

Prevention Behavior Factor Relationship On Malaria Events In Pregnant Women In Sibolga City In 2020

Friska A. Sihombing¹, Syarul Khairiaty², Krisniat³

^{1,2,3}Diploma, Sekolah Tinggi Ilmu Kesehatan Nauli Husada, Jl. Kader Manik No. 2, Sibolga, 22533, Indonesia

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ABSTRACT

Malaria infection in pregnancy is detrimental to the mother and fetus because it can increase maternal and fetal morbidity and mortality. Data on maternal mortality in the city of Sibolga in 2020, shows that maternal mortality based on malaria is in third place. The purpose of the study was to analyze the effect of preventive behavior factors (use of mosquito nets, installation of wire netting, use of mosquito repellent and the habit of being outside at night) on the incidence of malaria in pregnant women in the city of Sibolga. The study was conducted using a case control research design. The sampling technique used was Multi Stage Sampling with a sample size of 90 people. Data analysis used bivariable analysis. The results showed that pregnant women who did not use mosquito nets and or had a habit of being outside the house at night had a greater risk of being infected with malaria in Sibolga City $p = 0.000$ (OR 8.389, 95% CI: 3.152-22.292) and $p : 0.010$ (OR : 3.143, 95% CI : 1.300-7.599). Thus, there is a need for equitable distribution, monitoring of the use and maintenance of insecticide-treated mosquito nets and the need to identify local potentials that can be used as mosquito repellent media and can also utilize mosquito repellent plants, such as zodia, basil, geranium, suren, lavender, lemongrass and neem.

E-mail:

aprianishb@yahoo.com

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1. Introduction

Malaria transmission has occurred in 106 countries. A total of 97 countries of which are malaria endemic areas. As many as 3.3 billion people in the world live in areas at risk of contracting malaria. the estimated number of malaria cases in the world was 198 million cases in 2013, with an incidence rate of 30% and a mortality rate of 40% since 2000. In the Association of Southeast Asian Nations (ASEAN), including Indonesia, the number of malaria cases was 28 million with 584 deaths. thousand people, especially children under five (78%) every year. Worldwide, it is estimated that there are 42.6 million babies born to mothers who are at risk of contracting falciparum malaria and/or vivax malaria. Other data states that approx 125 million pregnant women worldwide are exposed to the risk of malaria each year which results in 200,000 infant deaths related to malaria infection in pregnancy. For the Asia-Pacific region, there are 54.4 million pregnant women at risk of malaria with deaths ranging from 75,000-200,000 infant deaths each year (WHO, 2014; Poespoprodjo, 2011; Steketee et al., 2001).

Sibolga city is still classified as an area endemic, when viewed based on the Annual Parasite Incidence (API) in the 2011-2014 period, the API is above 5 per 1000. In malaria endemic areas, pregnant women are more easily infected with malaria parasites than non-pregnant women. The ease of infection occurs due to decreased immunity during pregnancy, resulting in an increase in the prevalence of severe malaria parasite density (Chahaya, 2003).

The proportion of malaria cases in pregnant women during the 2011-2015 period in the city of Sibolga showed that the proportion of malaria cases in pregnant women fluctuated with the highest proportion in 2015 being 4.5% (73 cases) in 2015 and the lowest being 2.73% (100 cases). cases) in 2014. Malaria infection in pregnancy is very detrimental to the mother and fetus, because this infection can increase the incidence of maternal and fetal morbidity and mortality. Complications of

malaria in pregnant women such as anemia, hypoglycemia, cerebral malaria, pulmonary edema, placental infection, acute kidney failure, puerperal sepsis and postpartum hemorrhage, can even result in death. The mortality rate of malaria in pregnant women with complications of hypoglycemia is 45-75%, while cerebral malaria has a mortality of 20-50%. Data on maternal mortality in Sibolga City in 2014 obtained from the Sibolga City Health Office in 2014, showed that maternal mortality based on causes of which was malaria which was in 3rd place at 8.7% (2 deaths).

Malaria control efforts through case finding, treatment, distribution of mosquito nets and other preventive and promotive efforts have been carried out by the order of the city of Sibolga. However, malaria cases still occur. Therefore, in-depth research is needed to be able to find behavioral risk factors related to the incidence of malaria in pregnant women in Sibolga City. The purpose of this study was to describe the characteristics of pregnant women (age, occupation, education level and level of economic income). Analyzing the relationship of preventive behavior factors (use of mosquito nets, installation of wire netting, use of mosquito repellent and the habit of being outside the house at night) to the incidence of malaria in the city.

2. Method

2.1. Research Design

The research was conducted using a case control research design.

2.2. Population and Sample

The case population was pregnant women who suffered from malaria and the control population was pregnant women who did not suffer from malaria based on the 2015 health center MCH register. The sampling technique used Multi Stage Sampling with a sample size of 45 cases and 45 control people.

2.3. Analysis Techniques

Data analysis used is univariable and bivariable using chi-squares

3. Results and Discussion

The study was conducted in the city of Sibolga in August-September 2019. Based on the data collection carried out, a description of the respondents was obtained based on the characteristics in Table 1, which shows that overall respondents ranged from 16 -41 years. In the case group, the age ranged from 18-41 years. The level of education is mostly low education, namely elementary school with more types of work as fishermen.

TABLE 1
THE AVERAGE MONTHLY INCOME LEVEL OF THE RESPONDENT'S FAMILY
RANGES BETWEEN RP. 20,000, - TO 2,000,000

Karakter	Frekuensi	%
Umur	10	11,1
15-20	63	70
21-34	17	18,9
Tingkat Pendidikan		
Tidak Sekolah	10	11,1
SD	36	40
SMP	16	17,8
SMA	20	22,2
Diploma 3	4	4,4
Sarjana (S1)	4	4,4
Jenis Pekerjaan		
Tidak Bekerja	11	12,2
Petani	56	62,2
Wiraswasta		
Honorer	14	15,6
PNS	4	4,6
	5	5,6
Tingkat Pendapatan		
<Rp 500.000	60	66,7
Rp 500.000-1.250.000	16	17,8
>Rp 1.250.000	14	15,6

Relationship between the use of mosquito nets and the incidence of malaria in pregnant women shows that there are more respondents who do not use mosquito nets in the case group than in the control group. The results of the bivariable analysis showed that the variable using mosquito nets had a statistically significant relationship with the incidence of malaria in pregnant women in Sibolga because the p value = 0.000, with OR: 8.389. This means that pregnant women who do not use mosquito nets have an 8,389 risk of contracting malaria compared to pregnant women who use mosquito nets.

TABLE 1
PREGNANT MOTHER

variabel	kasus		kontrol		P- value	OR
	n	%	n	%		
use of mosquito nets						
No	29	64,4	8	17,8	0,000	8,389 (3,152- 22,292)
Ya	16	35,6	37	16,35		
Use of mosquito repellent						
No	43	95,6	40	88,9	2,688	(0,49 3- 14,644)
Ya	2	4,4	5	11,1		
Habits outside the home						
Ya	24	53,3	12	26,7	0,010	3,143 (1,300 - 7,599)
No	21	46,7	33	77,3		
Cash Wire Installation						
No	44	97,8	41	91,1	4,239	(0,461- 40,010)
Ya	1	2,2	4	8,9		

Relationship between the use of mosquito nets on the incidence of malaria in pregnant women Table 2 shows that there were more respondents who did not use mosquito nets in the case group than in the control group. The results of bivariable analysis showed that the variable use of mosquito nets had a statistically significant relationship with the incidence of malaria in pregnant women in Sibolga City because the p value = 0.000, with OR: 8.389. This means that pregnant women who do not use mosquito nets have an 8,389 risk of contracting malaria compared to pregnant women who use mosquito nets.

The Relationship between the Use of Anti-Mosquito Drugs and the Incidence of Malaria in Pregnant Women Table 2 shows that there is no significant difference between the proportion of respondents who do not use mosquito repellent in the case and control groups. The results of the bivariable analysis showed that the variable use of mosquito repellent had no statistically significant relationship with the incidence of malaria in pregnant women in Sibolga City (p = 0.238).

The relationship between the habit of being outside the house at night to the house at night in the case group was more than in the control group. This means that pregnant women who suffer from malaria in Sibolga City are more likely to have a habit of being outside the house at night. The results of the bivariable analysis showed that the habit variable

4. Conclusion

Being out of the house at night has a significant relationship to the incidence of malaria in pregnant women in Sibolga City because the value of p = 0.010 with OR: 3.143. This means that pregnant women who have a habit of being out of the house at night have a 3.143 times greater risk of being infected with malaria than pregnant women who do not have a habit of being outside the house at night.

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