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Factors Associated With Malaria Incidence In Bawootalua Village Lahusa District South Nias Regency In 2019

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ABSTRACT

The API rate in Bawootalua Village, Lahusa District for the last 3 years (2016 - 2018) according to the Lahusa Health Center (Puskesmas Lahusa, 2018) there are still malaria cases. Until now, in Bawootalua Village, Lahusa District, with this condition no research has been conducted on the factors that influence the incidence of Malaria in the area. The study design used was cross sectional with the research population being all residents in Selakambang Village. Samples were taken with a total sampling technique of 138 people. The instrument used in the study was a questionnaire sheet with a relationship analysis using the Chi Square test .

1. Introduction

Malaria is a serious and fatal disease that is transmitted by mosquitoes and if not treated immediately, sufferers will experience severe complications and may die. According to WHO (2014), the malaria mortality rate in the world in 2013 still reached 47% and 78% of them were children under 5 years of age. Indonesia is still a malaria transmission country or at risk of malaria because in 2010 there were 229,819 positive cases of malaria and it increased to 256,592 cases in 2011 (Kemenkes, 2012) .

The data shows that in Bawootalua Village, Malaria sufferers in 2017 with 15 positive cases were Plasmodium, sp and in 2018 with 17 positive cases there were Plasmodium, sp . According to the South Nias District Health Office (2018), infectious diseases found in Bawootalua Village include Malaria, pulmonary TB, and ARI. Malaria is known as an infectious disease. During the last three years, there were 3 villages with malaria cases in Lahusa District, South Nias Regency, one of which was Bawootalua village (Puskesmas Lahusa, 2018) .

The respondents in the study on Malaria conducted by Nurbayani (2013) (43.4%) worked as laborers, while in the study of Bagaray et al. (2015) 73.7% of the respondents work as farmers. According to several studies going out at night is a factor associated with the incidence of Malaria such as research conducted by Asa et al. (2015), Bagaray et al. (2015) and Budiyanto (2011). Yawan (2006) also supports the statement that people who go out at night have a greater risk of developing Malaria compared to people who do not go out at night.

In addition, the use of mosquito nets is also a factor associated with the incidence of Malaria according to research conducted by Nurbayani (2013), Erdinal et al. (2006) and Bagaray et al. (2015). This is also in line with the research conducted by Syahrain et al. (2015) and Yawan (2006).
The API rate in Bawootalua Village, Lahusa District for the last 3 years (2016 - 2018) according to the Lahusa Riskesdas Health Center, 2018) there are still malaria cases. Until now, in Bawootalua Village, Lahusa District , under these conditions, no research has been carried out regarding the factors that influence the incidence of Malaria in the area. This makes researchers want to know the factors related to the incidence of Malaria in Bawootalua Village, Lahusa District in 2019. In this study, the factors associated with the incidence of Malaria in Bawootalua Village, Lahusa District in 2019.

2. Method

2.1. Research Design

The research carried out is a quantitative research using a cross sectional study.

2.2. Population and Sample

The population in this study were all the family heads of Bawootaluo Village, Lahusa District, as many as 138 people . In this study, the entire population was sampled as many as 138 families.

2.3. Method of collecting data

Sources of data used in this study are primary and secondary data sources. Primary data sources were obtained from questionnaire sheets, while secondary data were obtained from Lahusa Health Center Monthly Reports. The methods used in data collection are questionnaire, observation and document review methods.

2.4. Analysis Techniques

Data analysis in this study used univariate analysis techniques to describe each variable, namely the independent variable and the dependent variable. This analysis is in the form of frequency distribution and percentage of each variable as well as bivariate analysis conducted on two variables that are suspected to be related or correlated. This analysis is used to determine the relationship between the independent variable and the dependent variable in order to determine the level of relationship between these variables. In this study used statistical tests with Chi-Square test with the help of SPSS for Windows..

3. Results and Discussion

TABLE 1
DISTRIBUTION OF MALARIA INCIDENCE IN BAWOOTALUA VILLAGE, LAHUSA DISTRICT, SOUTH NIAS REGENCY IN 2019

Malaria	Amount	Percentage (%)
Yes	12	8.7
Not	126	91.3
Amount	138	100

Based on table .1. it can be seen that 8.7% of the 138 respondents suffered from malaria.

TABLE 2
FREQUENCY OF MALARIA INCIDENCE BASED ON POPULATION DEMOGRAPHICS IN COMMUNITIES IN BAWOOTALUA VILLAGE, LAHUSA DISTRICT, SOUTH NIAS REGENCY IN 2019

Category	Malaria			
	Yes		Not	
	N	%	N	%
Age				
Adult (26 – 45 Years Old)	**7**	**58.3**	**72**	**57.1**
Elderly (> 45 Years)	**5**	**41.7**	**29**	**23.0**
Teenagers (12 – 25 years)	**0**	**0.00**	**25**	**19.8**
Amount	**12**	**100**	**126**	**100**
Gender				
Man	4	33.3	53	42.1
Woman	8	66.7	73	57.9
Amount	**12**	**100**	**126**	**100**
Work				
at risk	7	58.3	22	17.5
No Risk	5	41.7	104	82.5
Amount	**12**	**100**	**126**	**100**

Based on the table above, it can be seen that most (58.3 %) of Malaria sufferers are aged between 26-45 years. Malaria is also more common in women (66.7 %) than men. In addition , most (58.3 %) of people affected by Malaria are known to have risky jobs.

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TABLE 3
FREQUENCY OF MALARIA INCIDENCE BASED ON BEHAVIORAL FACTORS IN THE COMMUNITY IN BAWOOTALUA VILLAGE, LAHUSA DISTRICT, SOUTH NIAS REGENCY IN 2019

Category	Malaria			
	Yes		Not	
	N	%	N	%
Out At Night				
Yes	**7**	**58.3**	**82**	**65.1**
Not	**5**	**41.7**	**44**	**34.9**
Amount	**12**	**100**	**126**	**100**
Use of Mosquito Net				
Not	2	16.7	89	70.6
Yes	10	83.3	37	29.4
Amount	**12**	**100**	**126**	**100**
Installation of Anti-Mosquito Gauze				
Not	10	83.3	107	84.9
There is	2	16.7	19	15.1
Amount	**12**	**100**	**126**	**100**
Use of Anti-Mosquito Drugs				
Not	**9**	**75**	**91**	**72.2**
Yes	**3**	**25**	**35**	**27.8**
Amount	**12**	**100**	**126**	**100**

The table above explains that most (58.3%) of respondents who suffer from malaria go out of the house at night and as many as 83.3% of respondents who suffer use mosquito nets when sleeping at night. In the variable of installing anti-mosquito nets, it is known that most (83.3 %) people who suffer from Malaria do not install anti-mosquito nets. The data is similar to the use of mosquito repellent, it is known that most (75%) people who suffer from Malaria do not use mosquito repellent while sleeping at night.

TABLE 4
THE RELATIONSHIP BETWEEN POPULATION DEMOGRAPHIC FACTORS (AGE , GENDER AND OCCUPATION) WITH THE INCIDENCE OF MALARIA IN BAWOOTALUA VILLAGE, LAHUSA DISTRICT, SOUTH NIAS REGENCY IN 2019

Category	Malaria				*p. value*
	Yes		Not		
	N	%	N	%	
Age					
Adult (26 – 45 Years Old)	**7**	**58.3**	**72**	**57.1**	
Elderly (> 45 Years)	**5**	**41.7**	**29**	**23.0**	***0.140***
Teenagers (12 – 25 years)	**0**	**0.00**	**25**	**19.8**	
Amount	**12**	**100**	**126**	**100**	
Gender					
Man	4	33.3	53	42.1	***0.761***
Woman	8	66.7	73	57.9	
Amount	**12**	**100**	**126**	**100**	
Work					
at risk	7	58.3	22	17.5	***0.001***
No Risk	5	41.7	104	82.5	
Amount	**12**	**100**	**126**	**100**	

The table above shows that of the three demographic variables of the population, only one is associated with the incidence of Malaria. Age (p.value = 0.140) and gender (p.value = 0.761) were not associated with the incidence of Malaria. While the variables related to the incidence of Malaria are occupations with p.value = 0.001.

He results of the study, among others, could be due to the risk behavior of Malaria being mostly carried out by respondents with an adult age range. The data shows that as many as 51.7 % of respondents who leave the house at night and 50.5% of respondents who do not use mosquito nets at night are known to be adults. In addition, most people (57%) who do not use mosquito repellent while sleeping at night are also known to be adult respondents.

The results showed that malaria patients were more common in women (66.7 %) than men (33.3%). Nurlette et al. (2012) stated the same thing that 71.4% of Malaria sufferers in their study were women while only 28.6% of Malaria sufferers were men. The number of Malaria cases that occurred in women compared to men in this study contradicted the research of Sagay et al. (2015) that Malaria sufferers in their study were more male than female, namely as much as 51.22%.

TABLE 5
THE RELATIONSHIP BETWEEN BEHAVIORAL FACTORS (GOING OUT AT NIGHT, USING MOSQUITO NETS, INSTALLING ANTI-MOSQUITO NETS, USING MOSQUITO REPELLENT) WITH THE INCIDENCE OF MALARIA IN BAWOOTALUA VILLAGE LAHUSA DISTRICT SOUTH NIAS REGENCY IN 2019

Category	Malaria				p.value
	Yes		Not		
	N	%	N	%	
Out At Night					
Yes	**7**	**58.3**	**82**	**65.1**	
Not	**5**	**41.7**	**44**	**34.9**	***0.641***
Amount	**12**	**100**	**126**	**100**	
Use of Mosquito Net					
Not	2	16.7	89	70.6	
Yes	10	83.3	37	29.4	***0.000***
Amount	**12**	**100**	**126**	**100**	
Installation of Anti-Mosquito Gauze					
Not	10	83.3	107	84.9	***1,000***
There is	2	16.7	19	15.1	
Amount	**12**	**100**	**126**	**100**	
Use of Anti-Mosquito Drugs					
Not	**9**	**75**	**91**	**72.2**	
Yes	**3**	**25**	**35**	**27.8**	***1,000***
Amount	**12**	**100**	**126**	**100**	

Based on the table above, it can be seen that the behavior of going out at night is not related to the incidence of Malaria. The use of mosquito repellent (p.value = 1,000) and the use of mosquito repellent (p.value = 1,000) were also not associated with the incidence of Malaria. Behavioral factors associated with the incidence of Malaria is the use of mosquito nets (p.value = 0.000).

The results of the statistical test show that work is related to the incidence of Malaria in Bawootalua Village, Lahusa District, South Nias Regency in 2019 with p.value = 0.001. This study is in accordance with the research of Saikhu (2011) and Kusdaryanto et al. (2005) that work is a risk factor for malaria. This is supported by the research of Friaraiyatini et al. (2006) that the type of work associated with the incidence of Malaria in South Barito District, Central Kalimantan Province.

Previous research has stated that going out at night is a risk factor for the incidence of Malaria (Santy et al. (2014), Nurlette et al. (2012), Salim et al. (2012)) . Asa et al. (2015) support the statement that the behavior of going out at night is related to the incidence of Malaria in Lobu and Lobu II Villages, Touluan District, Minahasa Regency with p.value = 0.007. Salim et al. (2012) explained that people who go out at night have a 7.8 times greater risk of contracting Malaria than people who do not go out at night.

The results of the study can be caused because as many as 75.3 % of respondents who leave the house at night do not use mosquito repellent at night. Most (79.8 %) respondents who went out at night were also known to have mosquito breeding sites around their homes. This shows that people who go out at night have a greater risk of being bitten by mosquitoes than those who do not go out at night.

4. Conclusion

The relationship between individual demographic characteristics and the incidence of Malaria in Bawootalua Village, Lahusa District, South Nias Regency in 2019 , There is no relationship between going out at night and the incidence of Malaria (p.value = 0.641) , There is a relationship between the use of mosquito nets and the incidence of Malaria (p. value = 0.000) , There is no relationship between the installation of mosquito repellent gauze with the incidence of Malaria (p.value = 1,000) , There is no relationship between the use of mosquito repellent with the incidence of Malaria (p.value = 1,000) .

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