KNOWLEDGE AND PRACTICE IN THE MALARIA PREVENTION IN COMMUNITY OF KUPANG CITY AND KUPANG DISTRICT

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ABSTRACT

Malaria is a public health problem in the world, including in Indonesia and Nusa Tenggara Timor (NTT) Province. Kupang District was including the highest malaria cases in NTT in the last 3 years. Kupang City was including the lowest malaria cases in the last 3 years. This study aims to determine the level of knowledge about malaria and community actions in malaria prevention in Kupang City and Kupang District. This descriptive survey was conducted with variables were knowledge about malaria and practice in malaria prevention. The samples in this study were people in Kupang City and Kupang District, with inclusion criteria: 17 years old or older, able to read and write, domiciled in Kupang City or Kupang District and can fill out the google form link that was distributed. The sample size is 100 people in each selected district or a total of 200 people with accidental sampling technique. The results of the study on the level of public knowledge about malaria in Kupang City and Kupang District were different, namely for the Kupang City it was 79 people in the good category (79%) and for Kupang District it was in the sufficient category, namely 40 people (40%). Community actions in malaria prevention in Kupang City and Kupang District are included in the poor category, namely for Kupang City 56 people (56%) and for Kupang Regency 72 people (72%). It is hoped that the community will further increase actions in malaria prevention. For puskesmas to provide counseling to the community more often.

Keywords: *Knowledge; Practice; Prevention; malaria*

Introduction

Malaria is still a public health problem in the world, even being ranked first in the tropics. Malaria can have an impact on socio-economic problems, such as economic loss, poverty and underdevelopment.[1] Malaria puts sufferers into an unfortunate cycle of disease, suffering and poverty. Reducing malaria will provide great support for global equality. There needs to be support for the whole community by protecting household incomes from the cost of seeking care and loss of income due to not being able to work because of the malaria disease.[2] Malaria is caused by Plasmodium which is transmitted through the bite of an infected female Anopheles mosquito. Parasites in the human body multiply in the liver which can then infect erythrocyte cells,[3] so that in severe malaria it can also have an impact on the occurrenceof anemia with a hematocrit <20%.[4]

Malaria in Indonesia is still endemic every year where until now there are still high endemic districts/cities with the top 3 highest cases being Papua, West Papua and NTT.[5] The number of malaria cases in NTT Province in 2017 was 30,232 cases with an Annual Parasite Incidence (API) of 0.57‰, in 2018 there were 18,053 cases (API 0.34‰) and in 2019 there were 12,909 cases (API 0.23‰). Although malaria cases in NTT from 2017-2019 tend to decrease, nationally, NTT Province is still among the 3 highest malaria cases in Indonesia.[5] Kupang Regency in 2017-2019 was ranked in the top 3 highest malaria cases in NTT Province, while the districts with the lowest malaria cases in the last 3 years were Manggarai,

East Manggarai, and Kupang City, even in 2020 Kupang City was declared malaria-free.

The incidence of malaria in Kupang Regency is caused by people who still use houses made of bebak and planks besides that the roofs of houses are made of reeds or palm leaves and the location of people's houses which are close to Anopheles breeding places, namely rice fields and lagoons. Unfavorable environmental conditions can cause the growth of disease vectors that bring harm to humans.[6] In addition, the knowledge, attitudes and actions of the communityin preventing malaria transmission also determine the malaria morbidity rate. For this reason, malaria control in addition to the need for environmental management that is closely related tomalaria vector control, it is also necessary to increase community knowledge and actions in malaria prevention.[7] which is usually local specific. To give importance knowledge and actionof malaria prevention so this study aims is to determine the knowledge and actions of the community in malaria prevention in malaria-free and malaria-endemic areas.

Methods

This descriptive survey research was conducted in Kupang District and Kupang City. Thepopulation is all people living in Kupang City and Kupang Disitrict, with a sample of 100 people in Kupang City and 100 people in Kupang Regency, with inclusion criteria: 17 years old, able to read and write, domiciled in Kupang City and Kupang Regency and can fill out the questionnaire in the google form link that is distributed. The sampling technique used is accidental sampling. The research variables are knowledge and community actions in malaria prevention. Data was collected by interview using a questionnaire in Google Form which was distributed via WhatsApp, Facebook, Twitter, e-mail, and Instagram with the target community in Kupang City and Kupang District. The data obtained were analyzed descriptively, namely to see the distribution of frequencies and percentages of the level of knowledge and community actions.

Result and Discussion

Based on age, most of the respondents are 17-26 years old, and those aged 46 years are atleast in Kupang City and Kupang District. Based on the level of education, the majority of respondents' education in Kupang City and Kupang Regency is high school, while the least is junior high school education, as shown in Table 1.

Table 1. Characteristics of Respondents by Education and Gender in Kupang City and Kupang Disitrict in Year 2021

Characteristics ofRespondents	City Kupang		Kupang District		Total	
	f	%	f	%	F	%
Age (year)						
17 – 26	**85**	**85**	**63**	**63**	**148**	**148**
27 - 36	**10**	**10**	**17**	**17**	**27**	**27**
≥ 46	**5**	**5**	**10**	**10**	**15**	**15**
Education						
No School/ Elementary School	1	1	10	10	11	6
Junior High School	0	0	10	10	10	5
Senior Hihg School	70	70	55	55	125	63
Diploma	9	9	13	13	22	11
Bachelor	20	20	12	12	32	16
Total	**100**	**100**	**100**	**100**	200	100

Based on table 2, it is known that the level of community knowledge about malaria is 50%in the good category, where in Kupang Cit is 79% and in Kupang District is only 21%. On the other hand, the category of sufficient knowledge in Kupang District is higher, namely 39% in Kupang District and only 7% in Kupang City.

Table 2. Knowledge About Malaria in Kupang City and Kupang District in Year 2021

Level Knowledge	City Kupang		Kupang District		Total	
	f	%	f	%	f	%
Good	79	79	21	21	100	50
Enough	14	14	40	40	54	27
Low	7	7	39	39	46	23
Total	**100**	**100**	**100**	**100**	**200**	**100**

Based on the results obtained, it is known that the level of knowledge of 100 respondents in Kupang City is greater than respondents who answered correctly about checking malaria, namely 99 people (99%). The level of public knowledge of 100 respondents in Kupang Regency was greater than respondents who answered correctly about checking malaria, namely 91 people (91%). The level of knowledge of respondents can be seen in table3:

Table 3. Level of Community Knowledge About Malaria in Kupang Cityand Kupang Regency in Year 2021

Variable	Kupang City		Kupang District		Jumlah	
	Right	%	Right	%	**Total**	**%**
Malaria transmission through the bite of Anopheles	68	68	69	69	**137**	**69**
Malaria mosquito bites at night	81	81	39	39	**120**	**60**
Malaria mosquitoes breed in stagnant water	85	85	33	33	**118**	**59**
Malaria mosquitoes like to rest on dirty clothes hanging	49	49	69	69	**118**	**59**
Clinical Symptoms of Malaria: highfever, chills, headache, nausea and vomiting	89	89	30	30	**119**	**60**
Using mosquito nets at night can prevent malaria transmission	95	95	33	33	**128**	**64**
Malaria treatment by taking malaria medicine completely and until it runs out	67	67	35	35	**102**	**51**

Table 3 shows that in general, community knowledge about Malaria is better in Kupang City than in Kupang District. Good knowledge about Malaria in Kupang City includes the habit of Malaria mosquitoes biting at night, breeding grounds for Malaria mosquitoes, clinical symptoms of malaria, and the benefits of using mosquito nets.

Table 4. Community Practice in Malaria Prevention in Kupang City and Kupang District in Year 2021

Level ofPractice	Kupang City		Kupang District		Total	
	f	%	f	%	f	%
Good	29	29	16	16	45	23
Enough	15	15	12	12	27	14
Low	56	56	72	72	128	64
Total	100	100	100	100	200	100

Table 4 shows that community practices in malaria prevention in Kupang City and Kupang District are mostly in the poor category, namely 56 people (56%) in Kupang City and 72 people (72%) in Kupang District.

Table 5. Community Practices in Malaria Prevention in Kupang CityAnd Kupang District in Year 2021

Variable	Kupang City		Kupang District		Total	
	Yes	%	Yes	%	Yes	**%**
Using mosquito nets at night	80	80	73	73	**153**	**77**
Put on gauze wire in the house ventilation	42	42	27	27	**69**	**35**
Using mosquito repellent at home	49	49	49	49	**98**	**49**
Use mosquito repellent (repelen)	45	45	47	47	**92**	**46**
Clean the grass and bushes around the house	67	67	46	46	**113**	**57**
Cover with soil unused stagnant water with soil	67	67	43	43	**110**	**55**
Do not hang used clothes	77	77	54	54	**131**	**66**
Clean the pile of garbageregularly	78	78	57	57	**135**	**68**
Wear long pants and long sleeves wher going out atnight	31	31	56	56	**87**	**44**

Based on table 5, it can be seen that community practices in malaria prevention in KupangCity which are included in the good category include using mosquito nets at night, not hangingused clothes, and cleaning piles of garbage regularly, while most of community practices in Kupang District are not good.

Discussion

This study showed that most of the respondents in Kupang City had good knowledge, namely 79 people (79%) of the total respondents. This is different from that in Kupang Dsitrict where most of the respondents have a sufficient level of knowledge, namely 40 people (40%) and many who lack knowledge, namely 39 people (39%). Knowledge is a very important domain for the formation of one's behavior.[8] The high incidence of malaria is influenced by the low level of knowledge, attitudes and actions of families towards malaria prevention and eradication. Seeing this condition, it is necessary to increase public knowledge through health education and promotion about malaria and its prevention.

In general, community knowledge about Malaria is better in Kupang City than in Kupang District. Good knowledge about Malaria in Kupang City, among others, 81% know that the habit of Malaria mosquitoes bite at night, 85% know that the breeding place for

Malaria mosquitoes is in puddles of water, 89% know the clinical symptoms of malaria are high fever,chills, headache, start and vomit. In addition, people in Kupang City already know that using mosquito nets at night can prevent malaria transmission. This is different from knowledge in Kupang Regency, where many respondents's answers include lack of knowledge, including: modes of transmission of Malaria, breeding sites for Malaria mosquitoes, clinical symptoms of Malaria, benefits of using mosquito nets when sleeping at night, and good treatment methods. Rendahnya pengetahuan tentang Malaria ini juga didukung oleh penelitian sebelumnya antara lain: 12,1% tidak tahu gejala Malaria dan 1,4% tidak memberikan jawaban; hanya 32% yang tahun bahwa Malaria bisa disembuhkan.[6] Likewise, research in Buea Health District Cammeron where 8.1% of respondents answered incorrectly and 4.1% said they did not know.[9] Likewise, there is still a lot of knowledge about how to transmit and when to bite mosquitoes.[6,9] Research in Halaba Town also found that only 791.1% correctly answered Anopheles breeding sites, and only 63% knew Malaria was transmitted through mosquito bites[10] and even in the village of Northwest Tanzania, 49.1% of the respondents answered correctly how malaria was transmitted.[11]

The results of this study as well as previous studies indicate that there are still many people who do not have the correct knowledge about Malaria, so that this lack of knowledge has an impact on the inaccuracy and lack of community participation in preventing malaria transmission. So here it is necessary to take action on sustainable health promotion in order to increase public knowledge about malaria. Based on the results of research conducted on respondents in Kupang City and Kupang District, it was found that community practices were still lacking with the percentage for Kupang City as much as 56 (56%) and for Kupang Regency 72 (72%). It can be said that the respondent has not taken the proper preventive action as it should.

Respondents' actions in preventing Malaria in this study were still found to be not good. Previous research on pregnant women in Cross River State found that their actions were better, namely cleaning shrubs only 86%, installing wire netting 85%, covering puddles (92% and sleeping under insecticide-treated mosquito nets (92%).[12] However, it turns out that malaria prevention measures are also still available even though it is in health students, namely only 52.4% who clean shrubs, only 34.8% who cover puddles, and only 46.5% who use mosquito nets while sleeping.[13]

The respondent's action on malaria prevention is an effort that can be done to prevent or control malaria. The action variable was the important influential factor in malaria. Action occurs starting with the experiences of individuals and factors outside the individual (environment), both physical and non-physical, which are then known, perceived, believed to give rise to motivation, intention to act and finally happens embodiment of that intention in action.[14]

This study and previous studies show that there are still many people who lack good knowledge and actions in malaria prevention, so this is also a risk factor in Malaria transmission and increases the risk of Malaria incidence. Likewise in the City of Kupang and Kupang Regency, where the high number of cases in the Regency is lacking because it is supported by low knowledge and prevention of Malaria, and conversely, knowledge and prevention of Malaria in Kupang City are already good so this has an impact on cases which are also low and have even been declared Malaria free by 2020. The level of knowledge and action in preventing Malaria must be maintained or improved for the better because if community action and also health program actions in preventing Malaria are negligent, it is possible for Malaria cases to increase again and endemic even though previously it was already declared malaria free.

Conclusion and Suggestion

Community knowledge in Kupang City about the causes of malaria, symptoms, modes of transmission, prevention and treatment were most in the Good category, and for Kupang District were most just in the sufficient category. The attitude of the people in the City of Kupang in the prevention and treatment of Malaria in Kupang City and in Kupang District were most in the poor category.

It is hoped that the community will further increase malaria prevention measures by taking more frequent actions related to malaria prevention, need read and understand more about malaria, especially how malaria is transmitted and how to prevent the transmission. In order toprovide more health promotion about malaria for people in Kupang City and Kupang District and provide explanations about what can be done to prevent malaria.

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