a person is more at risk of contracting dengue fever if he is in an area with high cases of dengue fever, especially if the area is densely populated (Espiana *et al.*, 2022).

The main symptom of dengue fever is a sudden increase in body temperature. In children, the fever phase of dengue fever is shaped like a horse's saddle, namely it goes down for a few days, then goes up again. Fever in dengue fever generally lasts for 3 days. Fever can reach temperatures of 39-40°C and is difficult to reduce even if the patient has taken fever-reducing medication (Ira Aini Dania, 2020).

The characteristics of dengue fever can be recognized through bleeding, pain, digestive disorders, and even shock. Here are some of them: High fever, sudden, continuous, for 2–7 days Signs of bleeding, such as a rash appearing in the form of red spots on the skin, nosebleeds, bleeding gums, bloody vomit (Indah, 2022), or bloody bowel movements Headache, muscle pain, joint pain, or pain behind the eyes Digestive disorders characterized by nausea, vomiting, stomach pain in the pit of the stomach or under the ribs Sometimes accompanied by a sore throat, cough, runny nose In a state of shock, the sufferer feels weak, restless, and decreased consciousness. High fever in babies can sometimes cause seizures. If some of the above symptoms of dengue fever appear, immediately take the sufferer to the nearest doctor or hospital (Taamu, Misbah and Purnama, 2018). Some of the material that has been presented is that participants are required to take a pretest and posttest to find out the results achieved after the training. The following are the results of the participants' pretest and posttest:

Table 2. Results of Pre-Test and Post-Test for Workshop Participants to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Regarding Handling of Dengue Fever Mosquito Larvates

No	Question	Pretest	Post Test
1	Mosquito Cycle	64.7%	83.8%
2	Prevention of Dengue Fever Mosquitoes	62.9%	81.9%
3	Signs of dengue fever	69.9%	84.5%
4	Dengue Fever	63.6%	87.7%
5	Mosquito Larvae and Their Problems	67.2%	89.8%
6	Abate Powder	65.8%	87.5%
7	Handling of Piles of Waste	62.2%	88.8%
8	Where Mosquitoes Hide	64.9%	88.9%
9	Handling dengue fever	63.9%	85.7%
10	Dengue Fever Cycle	67.4%	81.9%
Average		65.3%	86.0%

Table 2 shows the results of an increase in the average score from the Pretest from 65.3% to 86%. The following are the results of the *Paired T-Test Sample test*.

Table 3 Results of *Paired Samples Correlation* of Workshop Participants to Increase Awareness of Cadre Mothers Regarding Environmental Cleanliness Regards for Handling Dengue Fever Mosquito Larvates

No	Paired Samples Correlation	Value
1	<i>Pre Test</i>	64.6
2	<i>Post Test</i>	85.3
3	<i>Correlation</i>	0.765
4	<i>Sig (2-Tailed)</i>	0,000

Table 3 shows this correlation explaining the correlation or relationship between the two *Pre-Test* and *Post-Test data Correlation* is 0.765, so it can be concluded that the two data (variables) are correlated. Based on the results of the analysis above, it can be seen that Sig. (2-tailed) < Alpha (0.000 < 0.05). This

means that H_0 is rejected and H_a is accepted. In other words, there is a significant difference between the Pre-Test and Post-Test based on the results of the Paired Sample T-Test with an Alpha of 5%.



Figure 3. Implementation of Environmental Cleaning Activities and Inspection of Mosquito Larvae in Water Reservoirs and Bathroom Tubs

Before turning into pupae, mosquito larvae obtain food from microorganisms in the water. So, they can change their skin. Mosquito larvae live in stagnant water. Larvae continue to grow if the puddle is not cleaned. Ticks are also dangerous; they can transmit dengue fever and malaria. The larva hangs on the surface of the water to breathe. In some areas, larvae are also called “uget-uget”. The danger of larvae cannot be underestimated, residents need to eradicate them so that larvae do not continue to grow.



Figure 4 Distribution of Abate Powder to Residents of RW 07, Wonokromo Village, Wonokromo District, Surabaya City

Abate powder is very effective in eradicating mosquito larvae that carry dengue fever or malaria. Note that the correct way to use abate is to mix it in water at a ratio of 1 gram/10 litres of water. When talking

about eradicating mosquito nests, it would be incomplete if we did not discuss abate powder (Sukendra, Indrawati and Hermawati, 2017). Moreover, Indonesia even has the term 'abatization' to describe the activity of eradicating dengue fever by sprinkling abate powder. Abate is a trademark for a drug that exterminates larvae (larvicida) produced by the German chemical company, BASF. This drug aims to control dengue fever, malaria, or diseases caused by mosquitoes by preventing their reproduction (Tirtadevi, Riyanti and Wisudanti, 2021).

CONCLUSION

From the activities that were attended by the cadres of the Residents of RW 07, Wonokromo Village, Wonokromo District, Surabaya City, which were attended by 52 participants with the characteristics of providing information that most of the workshop participants were high school educated and < 50 years old with the profession of housewives who were very enthusiastic and full of enthusiasm. In its implementation, this training was very beneficial to the participants and there was an increase in knowledge from the results of the pretest and posttest from the correlation paired t-test results. There was a significant difference between the Pre-Test and Post-Test based on the results of the Paired Sample T-Test with an Alpha of 5%.

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