Relapse_malaria

by Haripin Sinaga

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Knowledge, Attitude and Practice of Relapse Malaria Patients. a Cross Sectional Study from Mandailing Natal District, Indonesia

Nelson Tanjung[1] , Mido Ester J Sitorus[2] , Risnawati Tanjung[1] , Haripin Togap Sinaga[3]

[1]Department of Environmental Health, Polytechnic of Health; [2]Department of Environmental Health, Sari Mutiara University; [3]Department of Nutrition, Polytechnic of Health, Medan, Indonesia

ABSTRACT

Background: Malaria is still the most serious public health problem and the major cause of death. Currently, the number of relapse of malaria is at an alarming and unprecendented rate. It made the prevalence of malaria escalating. Many factors have come together in making this situation such as dense population, mosquitos paracites, resistance to antimalarial drugs, climatic changes and knowledge, attitudes and practices (KAP) of patients. This study aimed to determine the relationship of knowledge, attitudes and practices against the relapse of malaria.

Method: The present study was a cross sectional design taken place in Mandailing Natal District, Indonesia. The study involved 153 malaria adult patients selected purposively, consisted of 123 malaria patients and 30 relapse of malaria. Thirty KAP questions compiled from several KAP studies were delivered to patients. To analyze the relationship between knowledge, attitudes and practices with relapse of malaria, a Chi-square test and logistic regression was performed.

Results: Most of relapse patients had low knowledge (76.4%), attitudes (61.4%) and bad practices (77.3%). There was a significant relationship between KAP with the incidence of relapse of malaria. Education, income, farmer and ventilation were strongest predictors of being relapse of malaria.

Conclusion: Level of knowledge, attitudes and practices affected relapse of malaria. The current control malaria program need to be intensified with malarial education and prevention campaigns. Taken proper and regular antimalarial medicines being important message.

Keywords: knowledge, attitudes, practices, relapse, malaria

Corresponding Author:

Haripin Togap Sinaga Department of Nutrition,
Polytechnic of Health, Medan, Indonesia
Email: haripinsinaga@yahoo.com

INTRODUCTION

The global malaria eradication program had been started in 1950s and in 19702 the diseases increasing slowly in Asia regions and South America. It is predicted more than 100 million deaths from malaria annually. In sub-Saharan Africa, 90% of deaths were related to the presence of the vector Anopheles Gambiae, which is the most infectious mosquito[1] . The program was very successful in certain countries such as India, Sri Lanka and Soviet Union. Even in United States and Europe, malaria was eliminated during the first half on the twentieth century2. However, malaria is still the most serious public health problem and the major cause of death 3 . According to World Health Organization, in 2015 there was about 214 million new malaria cases and 438 thousands deaths from malaria4 . (WHO, 2016). In Indonesia, of a total 216 million malaria cases, 655 thousands were died 5.(Kemenkes RI, 2013). Even though the progress of malaria control was successful, malaria eradication seemed imminent. Many factors have come together in making this situation. The factors are dense population, presence mosquitos paracites, resistance to antimalarial drugs, climatic changes including the knowledge, attitudes and practices (KAP) of patients 6-8 Number of

relapse of malaria is at an alarming and unprecedented rate. It made the prevalence of malaria has been escalating in Africa. Malaria has been to cause 404 Indian Journal of Public Health Research & Development, March 2019, Vol.10, No. 3 2.3% of global disease and 9.0% of disease in Africa[6]. There are many factors contributing to relapse of malaria such as rapid spread of malaria parasites resistance to chloroquine, migration of non-immune population, climate changing, changes of in the behavior of vectors from indoor to outdoor biters[6,9]. However, KAP studies on malaria had proved that malaria re-emergence related to knowledge, attitudes and practices about malaria[3,7-10]. In study location, the Annual Parasite Incidence (API) and relapse of malaria incidence are at alarming rate. Therefore, the current study aimed to determine the knowledge, attitudes and practices of relapse of malaria.

METHODS AND MATERIAL

Study site: The present study was a cross sectional design taken place in Mandailing Natal District, North Sumatera Province. Malaria is endemic in this district. Among 23 sub-districts, 22 of them were found malaria case. The Annual Parasite Incidence (API) in Natal district was 6.8%. A 2016 census indicated approximately 463,000 inhibited in Natal district 11. Most residents engage in cultivating rice, rubber and coconut. Participants: There were 153 malaria adult patients selected purposively, consisted of 123 persons were not relapse patients and 30 persons relapse. The inclusion criteria were; living in district >10 years, aged 20-50 years old, not pregnant, routinely visited Primary Health Center. PHC conducted malaria control program such as insecticide treated bed net (ITN), insecticide spray and pills distribution. This background makes Natal district was selected for undertaking the study. Data collection: The study carried out between June - September 2017. Thirty KAP questions compiled from several KAP studies were delivered to patients. The questions addressed to respondents following major categories: socio-economic charateristics, knowledge, attitudes and treatment seeking behavior practices, personal prevention practices. The items on knowledge such as malaria transmission, type of mosquitos and paracites and medicines. Questions on attitudes and practices asking the patients on their agreement upon malaria control program, prevention activities and rule of taking antimalarial drug. For example; Do you agree indoor residual spray?, do you agree to take pills regularly, using bed nets, cover water tanks. The score of answers were changed into two categorics; high vs low knowlede; positive vs negative attitude and good vs bad practices. In determining the categories,. the boderline was the mean score of answers. For convenience and easy to understand, the questions were delivered in native Bataknese language vice Bahasa Indonesia. Four local residents hired and trained to conduct this task. They were at least a high school education, could speak both Bahasa and Bataknese language. Data analysis: Data were entered and analyzed using soft-ware program Statistics Package for the Social Sciences (SPSS) version 6.0. To analyze the relationship between knowledge, attitudes and practices with malaria presented in distribution frequency and compared to other KAP malaria studies.

RESULTS

Table 1: Knowledge, attitudes and practices of respondents KAP

Variables	n	%
Knowledge		
High	50	32.7
Low	103	67.3
Attitudes		
Positive	59	38.6
Negative	94	61.4
Practices		
Good	51	33.3
Bad	102	66.7

As seen in Table 1. Of 153 of malaria patients participated in this study, around three fourth of them had low knowledge and bad practices, 67.3% and 66.7% respectively. However, 61.4% had positives attitudes in preventing malaria.

Table 2: The p-values of socio-economic characteristics related to malaria prevalence

Socio-economic characteristics	p-value
Age	0.08
Sex	0.02
Education	0.04
Types of occupation	0.04
Income	0.04
House ventilation	0.04

Table 2 implied that of six socio-economic characteristics, only age that had not significantly related Indian Journal of Public Health Research & Development, March 2019, Vol.10, No. 3 405 to malaria. Type of sex, education, occupation, income and house ventilation were significantly affected to malaria incidence (p-values = 0.02; 0.04; 0.04; 0.04; 0.04 respectively). Males worked as famers had low income and lived in house with not enough ventilation prone to suffer malaria.

Table 3: The relationship of knowledge, attitudes and practices with malaria status KAP

Variables	Status of malaria p-value			
	Relapse n = 123		Not Relapse n = 30	
	n	%	n	%
Knowledge High	29	23.6	21	70.0 0.02
Low	94	76.4	9	30.0
Attitudes Positive	54	43.9	5	16.7 0.01
Negative	69	56.1	25	83.3
Practices Good	28	22.7	23	76.6 0.02
Not Good	95	77.3	7	23.4

Table 3 shows that the proportion of relapse patients who had low knowledge, negative attitudes and not good practices were double compared to not relapse patients. There were 76.4%, 43.9% and 77.3% of relapse patients had low knowledge, negative attitudes and bad practices while in not relapse patients only 30.0%, 16.7% and 23.4% respectively.

DISCUSSION

The current study found that knowledge, attitudes and practices and socio-economic were the strong predictors of being relapse of malaria. With respect to knowledge, our investigation confirm that one in the three participants has misconceptions of malaria transmission and symptoms, even though they have ever experienced such as head-ache, vomiting and diarrhea. They should know that malaria symptoms can re-occur up to 1 year therefore they have to seek medical consultation. This findings confirm with study conducted by Weber et al. and Tyagi's found that repeated infection of malaria were understandable belong to socio-economic strata; poor living condition, poverty and poor health seeking behavior and low knowledge, attitudes and practices[7-8] Several studies showed that the causes of relapse pertaining to knowledge, attitudes and practices [3,10,12-13] In term of attitudes, we found the residents of Mandailing Natal preferred self-treatment as the first action and seeking professional medical treatment after they failed to resolve the illness. Delay treatment may improve of relapse. Local health seeking behavior might affected the attitudes of taking action in preventing malaria as it happened in several developing countries such as in Philippines[14], Kenya[15], Solomon Islands[16]. Less malaria incidents in higher education may be due to better treatment of protecting from mosquitos bites and taking regularly anti malaria drugs. In this study, the higher education respondents followed the rule of taking drug; 15 mg for 5 days and followed with high dose primaquine, 30 mg twice a day for 7 days [17-18]. This dose is effective and practical. Numerous studies have shown that poor treatment and low compliance to the regimen had caused against relapse because the predominant species of malaria paracites has a relapse mechanism that results in the re-appearance of parasitemia [19]. Most countries with low relapse malaria incidence areas used a dose of 15 mg of primaquine a day for 5 days[17]. Therefore our findings support the concept of those regimens. This relatively low relapse malaria incidence of higher knowledge respondents also due to the greater access to media information and contact to health staffs. While others had low response to get information and communicate with health staffs due high social burden. This situation also seen Nigerian and Colombia[12,20].

CONCLUSION

The incidence of relapse of malaria happened because of low knowledge, attitudes and practices on malarial prevention. The current control malaria program need to be intensified with malarial education and prevention campaigns. Taken proper and regular antimalarial medicines being important message. Conflict of Interest: None conflict of interest regarding to this research Source of Funding: The research was funded by authors Ethical Clearance: Ethical approval obtained from the local institutional ethics board of Polytechnic of Health. 406 Indian Journal of Public Health Research & Development, March 2019, Vol.10, No. 3

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