



Study of Malaria Vector Control Efforts in Balasuna Village, Kaledupa District Wakatobi District

Taswin^{1*}, Dahmar², Wahyuddin³, Eky Endriana Amiruddin⁴, Mursiadin⁵
Universitas Dayanu Ikhsanuddin

Corresponding Author: Taswin taswin@unidayan.ac.id

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ABSTRACT

The number of malaria cases in Southeast Sulawesi, especially Wakatobi Regency is still high. This study aims to determine the description of efforts to control the Malaria Vector in Balasuna Kaledupa District, Wakatobi Regency. This type of research is analytic research with a descriptive approach. The population in this study was 418 households with a total sample of 72 households. Analysis of the data used is univariate analysis. The results showed that malaria vector control efforts in Balasuna Village, Kaledupa Subdistrict, Wakatobi Regency, were less than 43 (59.7%) of the use of Wire Nets and 29 (40.3%) respondents were sufficient, the use of anti-mosquito drugs was 42 (58.3 %) people and less than 30 (41.7%) people, the use of mosquito nets is 41 (56.9%) people and less than 31 (43.1%) people, less abating than 44 (61.1%) people and enough 28 (38.9%) people, and making 3M efforts showed that there were enough 39 (54.2%) and 33 (45.8%) less people. Suggestions are to increase community empowerment in preventing and controlling vectors by arranging a clean environment and healthy living behavior

INTRODUCTION

"Health is not everything, but without health everything is meaningless." This expression is in line with the definition of health according to WHO, namely a state of well-being, physical, mental and social perfection, not only limited to being free from disease and disability. Nowadays we are faced with multi-complex problems, infectious diseases are still health problems that have not been resolved, plus non-communicable diseases. One of the infectious diseases that still has a high prevalence/incidence rate in endemic areas is "Malaria". (Prabowo, 2017)

Data from Global Enemy states that tropical and subtropical areas are areas at high risk of malaria. Women who are pregnant and young children face a higher risk. Indonesia is one of the countries in Southeast Asia which is located in the tropics and is an endemic area for malaria and has a significant risk (Prabowo, 2017).

Malaria is a parasitic disease that is widespread throughout the world, although it is generally found in areas located between 60° north latitude and 40° south latitude (Yatim, 2016). Malaria is found in almost all parts of the world, especially in countries with tropical and sub-tropical climates and the population at risk of malaria is around 2.3 billion people or 41% of the world's population (Prabowo, 2017). Every year there are 300-500 million cases and result in 1.5-2.7 million deaths, especially in countries on the African continent.

Malaria is an infectious disease caused by the protozoan parasite of the genus *Plasmodium*. This disease is transmitted through the bite of the *Anopheles* mosquito. Malaria is found in almost all parts of the world. More than one hundred countries are malaria endemic areas with a population at risk of contracting malaria amounting to around 2.3 billion or 41% of the world's population (Prabowo, 2017)

In Indonesia, it is estimated that every year there are 15 million malaria sufferers and 30,000 of them die (Household Health Survey/SKRT, 2013). The prevalence of Malaria in Indonesia is 50 per 1000 population and is targeted to decrease to 5 per 1000 population in 2016 (Ministry of Health, 2015).

In Southeast Sulawesi in 2017 the number of clinical and positive malaria sufferers was recorded at 18,622 sufferers. In Wakatobi district, according to reports from the community health center, 435 cases of malaria were recorded. Specifically, in Kaledupa sub-district, in 2017 there were 107 cases of malaria recorded (Wakatobi Health Office, 2018). In 2017 the number of malaria cases was 136 cases, specifically in Balasuna Village there were 78 cases of Malaria. (Wakatobi Health Office, 2018)

LITERATURE REVIEW

Based on the data above, it appears that the number of malaria cases in Southeast Sulawesi, especially Wakatobi Regency, is still increasing. Therefore, researchers are interested in conducting research on community efforts to control malaria vectors in order to prevent an increase in the number of malaria cases. From 2017 the number of malaria cases was 52 cases, in 2018 there was an increase in the number of cases of 78 cases in Balasuna Village, Kaledupa District, Wakatobi Regency which could cause death for those affected by malaria. (Puskesmas Report, 2018)

METHODOLOGY

Types of Research

The type of research used is analytical research with a descriptive approach, namely to describe efforts to control malaria vectors in Balasuna Village, Kaledupa District, Wakatobi Regency.

Research Location and Time

The research location was in Balasuna Village, Kaledupa District, Wakatobi Regency from February to March 2019.

Population and Sample

The population is all heads of families in Balasuna Village, Kaledupa District, Wakatobi Regency, totaling 418 heads of families. The sample size for this research was 72 families with the sampling method using random sampling.

Data Collection

Data was collected in two ways, namely primary data obtained from respondents using questionnaires related to efforts to control malaria vectors. Secondary data was obtained from the Wakatobi District Health Service and Buranga Health Center, Kaledupa District in the form of profiles, journals and annual reports of the community health center program.

Data Analysis

Data processing is carried out using a computer through the SPSS (Service Package for Social Science) program and is presented in tabulated form accompanied by narrative. The data analysis used is univariate analysis. This means analyzing existing individual characteristic variables descriptively by calculating the frequency distribution and proportions to determine the characteristics of the research subjects.

RESULTS

Analysis of Respondent Characteristics and Research Variables

Table 1. Distribution of Respondents Based on Gender, Age, Education Level and Occupation in Balasuna Village, Kaledupa District, Wakatobi Regency

Variable	N	%	Variable	n	%
Gender			Work		
male	42	58,3	Doesn't work	10	13,9
female	30	41,7	Farmer	19	26,4
age			Fisherman	21	29,2
20 – 29	3	4,2	Civil servants	1	1,4
30 – 39	12	16,7	Housewife	9	12,5
40 – 49	25	34,7	Sailor	2	2,8
50 – 59	20	27,8	Motorcycle taxis driver	1	1,4
60 – 69	11	15,3	Honorary	3	4,2
70 – 79	1	1,4	Self-employed	6	8,3
Level of education			Total	72	100,0
No SchoolSD	21	29,2			
	29	40,3			
SMP	7	9,7			
SMA	15	20,8			

Source: Primary Data, 2019

Table 1 shows that of the 72 respondents there were 42 (58.3%) male respondents and 30 (41.7%) female respondents. Based on the group of respondents, the majority of respondents were aged 40 - 49 (years old) as many as 25 (34.7%) respondents and the lowest in the age group 70 - 79 (years), namely 1 (1.4%) respondent. Based on the educational level of the respondents, it was found that the majority of respondents had an elementary school education level of 29 (40.3%) and at least a junior high school education level of 7 (9.7%) respondents. Meanwhile, based on occupation, the majority of respondents were fishermen, 21 (29.2%) while the minority respondents were PSN and motorbike taxi drivers, each with 1 (1.4%) respondent.

Table 2. Distribution of Respondents on Malaria Vector Control Efforts Based on the use of Wire Mesh, Use of Anti-Mosquito Medication, Mosquito Netting, Abatesation, and 3M Activities in Balasuna Village, Kaledupa District, Wakatobi Regency

Research variable	Amount	
	N	%
Use of Gauze Wire		
Enough	29	40,3
Less	43	59,7
Amount	72	100,0
Use of Anti-Mosquito Medication		
Enough	42	58,3
Not enough	30	41,7
Amount	72	100,0
Netting		
Enough	41	56,9
Not enough	31	43,1
Amount	72	100,0
Abatement		
Enough	28	38,9
Not enough	44	61,1
Amount	72	100,0
3 M Activities		
Enough	39	54,2
Not enough	33	45,8
Amount	72	100,0

Source: Primary Data, 2019

Based on table 2 above, it shows that the majority of respondents have not used wire mesh for house ventilation, namely 43 (59.7%) people and 29 (40.3%) respondents, there are still respondents who do not use anti-mosquito medication. mosquito repellent, namely as many as 30 (41.7%) people and 42 (58.3%) people are sufficient, mosquito nets still have respondents who do not use the mosquito net method, namely 31 (43.1%) people and 41 (56, enough) 9%) people, the majority of respondents who did little or did not abate, namely 44 (61.1%) people and 28 (38.9%) people enough, and 33 (45.8%) people did 3M activities. did not carry out 3M activities and 39 (54.2%) did enough 3M efforts.

DISCUSSION

Efforts to Control Malaria Vectors Based on the Use of Wire Mesh in Balasuna Village, Kaledupa District, Waktobi Regency

The results of research at the Balasuna Dses, Kaledupa District, Wakatobi Regency regarding Malaria Vector Control Efforts Based on the Use of Wire Mesh, showed that the majority of respondents had not used wire mesh for house ventilation, namely 43 (59.7%) people and 29 (40.3%) enough. respondents. Based on observations made, it shows that in the majority of community houses in Balasuna Village, the use of wire mesh for house ventilation is still lacking at 59.7%. This is due to a lack of public knowledge and awareness in efforts to handle malaria incidents, especially in terms of controlling malaria vectors. Apart from that, most of the respondents' houses in Balasuna Village are still semi-permanent houses. So there are still many houses that do not use wire mesh in the ventilation section because the house does not have ventilation. However, there were 29 (40.3%) respondents who had made efforts to control malaria vectors using wire mesh because these respondents were aware and knew the importance of using wire mesh for ventilation in preventing mosquitoes from entering their house. So it can prevent the occurrence of malaria in the home environment, especially inside the house.

The results of this research are in accordance with the results of research conducted by Ahmadi (2008) that the use of wire mesh in ventilation can prevent the incidence of malaria in Lubuk Ninipis Village, Tanjung Agung District, Muara Enim Regency.

Efforts to Control Malaria Vectors Based on the Use of Anti-Mosquito Drugs in Balasuna Village, Kaledupa District, Wakatobi Regency

The results of research in Balasuna Village, Kaledupa District, Wakatobi Regency, regarding efforts to control malaria vectors based on the use of anti-mosquito medication, showed that there were still respondents who did not use anti-mosquito medication, namely 30 (41.7%) people and 42 (58.3%) enough.) person.

This is because prevention efforts using anti-mosquito drugs have not yet become widespread in the community. The habit of not using mosquito repellent at bedtime is often found among people in Balasuna Village. This habit is common among people because malaria is no longer considered a dangerous disease. This is because Balasuna Village, Kaledupa District, Wakatobi Regency is an area categorized as an endemic area and the incidence of malaria has been going on for a long time.

The use of mosquito repellent among residents is influenced by socio-economic factors in the community. The money you have will be spent on other purposes than buying mosquito repellent. Apart from that, considering the public opinion that malaria is not a dangerous disease, many people consider mosquito bites to be a normal natural phenomenon and not a serious problem. However, the use of anti-mosquito medication can pose a risk of other diseases appearing. These risks include the entry of insecticides into the human body through inhalation or skin tissue as well as other risks from burning mosquito repellent, especially for people who have respiratory system problems.

The results of this research are in line with the results of research conducted by Ahmadi (2008) which found significant results between the use of mosquito repellent and the incidence of malaria in Lubik Nipis Village.

Efforts to Control Malaria Vectors Based on Netting in Balasuna Village, Kaledupa District, Wakatobi Regency

The results of research in Balasuna Village, Kaledupa District, Wakatobi Regency, regarding efforts to control malaria vectors based on the use of mosquito nets, showed that there were still respondents who did not use the mosquito net method, namely 31 (43.1%) people and 41 (56.9%) people who were moderate.

This is caused by using a mosquito net while sleeping, there is still a chance of being bitten by a mosquito, because when it has to be opened and closed, although the possibility is small, there is still a chance that a mosquito will sneak into the mosquito net. Apart from that, installing a mosquito net that is too high will give mosquitoes the opportunity to enter through the gap between the mosquito net and the bed. Apart from that, the condition of the mosquito net is also important because if the mosquito net used has a lot of tears/holes, the holes can be used as a place for mosquitoes to enter and exit the mosquito net.

The habit of using mosquito nets has been socialized by health workers. In general, residential areas in rural areas, especially in Balasuna Village, Kaledupa District, Wakatobi Regency, have 1 - 2 bedrooms, sometimes there are still many family members who sleep not in the bedroom, usually in a family who sleep using mosquito nets are generally children. In fact, in 2018 the Wakatobi District Health Service, through global fund procurement, distributed mosquito nets containing insecticide to the community. The distribution of insecticide nets is still prioritized to families with toddlers. If you look at this, families who don't have toddlers don't get mosquito nets, so not all the people in Balasuna Village, Kaledupa District, Wakatobi Regency sleep using mosquito nets.

Efforts to Control Malaria Vectors Based on Abatement in Balasuna Village, Kaledupa District, Wakatobi Regency

Abatement is an effort to control malaria vectors which aims to prevent the reproduction of mosquito larvae in water reservoirs or water tanks. The abatement method is carried out by administering abate powder to water reservoirs that are possible breeding grounds for malaria vectors.

The results of research in Balasuna Village, Kaledupa District, Wakatobi Regency, regarding efforts to control malaria vectors based on abatement, showed that the majority of respondents did little or no abatement, namely 44 (61.1%) people and 28 (38.9%) people had enough.

Based on observations made by researchers, there are still 61.1% of respondents or people who do not provide abate powder to the water reservoir in their house. This is due to a lack of public knowledge about how to use abate powder. Therefore, the community hopes for the participation of related parties in socializing the use of abate powder, especially health workers at the Community Health Center.

Malaria Vector Control Efforts Based on 3 M Activities in Balasuna Village, Kaledupa District, Wakatobi Regency

The 3 M activity (Draining, Covering and Piling) is one of the environmental management activities in order to prevent the occurrence of malaria. In this case, it is an activity to modify the environment (permanent). Environmental modification activities are any permanent physical modification activities of soil, water and plants which aim to prevent, eliminate or reduce mosquito breeding sites without causing a negative impact on the quality of the human environment. (Prabowo, 2004)

The results of research in Balasuna Village, Kaledupa District, Wakatobi Regency, regarding efforts to control malaria vectors by carrying out 3M efforts showed that there were 33 (45.8%) people who did not carry out 3M activities and 39 (54.2%) who carried out sufficient 3M efforts.

Based on observations regarding 3 M activities in the context of controlling malaria vectors carried out by some people in Balasuna Village, Kaledupa District, Wakatobi Regency, there are pools of water around their houses. This can trigger the proliferation of malaria vectors. However, only a small percentage of people carry out efforts to fill up standing water around the house. Specifically for water reservoirs, the average community has made efforts to drain and close the water reservoirs.

3M's efforts carried out by the people of Balasuna Village, Kaledupa District, Wakatobi Regency, include closing water reservoirs at home when the water is not being used. Piling up used goods behind the house and draining water reservoirs every 2 weeks. However, based on researchers' observations, there are also people who do not make 3M efforts in their household environment.

CONCLUSIONS AND RECOMMENDATIONS

In accordance with the results of the presentation and discussion of research data, in order to answer the formulation and objectives of the research, it can be concluded that efforts to control malaria vectors in Balasuna Village, Kaledupa District, Wakatobi Regency are as follows: The use of wire gauze shows that 43 (59.7%) people are less and sufficient. 29 (40.3%) respondents, the use of mosquito repellent showed sufficient for 42 (58.3%) people and less than 30 (41.7%) people, the use of mosquito nets showed enough for 41 (56.9%) people and less 31 (43.1%) people, Carrying out abatement showed that it was insufficient for 44 (61.1%) people and sufficient for 28 (38.9%) people, and Carrying out 3M efforts showed that it was sufficient for 39 (54.2%) and insufficient for 33 (45.8%) people.

The suggestions for this research are to build partnerships with all related agencies who are concerned about malaria or at least need to raise their awareness of efforts to control malaria vectors, improve the skills of officers both managing malaria programs and cadres in the community in preventing malaria, increasing community empowerment in preventing and controlling vectors by arranging a clean environment and healthy living behavior, providing education about malaria and simple and cheap prevention methods to the community, and studying the dynamics of malaria transmission specifically locally is very necessary because the dynamics of malaria transmission differ from one region to another. so that it can be used as a basis for controlling and breaking the chain of malaria transmission.

FURTHER STUDY

This research still has limitations, so it is necessary to carry out further research related to the topic of Study of Malaria Vector Control Efforts in order to improve this research and add insight to readers.

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