

THE RELATIONSHIP OF THE USE OF INSECTICIDE NETS WITH THE EVENT OF MALARIA IN THE WORK AREA OF UPT PUSKESMAS BATULICIN 1 SIMPANG 4 DISTRICT TANAH BUMBU

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Abstract

Malaria is an infectious disease that is most widely spread throughout the world area between the 60° North latitude and 40° South Latitude. The distribution of species is not the same. *Plasmodium vivax* is the most widely distributed in tropical, subtropical and four-season areas. Based on WHO data, the world malaria report states that prevention and control measures will be expanded to help reduce deaths and illnesses from malaria. Of the 3.3 million lives saved, most came from the 10 countries with the highest malaria burdens and children under five years of age, the group most affected by the disease. According to WHO, child mortality fell below 500,000 in 2012. Based on data from the South Kalimantan Provincial Office, in 2014 there were 16,029 malaria cases with 4,761 positive cases. This study aims to determine the relationship between the use of insecticide-treated mosquito nets and the incidence of malaria in Simpang Empat District, Tanah Bumbu Regency. This research is a cross-sectional quantitative research using analytic observational method. The population of this study were working household heads, with a sample size of 272. This study found a strong relationship between the use of mosquito nets and the incidence of malaria, with non-users 2.1 times more likely to develop malaria than users. Using insecticide-treated bed nets at night can greatly reduce the risk of malaria.

Keyword: Malaria, Kelambu, Mosquito.

Introduction.

Malaria is more than just a disease. Malaria has become a social problem, causing loss, poverty and underdevelopment. In Indonesia, malaria has an impact on the Human Development Index (HDI), increased morbidity and mortality, maternal and child health problems, intelligence, labor force productivity, and decreased tourism (Achmadi, 2005). In 2012, there were 207 million cases of malaria with 627 thousand deaths. WHO (2013)

As a result of the disease, Extraordinary Events (KLB) often occur in Indonesia, which affects both the quality of life and the economy. In 2014, South Kalimantan had 16,029 malaria cases, 4,761 positive cases, and 5 deaths. In 2014 there were 191 positive blood supply patients at the Batulicin 1 Health Center (Dinkes, 2014). In 2014 there were 221 people with malaria in the Working Area of UPT Puskesmas Batulicin 1.

Insecticide mosquito nets are one way to avoid malaria. Many countries use insecticides in mosquito nets that are safe for humans. The insecticide-treated mosquito net program is one option to reduce the malaria vector in it. The efficacy of mosquito nets is also influenced by proper care. Improper mosquito net care can also lead to rapid breakdown or loss of efficacy. To repel mosquitoes, keep the mosquito net clean and free of rips or tears. (Jufar)

This study aims to determine the relationship between insecticide-treated bed nets and the incidence of malaria. Asexual forms of the Plasmodium parasite attack erythrocytes and cause malaria. This malaria infection causes fever, chills, anemia, and splenomegaly. Acute or chronic (Paul N. Harijanto, 2006).

Method

This research is a quantitative study with an analytical observational approach using a cross sectional study design. The population in this study was the head of the family with a sample of 272 people. Collecting data through interviews and questionnaires as well as observation by looking at blood preparations. The data analysis used consisted of univariate and bivariate analysis with chi square test.

Results and Discussion

Results.

Table 1. Gender of respondents

Gender	Frequency	%
Girl	61	22,4
Man	211	77,6
Total	272	100

Table 2. Number of malaria cases

Malaria incident	Frequency	%
Malaria	93	34,2
Non Malaria	179	65,8
Total	272	100

Table 3. Use of mosquito nets

Use of Mosquito Net	Frequency	Percentase
Rarely	238	87,5
Always	34	12,5
Total	272	100

Table 4. Time to use mosquito nets

Time to Use Mosquito Net	Frequency	%
≥ 21.00	80	29,4
<21.00	192	70,6
Total	272	100

Table 5. The relationship between the use of mosquito nets and the incidence of malaria

Malaria incident							
Use of Mosquito Net	Positive		Negative		Total	Value	OR (95%CI)
	N	%	N	%	N (%)		
	Rarely	80	32,4	150	55,1	238 (87,5)	0,018
Always	5	1,8	29	10,7	34 (12,5)		(1,271-
Total	93	34,2	179	65,8	272 (100)		9,111)

Discussion.

Malaria is still an endemic disease in the city of Ternate with malaria cases every year. The main cause of malaria is the Anopheles mosquito. How to control malaria in addition to treatment is very important as well as for prevention. One of the efforts to prevent malaria transmission is personal protection by reducing contact between humans and vectors, namely the intervention of using insecticide-treated mosquito nets. The use of insecticide-treated mosquito nets can reduce the contact between vectors and humans, so that they can become a means of protection for the community against malaria transmission. The use of insecticide-treated mosquito nets in rural areas has been accepted by the community, although not all family members use mosquito nets at bedtime continuously.

Based on the data in table 3, the use of mosquito nets using mosquito nets with a rare frequency is 87.5% and those who always use mosquito nets at night are 12.5% where the number of malaria cases is 34.4%. The results of the analysis showed that the use of mosquito nets was significantly associated with the incidence of malaria ($p\text{-value} = 0.018$, $OR = 3.3403$), which means that people who rarely use insecticide-treated mosquito nets are 3.3 times more likely to get malaria than respondents who always use insecticide-treated mosquito nets in the working area of the Batulicin1 Health Center, Karang Bintang District.

This shows that the habit of using mosquito nets is an effective effort to prevent and avoid contact between Anopheles mosquitoes and people while sleeping at night, because the Anopheles mosquito's habit of looking for blood is at night. If the biting mosquito contains sporozoid in its salivary glands, the chances of contracting it malaria will increase.

The results of this study are in line with research by Rahmadiliyani (2013) which states that the habit of sleeping using mosquito nets at night has a significant relationship with the incidence of malaria in the working area of the Kusan Hulu District Health Center. Seasoned Land. Based on the research conducted, the population is all people who are given insecticide-treated mosquito nets in Teluk Kepayang Village, Kusan Hulu District, Tanah Bumbu Regency with a sample of 275 people. The results of the study stated that there was a relationship between the use of mosquito nets and the incidence of malaria. Respondents who used mosquito nets were 208 people, 190 of them (91.3%) were negative for malaria.

Based on research from (Anastasia Tiyas Walidiyati, et al, 2019) The results showed that respondents behaved positively and respondents behaved negatively about the use of insecticide-treated mosquito nets. The results of the multivariate test with logistic regression with the forward method obtained *p value of* $0.002 < 0.005$ there is a relationship between the behavior of using mosquito nets and the incidence of malaria with a probability level of 81% which means that someone who has negative knowledge, attitudes and behavior will suffer from malaria as much as 81%

According to (Mustafa, et al. 2018) the use of insecticide-treated mosquito nets in the Sengaji area in North Maluku Province is not in line, which based on statistical tests shows that there is no relationship between the use of mosquito nets and the incidence of malaria ($p = 0.935$).

Thus the use of insecticide-treated mosquito nets can prevent and avoid contact with sleeping people at night so as to prevent the occurrence of malaria.

The factors caused by malaria are indeed very influential on the incidence of malaria, research conducted in the working area of the UPT Puskesmas Batulicin1 shows that the prevalence of malaria can be caused by the public not having the knowledge/awareness to use insecticide-treated mosquito nets when sleeping at night.

Conclusion

Using insecticide-treated mosquito netting at night may prevent malaria.

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