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Socioeconomic Factors and Access to Health Services for Malaria Control in Mamuju District, West Sulawesi Indonesia

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ABSTRACT

The malaria cases were increasing in Mamuju district. Several factors influence of the malaria prevention specifically socioeconomic and access to health services. The objectives of the study were to find out socioeconomic determinants, access to health services and behaviour towards prevention of malaria in Mamuju district, West Sulawesi. The design study was cross sectional. The population of this study was the residence in Mamuju District, number sample 739 respondents taken by random sampling and data analysis by using Chi-square and logistic regression in α 5%. Results of the study reveal that 51% of respondents have done malaria control in the Mamuju District. Socioeconomic factors like education ($p = 0.000$), income ($p = 0.004$), knowledge ($p = 0.000$) and attitude ($p = 0.000$) were significant to prevent malaria. Variables that are not related were employed ($p = 0.060$) and access to health services ($p = 0.223$). Logistic regression analysis showed that behavior; knowledge and attitude most impact for prevention of malaria in the district Mamuju. This research recommended the dissemination of health information about malaria prevention to the public through various media both of print and written media also counseling.

Key words: Malaria, socioeconomic, behavior, access, health, services

INTRODUCTION

Malaria is an infectious disease of global concern. This disease remains a public health problem because it often causes outbreaks, widespread impact on quality of life and the economy and can lead to death (MOH, 2007). The burden of malaria is extremely high because it can lead to anemia, abortion, fetal death, prematurity, low birth weight and financial loss is quite high in endemic areas. This gives rise to losses on economic countries due to missing or reduced household income, tourism, business and industry (DGCDR and DADH, 2004).

About 85% of deaths due to malaria occur in children under age five in Africa and every 30 sec one child dies because malaria (WHO, 2011). In Indonesia, malaria morbidity rates reported in the year 2009 amounted to 1.143 million cases (DGDCEH and MOH, 2010).

Incidence malaria in Mamujuis is still a public health problem. According to data from district health offices Mamuju from 2005 to 2010, patients with clinical malaria and malaria positive patients showed an increase from year to year. Based on these data it is necessary to the

comprehensive prevention of malaria in the district Mamuju. Several factors influence the response to malaria includes socioeconomic and behavioural health care access.

Based on the above problems, the researcher intends to find out the socioeconomic determinants, access to health services and behaviours towards prevention of malaria in the district Mamuju.

MATERIALS AND METHODS

The research was conducted in the Mamuju districts, West Sulawesi province. The population in this study is all respondents/communities included in the study sample surveys, data base malaria prevention integrated project, Hasanuddin University. The sample in this study was those of the population who have the whole variable to be studied as much as 739 respondents.

Type study is observational with a cross sectional design. To examine the relationship between the socioeconomic (education, income and employment), access to health services and behavior (knowledge and attitude) with the prevention of malaria.

Statistical analysis: Data of this study was data base surveys integrated malaria prevention. Data was analyzed with SPSS and Chi-square test and logistic regression in α 5% to test significantly hypothesis.

RESULTS

Characteristics of respondent have distributed by age group, gender, education and jobs. Figure 1 shows that, above age of 64 has prevented malaria as much as 73.3%. Base on sex it seems that men have a more response (56.9%) than women (48.1%) in malaria program.

Furthermore, the level of education indicated there were 38.9% have a primary school. Then, as much as 39.1% have done malaria prevention adequately. Elementary level, junior high and high school do enough counter measures, respectively 44.8, 51.0 and 64.1%. Levels of education who have sufficient measures malaria prevention were at the highest level of graduate (university) as much as 80.0% (Fig. 2).

Base on distance to health services showed 230 people (31.1%) had close to health services. Then, knowledge of respondents showed there were 401 people (54.3%) had enough malaria prevention (Fig. 3).

Socioeconomic variables consist of three sub variable namely education, employment and income. It can be seen from Fig. 2 that the results of statistical tests obtained p-value = 0.000. This

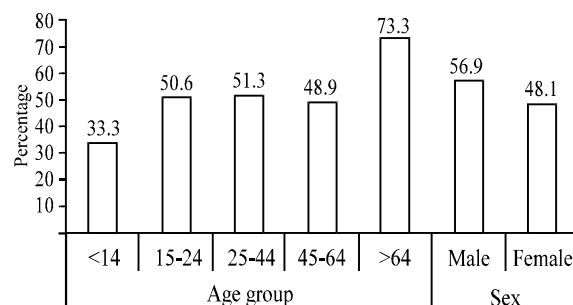


Fig. 1: Adequate prevention of malaria based on age group and sex in Mamuju District, West Sulawesi Indonesia, 2010

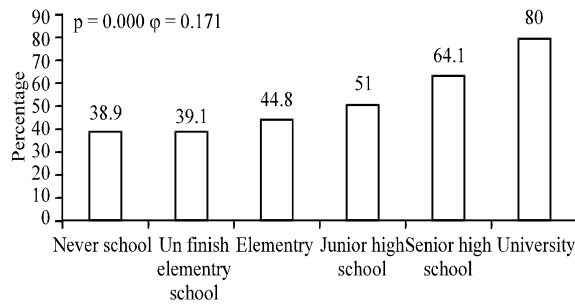


Fig. 2: Adequate prevention of malaria base on education in Mamuju District, West Sulawesi Indonesia, 2010

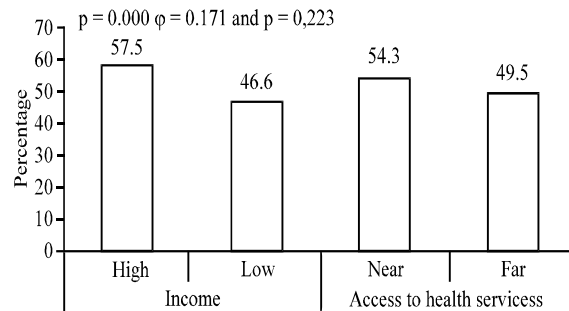


Fig. 3: Adequate prevention of malaria based on income and access to health services in Mamuju District, West Sulawesi Indonesia, 2010

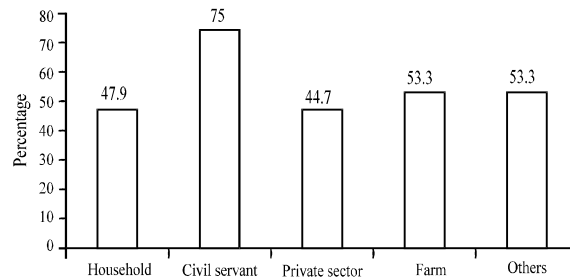


Fig. 4: Adequate prevention of malaria base on occupation in Mamuju District, West Sulawesi Indonesia, 2010

means there is a relationship between educations respondents with malaria prevention. Thus, education contributed 17.1% to the prevention of malaria. However, access to health services (Fig. 3) and occupation (Fig. 4) there was no correlation between malaria prevention in Mamuju with ($p = 0.222$) and ($p = 0.060$).

Furthermore, income respondent, knowledge and attitude obtained significant with malaria prevention with significant ($p = 0.004$; $p = 0.00$ and $p = 0.00$). Thus, contributing each variable to malaria prevention is 10.7, 43.7 and 57.6% for attitude (Fig. 5). Logistic regression (Table 1) indicated that knowledge and attitude are the most factor affecting the malaria response in Mamuju ($p = 0.00$).

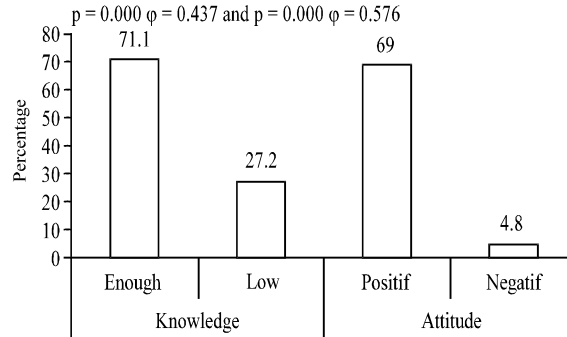


Fig. 5: Adequate prevention of malaria based on knowledge and attitude in Mamuju District, West Sulawesi Indonesia, 2010

Table 1: Regression logistic to determine independent variable malaria prevention in Mamuju District West Sulawesi, Indonesia 2010

Variable	B	Wald	p- value	Exp. B	95% CI	
					Lower	Upper
Knowledge	1.511	62.315	0	4.533	2.977	6.598
Attitude	3.504	103.857	0	33.235	16.401	65.198
Constant	-0.428	180.359	0	0.002		

DISCUSSION

Socioeconomic: Socioeconomic in this study consisted of education, occupation and income. Well education tends to have enough knowledge, because education level was a fitting description of ability to comprehend and understand a problem. A respondent who has a clear understanding of malaria prevention, he or she could have are liable person's reaction to taking action maintain their environment and malaria control.

This study has found that more than half the respondents have low levels of education (52.9% under elementary school). Even, 4.9% of respondents told him never school. Low level education of respondent caused little attention to malaria control.

Occupation is activities to improve of income house holders. People who do is always trying to stay healthy in order to perform activities as workers. To observe malaria prevention base on occupation it can be seen that there 75.0% of respondents was a civil servant. They have done enough malaria prevention to improve Malaria control in Mamuju district.

Income in terms is the whole family income includes the income of the household head (husband or wife) plus the income of other family members in one month, including payment or wages, agriculture, commerce and other measured in dollars.

Income is a factor associated with malaria control programs, meaning that people who have enough income allows active participation in malaria control programs. Based on this study, researchers found that 59.5% respondent as low income. Respondent in low income who have implemented malaria control only 46.6% respondents (Fig. 3). Poverty is one of the problems that result from the lower income levels (Siahaan, 2008).

Access to health services: Access to health services means that health services should be achieved by the public. The health center is free barrier from by geographical, social, economic,

organizational and language. Access can be measured by geographic distance, travel time, travel expenses, other modes of transport and other physical barriers that can hinder a person to receive health services (Pohan, 2007).

The results of statistical tests by using the Chi-square showed the value of $p\text{-value} = 0.223$ ($p > 0.005$) which means there is no significant relationship to the distance to health services with malaria control efforts undertaken by the community Mamuju district.

Access to health services In this study, it found that 68.9% respondent stays far from the health center. From this group, it can be seen only 49.5% of respondents have implemented malaria mitigation. In addition, there is 45.7% of respondents that the distance to nearby health services but accomplish less mitigation.

Behaviour: Human behavior is the result of all sorts of human experience and interaction with the environment is manifest in the form of knowledge, attitudes and actions. In other words, the behavior is a response/interaction of an individual to stimuli originating from outside or from within himself. This response can be either passive (no action: think, think, behave) and active (action).

Behavioral variables in this study include two sub variations the knowledge and attitudes of respondents to the prevention of malaria in the district Mamuju. Knowledge is crucial person in the act, such as malaria prevention is any action taken to prevent individuals from malaria Another advance of sleep using mosquito nets, use of mosquito repellent as well as cleaning the house and neighborhood from where breeding site *Anopheles* mosquito.

Increased knowledge in the provision of information is expected to increase efforts to control malaria especially in endemic areas such as in Mamuju district. Increased knowledge of the idea until the evaluation stage, so that people that are knowledgeable enough to affect the positive action taken.

According to Notoatmodjo (2007), the attitude was a reaction is a reaction/response to someone who is still closed to a stimulus or object. Manifestation of an attitude cannot be seen directly, but can only be interpreted in advance of the close behaviour.

The attitude of the respondents in this study is categorized into two types, namely positive and negative that has a negative attitude 207 respondents and 95.2% of them who have less control of malaria. While the remaining 4.8% have a negative attitude with sufficient malaria prevention ($p = 0$).

Overall, respondents expressed a positive attitude towards malaria prevention efforts. This suggests that a good attitude about the malaria disease will be greater participation in response to malaria. A positive attitude about malaria by the community will facilitate the community to make efforts in malaria prevention.

CONCLUSION AND RECOMMENDATION

Based on the results of study and discussion above it can be concluded and recommended as follows:

- There is a relationship between recent educations, income, knowledge and attitude on malaria prevention
- There is not a relationship between occupation and access to the health center on malaria prevention

- Some effort can be made through disseminating health information on various media; printed, health promotion and counseling. The content of health promotion provides basic information on the prevention of malaria that can reach all levels of society
- To the researchers who are interested in researching malaria in order to emphasize on local cultural and malaria program

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