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Analysis of Impact of Use of Incident Thickness in Pregnant Woman in Area of Malaria (Gunung Raja Mentawe Village Districts of Tanah Bumbu South Borneo)

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ABSTRACT

Malaria is an infectious disease caused by parasites. Plasmodium that lives and breeds in human red blood cells. The disease is naturally transmitted through the female Anopheles mosquito bites. Transmission of malaria is similar to infectious disease transmission in general that is determined by factors called host (human and Anopheles mosquitoes), agent (parasite plasmodium) and environment (physical, chemical, biological and social). Malaria is a world health problem, especially for tropical countries and subtropics, the World Health Organization (WHO) says 40% or more than 2,400 million people live in malaria endemic areas and estimates of prevalence between 300-500 million clinical cases each year, reported deaths of 1-1.5 million people per year. Malaria infection especially in pregnancy is very detrimental to the mother and fetus it contains, because this infection can increase the incidence of morbidity and mortality of mother and fetus. Complications of malaria in pregnant women such as anemia, hypoglycemia, cerebral malaria, pulmonary edema, placental infection, acute renal failure, puerperal sepsis and post partum bleeding, can even lead to death. The mortality rate of malaria in pregnant women with hypoglycemic complication is 45-75%, whereas cerebral malaria have mortality 20-50%. South Kalimantan is among the top 10 provinces with the highest API. One of the districts in South Kalimantan that includes malaria endemic area is Tanah Bumbu Regency with an API of 7.4%. In Kabupaten Tanah Bumbu there are 2 sub-districts that are still malaria endemic namely Mentewe sub-district (API 12,2%). Respondents from this study were pregnant women who used insecticide-treated bed nets. The results showed that the use of insecticide treated bed nets in pregnant women was influenced by the attitude of pregnant mother (sig.0,033), while knowledge (sig 0,614), body weight (sig.0,163) and maternal anemia status (Sig 0,362) against the use of mosquito nets

Keyword: Malaria, mosquito nets, pregnant women

INTRODUCTION

Malaria is an infectious disease caused by Plasmodium parasites that live and multiply in human red blood cells. The disease is naturally transmitted through the bite of Anopheles female mosquitoes. Malaria is a world health problem especially for tropical and sub-tropical countries, the World Health Organization (WHO) says that 40% or more than 2,400 million people live in malaria endemic areas and estimates of prevalence between 300-500 million clinical cases each year, with the reported mortality rate reaching 1-1.5 million people per year. Malaria is one of the infectious diseases that contribute to infant and under-five mortality, and pregnant women, ie malaria in pregnancy causes 5-12% of total low birth weight infants and contributes 75,000 to 200,000 to infant mortality1

Malaria infection especially in pregnancy is very harmful to the mother and fetus it contains, because this infection can increase the incidence of morbidity and mortality of mother and fetus. The mortality rate of malaria in pregnant women with hypoglycemic complication is 45-75%, whereas cerebral malaria has 20-50% mortality1

Year 2013 The number of cases of malaria in the world as many as 198 million cases with an incidence
rate of 30% and a mortality rate of 40%. Association of Southeast Asian Nations (ASEAN) including Indonesia stated the number of malaria cases of 28 million with the number of deaths of 584 thousand people, especially children under five (78%) each year with 42.6 million babies born from mothers at risk of malaria falciparum and/or malaria vivax. Pregnant women are exposed to the risk of malaria every year around 125 million worldwide and there are 200,000 infant deaths due to malaria infection in pregnancy. The Asia-Pacific region contains 54.4 million pregnant women at risk of malaria with deaths ranging from 75,000-200,000 infant deaths each year.

Malaria mortality in a region is determined by Annual Parasite Incidence (API) per year. API is the number of malaria positive cases per 1,000 population in one year. National API trends in 2011 to 2015 continue to decline (from the API of 1.75% in 2011 to 0.85% by 2015). This demonstrates the success of malaria control programs undertaken by central, local, community and related partners. Looking at provinces by 2015, it appears that eastern Indonesia still has the highest API figures. The 2015 API figure in South Kalimantan is 0.68% (as much as 0.68% of the malaria positive population per 1,000 population in South Kalimantan during 2015). Malaria positive rates in Indonesia in vulnerable groups such as pregnant women and children aged 1-9 years are quite high (1.9%) compared to other age groups.

South Kalimantan is among the top 10 provinces with the highest API. One district in South Kalimantan that includes malaria endemic area is Tanah Bumbu Regency with an API of 7.4%. In Tanah Bumbu District there are two sub-districts which are still malaria endemic, Mentewe sub-district (API 12.2%) and Teluk Kepayang (API equal to 7.7%) including positive pregnant mother and infant. The rise of gold mining in the region became one of the factors causing the development of malaria vector. This is because the mining activity caused the holes of excavation of mine which became the breeding place of malaria vector.

One of the malaria preventive measures that can be carried out in accordance with the causes of malaria cases is by using insecticide treated bed nets or bed nets in bed, as recommended by the World Health Organization (WHO) since November 2004. Based on research data from R & D Center P2B2 Tanah Bumbu in 2016 the use of insecticide-treated bed nets in Mentewe Sub-District of Tanah Bumbu Regency resulted in a positive impact on malaria cases, namely the decrease in the number of malaria cases with API 10.2%. This is supported by the results of research conducted by Aisyah (2014) which states that there is a relationship between the use of insecticide treated bed nets with the incidence of malaria. According to Soro (2014) results, 12 households (35.3%) of non-adherent respondents used insecticide treated mosquito net, while in the group of KK obedient in using insecticide treated mosquito net, as many as 30 families (100%) experienced the incidence of malaria.

**MATERIALS AND METHOD**

This study design was observational analytic with cross sectional design. The populations in this study were all pregnant women. Samples were determined using accidental system in research period.

**FINDINGS**

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Category</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Knowledge</td>
<td>not so good</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>26</td>
<td>86.7</td>
</tr>
<tr>
<td>2.</td>
<td>Attitude</td>
<td>Negative</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>20</td>
<td>66.7</td>
</tr>
<tr>
<td>3.</td>
<td>Weight</td>
<td>Less</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Normal</td>
<td>8</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excess</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>4.</td>
<td>Status of Anemia</td>
<td>Light</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Normal</td>
<td>22</td>
<td>73.3</td>
</tr>
</tbody>
</table>

Based on table 1 can be seen knowledge of respondents at most is good that is as much as 26 people (86.7%), respondent attitude at most is positive as much 20 people (66.7%). Status of anemia of the respondents at most is normal as many as 22 people (73.3%). The weight of respondents at most in the category less as much as 16 people (53.3%).

**Table 2: Results of Logistic Regression Estimation on Variables Affecting Respondents in Behavior of Insecticide Netting Used**

<table>
<thead>
<tr>
<th>Step 1*</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>.758</td>
<td>.544</td>
<td>1.946</td>
<td>1</td>
<td>.163</td>
<td>2.134</td>
</tr>
<tr>
<td>Status of Anemia</td>
<td>.516</td>
<td>1.049</td>
<td>.242</td>
<td>1</td>
<td>.623</td>
<td>1.675</td>
</tr>
<tr>
<td>Knowledge</td>
<td>-.809</td>
<td>1.603</td>
<td>.254</td>
<td>1</td>
<td>.614</td>
<td>.445</td>
</tr>
<tr>
<td>Attitude</td>
<td>2.863</td>
<td>1.339</td>
<td>4.570</td>
<td>1</td>
<td>.033</td>
<td>17.519</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.152</td>
<td>2.124</td>
<td>2.202</td>
<td>1</td>
<td>.138</td>
<td>.043</td>
</tr>
</tbody>
</table>
From table 2 it can be seen that only attitude variable (sig.0.033) has real effect on behavior of insecticide treated mosquito net, while knowledge (sig 0.614), BB (sig 0.163) and maternal anemia status (sig 0.3623) did not significantly influence the use of mosquito nets.

DISCUSSION

Respondents in this study mostly did not experience anemia (73.3%). Respondents were dominated by non-primary school graduation (66.7%). Despite low educational backgrounds, the respondents’ knowledge of malaria, including knowledge about malaria understanding, causes, mode of transmission, malarial signs, malaria prevention, and malaria treatment were categorized as good. Most respondents’ attitudes toward malaria are categorized positive (66.7%).

Based on the bivariate analysis there is only one variable that is the attitude variable that has a real effect on the behavior of the use of insecticide treated bed nets. In terms of use of insecticide treated bed nets, most respondents did not use the mosquito net (56.7%), whereas the use of mosquito net was one of the efforts to prevent malaria transmission. The use of insecticide-treated bed nets can reduce the contact between vectors and humans, so it can be a protective tool for the community against malaria transmission6.

Human behavior is the result of all kinds of experience as well as human interaction with the environment manifested in the form of knowledge, attitudes and actions. In other words, behavior is the response or reaction of an individual to the stimulus that comes from outside or from within himself. Behavior of the community can influence the success of using insecticide-treated bed nets, because insecticide-treated bed nets are only used at night while not sleeping, many people interact with the causes of mosquito bites Anopheles sp so that even when sleeping at night already using mosquito net insecticide but still there is a possibility to be exposed to malaria due to the community’s6.

The results showed that pregnant women who have a positive attitude towards the use of insecticide treated bed nets. The attitude process is still in the stage of receiving, responding and appreciating, but not yet in the responsible and behavioral stages so that the current attitude condition has not implicated the behavior. Many other factors that cause the formation of such behavior, for example because of lack of family support, especially husband, or habit factors and so forth. The number or type of mosquito repellent exposure can be used and chosen so that the practicality becomes a consideration not to use insecticide treated mosquito net.

The results of the same study were conducted by Rianto (2009) which showed that there was a relationship of mother attitude with the use of insecticide treated bed nets (p = 0,000). Mothers who have a positive attitude means supporting the use of mosquito nets. The findings are in accordance with the opinion Notoatmodjo, (2007), attitude is a closed reaction of a person to the stimulus or object. Attitudes of various levels, namely receiving, responding, appreciating and responsible. As Green (2005) explains that behavioral changes can occur from predisposing factors in which one of these predisposing factors is a person’s attitude.

To anticipate this and to achieve the main objectives of health education in shaping health behavior, the steps and efforts that can be taken by health institutions other than distribution of insecticide treated bed nets are ANC services regularly, continuous consultation and includes continuous health promotion and promotion program by providing knowledge about the importance of using mosquito nets for pregnant women in particular and carrying out prevention efforts of mosquitoes as a whole and integrated7.

CONCLUSION

The use of insecticide treated bed nets in pregnant women was influenced by the attitude of pregnant mother (sig.0.033), while knowledge (sig 0.614), body weight (sig.0.163) and maternal anemia status (Sig 0.362) against the use of mosquito nets.

Ethical Clearance: this study approved and received ethical clearance from the Committee of Public Health Research Ethics of Medical Faculty, Lambung Mangkurat University, Indonesia. In this study we followed the guidelines from the Committee of Public Health Committee of Public Health Research Ethics of Medical Faculty, Lambung Mangkurat University, Indonesia for ethical clearance and informed consent. The informed consent included the research title, purpose, participants’s right, confidentiality and signature.
Source Funding: This study done by self funding from the authors.

Conflict of Interest: The authors declare that they have no conflict interest.

REFERENCES


