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Community Empowerment in Malaria Elimination in Mbatakapidu Village

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A B S T R A C T

61.9% or 318 districts/cities were declared malaria-free and there are still 196 districts/cities that are targeted for elimination. The total number of malaria sufferers in Mbatakapidu village is 6 sufferers in 2020, 55 in 2021, 155 in 2022 and has decreased, namely in 2023 the number of sufferers is 56. The goal is to improve community knowledge and skills in the health sector by providing independent malaria prevention education that can be carried out by the community, developing independent community groups in the health sector by empowering malaria cadres and providing education to the community regarding the use of mosquito nets Results: There was an increase during the post-test, namely good 68% and sufficient 32%. The Mbatakapidu Village community became aware of malaria and procedures for modifying the environment and learned about the importance of maintaining cleanliness both in the environment and in the house.

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INTRODUCTION

It is estimated that 41% of the world's population lives in areas at high risk of malaria infection especially in tropical and subtropical areas. In 2005-2012, malaria cases generally tended to decline. The Strategic Plan (Renstra) for the period 2010-2011 has a target to reduce API (Annual Paracites Incidence) to 1 case per 1000 population for 2014. API (Annual Paracites Incidence) in 2009 was 1.85‰ and decreased to 1.75‰ in 2011, and decreased again in 2013 to 1.38‰ and approached 1‰ in 2014. In 2005-2012, malaria cases generally tended to decline. The Strategic Plan (Renstra) for the 2010–2011 period has a target to reduce API (Annual Paracites Incidence) to 1 case per 1000 population for 2014. API (Annual Paracites Incidence) in 2009 was 1.85‰ and decreased to 1.75‰ in 2011, and decreased again in 2013 to 1.38‰ and approached 1‰ in 2014.

In Indonesia, there were 254,050 recorded cases of malaria in 2020. The national malaria elimination target is 2030 and currently 61.9% or 318 districts/cities have been declared malaria-free and there are still 196 districts/cities that are the target for elimination. However, East Sumba district has not yet achieved malaria-free status. East Nusa Tenggara Province consists of 16 districts/cities and all are malaria endemic areas. In achieving national malaria elimination, areas with high malaria cases strive to reduce cases to zero, while areas that have been eliminated enter the maintenance phase. Based on the guidelines for maintaining malaria elimination from the Indonesian Ministry of Health, it is stated that areas that have achieved elimination are still at risk of re-transmission, especially in receptive areas due to the mobilization of residents in endemic areas. Therefore, there is a need for a malaria program in maintenance areas to prevent re-transmission, including in the surveillance and early warning system, population mobilization and case management networks.

According to data obtained from the Waingapu Health Center, the number of malaria cases in 2020 was 12 cases, in 2021 there were 58 cases, while in 2022 there were 144 cases of malaria. With a total of 6 malaria sufferers in Mbatakapidu village in 2020, 55 in 2021, 155 in 2022 and experiencing a decline, namely in 2023 the number of sufferers was 56.

Malaria is an infectious disease that is still a public health problem in the world, including Indonesia, with quite high mortality and morbidity rates and the potential to cause extraordinary events. The causative agent of malaria is a parasite in the form of *Plasmodium* which has various clinical manifestations such as fever, chills, tired legs and headache. Malaria is very common and has been reported in 106 countries, 97 of which are endemic

In Indonesia, malaria is an infectious disease that must be eradicated as soon as possible, and is an important part of health development. Malaria is still a health problem in Indonesia and East Sumba in particular. Although the trend of cases and deaths shows a decline, it is still a concern and requires serious efforts from various elements so that malaria elimination in Indonesia in 2030 can be achieved.

From the results of interviews with local village officials, the Mbatakapidu village community still really needs assistance in training and motivation for malaria cadres, Health Education on the importance of preventing malaria in

Mbatakapidu village, teaching in the use of mosquito nets, and examples in modifying the environment for the community.

Therefore, it is necessary to hold an activity that aims to increase public understanding in preventing and handling malaria in the community. What can be done in modifying the environment, residence, maintaining the cleanliness of livestock pens, to knowledge about malaria itself.

IMPLEMENTATION AND METHODS

The implementation method in this community service is to carry out socialization to existing malaria cadres and community leaders. The team identifies partner needs, carries out training to existing malaria cadres and provides education and teaching to the community in empowering them to prevent malaria such as in the use of mosquito nets, environmental modification, clean living behavior, etc.

This implementation method is carried out from the preparation stage such as licensing, coordination, identification then entering the implementation stage such as socialization, conducting training for existing malaria cadres, health education to the community in relation to malaria prevention, proper and correct use of mosquito nets, environmental modification, clean living behavior, after the implementation stage is carried out, there is assistance and monitoring and evaluation by seeing how ready the cadres are in helping together to train the community, mosquito nets have been used according to their function properly and correctly, the environment has been modified although many have not implemented environmental modifications, and monitoring the community in carrying out prevention independently at home and in the home environment.

Malaria is an acute febrile disease caused by infection with the plasmodium parasite. This parasite is transmitted through the bite of a female Anopheles mosquito. Malaria has a wide distribution area, covering tropical and subtropical climates. In Indonesia, the distribution of malaria is known to be throughout the archipelago with the highest number of sufferers in eastern Indonesia. Based on the WHO report in the World Malaria Report 2021, Indonesia has the second highest number of malaria cases in South and Southeast Asia, after India. Based on data from the Ministry of Health, malaria cases in Indonesia tend to decrease every year. In 2019 there were 250,628 cases of malaria in Indonesia, this figure continued to decrease to 226,364 and 94,610 cases in 2020 and 2021 caused by Plasmodium infection. In the world to date, there are 5 types of Plasmodium that cause malaria, namely Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale, Plasmodium malariae and Plasmodium knowlesi. There are four types of Plasmodium known in Indonesia, namely Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale, Plasmodium malariae, or mixed infections. Most cases of malaria in Indonesia are caused by Plasmodium falciparum and Plasmodium vivax, while Plasmodium ovale and Plasmodium malariae are usually found in eastern Indonesia.

RESULTS AND DISCUSSION

Results

Socialization Stage

This socialization stage takes the form of providing health education activities regarding malaria and procedures for using mosquito nets and introducing anti-mosquito plants that can be planted independently by the community as well as the use of mosquito nets that have been distributed by the local health center. The target of this activity is the community in Mbatakapidu village and the location of the activity is the Mbatakapidu Village Office, East Sumba Regency. The results obtained were that the community was very willing to take part in this activity regarding malaria and was committed to being able to use mosquito nets properly and correctly in order to achieve a malaria-free East Sumba. This activity was also carried out according to a predetermined schedule to which the team had written a letter addressed to the Mbatakapidu Village Head.

Activity Implementation Stage

The activity will be held in July 2023 and gathered at the Mbatakapidu village office. In this activity, participants fill in pre-test questions before counseling and post-test after conducting counseling through the questionnaire provided.

The results achieved in this community service are that this activity was welcomed by residents and the local Village Head. Where the community showed an increase in community knowledge with the number of participants being 22 people.

Table 1. Frequency Distribution of Community Knowledge Level in Reducing Malaria Before Intervention (pretest)

Knowledge	Fre	%
Good	4	18
Enough	18	82
Quantity	22	100

Based on Table 1 above, it can be seen that public knowledge about malaria before the intervention was given, public knowledge with a good category was 4 sufficient and 18 of them were in the sufficient category.

Table 2. Frequency Distribution of Malaria Knowledge After Intervention (posttest)

Knowledge	Fre	%
Good	15	68
Enough	7	32
Quantity	22	100

Based on Table 1 above, it can be seen that community knowledge about malaria before the intervention was given, the community knowledge was categorized as good, 15 were sufficient and 7 were in the sufficient category.

Figure 1. Team Prepares for Departure

Figure 2. The extension activity was opened by the Village Head

Figure 3. People fill out a questionnaire

Evaluation of activities is carried out to see whether the community has been able to install mosquito nets correctly, modify the environment properly by planting mosquito repellent plants, maintain the cleanliness of livestock pens, maintain cleanliness inside the house and wear protection when leaving the house to avoid mosquitoes, If you look at the questions given, there is an increase in the post-test from the pre-test. Where 68% of participants were in the good category in filling out the questionnaire after counseling by the team. This shows that most of the participants already know about malaria, prevention and what things can be done in their living environment.

CONCLUSIONS AND RECOMMENDATIONS

Community service that has been implemented attended by the community, village officials, nurses and village midwives, that the community has a lack of awareness about the importance of preventing rather than treating malaria. After the implementation of this community service, it answered the formulated objectives that the community understands the things that need to be done to prevent malaria. The community has begun to be able to install and use mosquito nets properly, clothes have begun to be aware not to be hung inside the house which triggers mosquitoes and some residents have begun to clean their houses although not all can do it, If you look at the questions given, there is an increase in the post-test from the pre-test. Where 68% of participants were in the good category in filling out the questionnaire after counseling by the team. This shows that most of the participants already know about malaria, prevention and what things can be done in their living environment. In general, this community service explains to the community about: Malaria Prevention: Malaria can be prevented by various effective methods, such as maintaining the cleanliness of the surrounding environment, avoiding mosquito bites, and taking measures to control the malaria mosquito vector. Correct use of mosquito nets: Correct use of mosquito nets is very important to protect the body from mosquito bites that

cause malaria, especially at night. Mosquito nets must be installed tightly, without holes, and soaked with insecticide to provide maximum protection. Planting Anti-Mosquito Plants: Planting plants that have repellent properties against mosquitoes, such as lemongrass, lavender and basil, in your yard can help reduce the number of mosquitoes around the house. This plant provides natural protection with a scent that repels mosquitoes. By implementing these preventive measures, it is hoped that people can be better protected from the risk of contracting malaria and can live healthier lives.

Here are some recommendations from community service activities on malaria in the community, related to malaria prevention, proper and correct use of mosquito nets, environmental modification, and maintaining cleanliness:

1. Improving Education on Malaria Prevention: More intensive counseling: Routine and more intensive counseling needs to be carried out, involving the community in various forms, such as training, seminars, and distribution of information materials (posters, pamphlets, videos). This will help the community understand the importance of malaria prevention, as well as effective ways to avoid mosquito bites.
2. Proper and Correct Use of Mosquito Nets: Continuous training and monitoring of mosquito net use: The community needs to be given a clear understanding continuously about how to use mosquito nets properly, namely ensuring that the mosquito net covers the entire bed without any gaps that mosquitoes can enter. Mosquito nets must also be properly maintained and given insecticide regularly so that their effectiveness is maintained. Mosquito nets are also used properly. 3. Adequate distribution of mosquito nets: The government and health institutions must ensure that mosquito nets are sufficiently available, especially in malaria-endemic areas, and provide education on how to care for them.
3. Environmental Modification for Malaria Prevention: Cleaning water reservoirs: The community is advised to routinely clean water reservoirs around the house, such as bathtubs, water containers, or buckets, to prevent mosquito larvae from developing.
4. Good environmental management: Eliminate stagnant water and organize the surrounding environment properly to reduce mosquito habitats. The community can also be invited to plant mosquito-repellent plants around their homes, such as citronella or lavender.
5. Maintaining Environmental Cleanliness: Environmental cleanliness campaigns: Conduct regular cleanliness campaigns to educate the community about the importance of maintaining the cleanliness of the home environment and the surrounding area. A clean environment will reduce the risk of malaria mosquitoes breeding.
6. Socialization about waste disposal: The community is invited to dispose of waste in its place, and to manage household waste in the correct way, considering that piled-up waste can become a breeding ground for mosquitoes.
7. Collaboration with Related Parties: Collaboration between the community and health authorities: Closer collaboration is needed even though there has

been collaboration between the community and health workers, local governments, and the community in monitoring and preventing malaria. Active community involvement in malaria screening and treatment should also be encouraged.

8. Periodic monitoring and evaluation: To ensure that malaria prevention activities are effective, periodic monitoring and evaluation are carried out on efforts that have been made, including the use of mosquito nets and environmental cleanliness.

With these recommendations, it is hoped that the community will be more aware and active in malaria prevention efforts, so that it can reduce the incidence of this disease at the local and national levels.

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