
Knowledge and Practices of Caregivers Regarding Malaria Prevention and Control Strategies at Engela District Hospital, Ohangwena Region

Haifete A. N^{1*}., ShevanyengaL. T².

Welwitchia Health Training Centre, School of Nursing

*Corresponding author

Abstract

Adequate caregivers' knowledge and practices about malaria is crucial in order to improve prevention by reducing exposure to the disease. Malaria is a major cause of morbidity and mortality among people. However, information concerning the accuracy of caregivers' knowledge and practices is insufficient. The purpose of this study was to assess the knowledge and practices of caregivers regarding malaria prevention and control strategies at Engel District Hospital, Ohangwena Region. The objectives were to describe the knowledge of caregivers regarding malaria control and prevention and to determine the practices of caregivers regarding malaria control and prevention at the above mentioned hospital. The study used a quantitative, descriptive, cross-sectional study at Engela District Hospital, Ohangwena Region. The population comprised of caregivers of children under 5 years visiting the primary health care clinic at Engela District Hospital. Simple random sampling was used to select 30 caregivers. Data related to the study was collected using interview-administered questionnaires. Microsoft Excel, 2016 was used to analyse data, and results were presented in tables and figure. Knowledge results show that malaria is transmitted through bite of any mosquito (50%) and using insecticide sprays and bed nets as the protective method against malaria (64%). Regarding the symptoms of malaria by caregivers, majority of them mentioned having fever with shivering 19(63%), caregivers mentioned dark places inside the house during the day and clean areas (60%) as resting places for mosquitoes. On practices of caregivers regarding malaria control and prevention, majority revealed use of bed nets, traditional herbs and mosquito repellents (90%). Similarly, (90%) were going to the hospital if they suspect that the child has malaria. This study posited that there was average knowledge and good practices of caregivers regarding malaria prevention and control strategies. The study recommended increasing the knowledge about malaria control and benefits of using available effective preventive and control measures by the individual caregivers and the community could contribute much to the overall reduction of the malaria burden.

Keywords: Malaria, knowledge, practices, caregivers, prevention, control.

INTRODUCTION

Malaria is a mosquito-borne infectious disease affecting humans and other animals caused by parasitic protozoans (a group of single-celled micro-organism) belonging to the plasmodium type (WHO, 2019; Cara ballo, 2014). The disease spread to human beings through a bite of infected

female anopheles mosquitoes. Malaria causes symptoms that typically include fever, feeling tired, vomiting, and headaches (Cara ballo, 2014). In severe cases, it can cause yellow skin, seizures, comma or death (Cara ballo, 2014). However, the disease is preventable and curable.

Malaria disease is a global concern. According to the latest *global malaria report*, released in 2018, there were 217 million cases of malaria in 2016, an increase to 219 million cases reported in 2017 (WHO, 2019). Meanwhile, the estimated number of malaria deaths stood at 435 000 in 2017, a similar number to the previous year. The WHO African Region carries a disproportionately high share of the global malaria burden. In 2017, the region was home to 92% of malaria cases and 93% of malaria deaths (WHO, 2019). Children under 5 years of age are the most vulnerable group affected by malaria; in 2017, they accounted for 61% (266 000) of all malaria deaths worldwide. WHO (2019), further alluded that total funding for malaria control and elimination reached an estimated US\$ 3.1 billion in 2017. Additionally, contributions from governments of endemic countries amounted to US\$ 900 million, representing 28% of total funding.

In Ghana, malaria statistics for 2010 indicated that an average of 8200 cases were reported daily and a total of 3 million cases for a whole year and out of this figure, over 3000 deaths were recorded (Tettey, 2011). A study done by Adah et al. (2009) in Nigeria reported that only five children with presumptive malaria received a correct dose of anti-malaria.

Chanda et al. (2015) state that, malaria continues to severely undermine the socio-economic growth in Sub-Saharan Africa where it exacts its greatest toll, particularly in children and pregnant woman. In 2009 the elimination eight (E8) initiatives was established, consisting of countries with potential of malaria elimination: Botswana, Namibia, South Africa and Swaziland including their neighbours Angola, Mozambique, Zambia and Zimbabwe (Chanda et al., 2015).

According to Noor, Uusiku, Kamwi, Katokele, & Ntomwa (2013), Namibia was declared independent in March 1990 from South Africa which had ruled the country since 1919, and it currently has a population of approximately 2.2 million people in an area of approximately 0.83 million square kilometres making it one of the sparsely populated countries in the world. They further state that 65% of the population lives in 55% of country's land mass that makes up the nine regions of the north which historically have been the most malaria. Namibia has declared the ambition to eliminate malaria by 2020, which has an endemic in over seven regions and is considered a public health threat (Mo HSS, 2010). The former Minister of Health and Social Services, Dr. Bernard Haufiku on the 14th March 2017 reported that "6500 cases of malaria have been reported in the northern regions of the country, where an outbreak is currently being experienced" (Kapitako, 2017). The hardest hit regions are Ohangwena, Kavango East, Kavango West and Zambezi (Kapitako, 2017). Kavango West and Kavango East both recorded 3881 cases since January 2017 with 13 people reported dead, while Zambezi region has recorded 546 and Engela Hospital in Ohangwena Region recorded 490 cases of which 9 people died of the disease (Kapitako, 2017).

A study conducted in Nigeria by Imtiaz, Nisar, Shafi, & Nawab, 2016 reveals that, overall 56% of the respondents had adequate knowledge regarding malaria but only 16% had good practices for malaria control and prevention, about 80% of the respondents knew that fever is the major symptom and malaria is transmitted through the mosquito bite. Imtiaz et al. (2016) further reported that 47% of study participants knew that health workers were the major source of information regarding malaria control and its treatment, about 82% of the respondents reported the use of self-medication and nearly 50% of the study participants were not using any preventive measure for malaria control and prevention.

Gueye et al. (2014) note that, in Namibia malaria control interventions are key control measures that are known to have reduced endemic malaria transmission to a state of controlled low-endemic malaria (CLM), a level at which “malaria no longer constitutes a major public health burden and improvement the care givers’ health education can reduce significantly under five malaria morbidity and mortality. In Namibia there is limited research on knowledge and practices of caregivers regarding malarial control and prevention. Therefore, the researchers have decided to investigate the knowledge and practices of caregivers regarding malaria prevention and control strategies at Engela District hospital, Ohangwena region.

1.4 Research questions

What are the knowledge and practices of caregivers regarding malaria prevention strategies in Ohangwena Region, Engela District Hospital?

Purpose

The purpose of the study was to assess the knowledge and practices of caregivers regarding malaria prevention and control strategies in Engela District Hospital, Ohangwena Region.

Objectives

The objectives of the study were:

- To describe the knowledge of caregivers regarding malaria control and prevention at Engela District Hospital, Ohangwena Region.
- To determine the practices of caregivers regarding malaria control and prevention at Engela District Hospital, Ohangwena Region.

METHODS

The study used quantitative, descriptive, cross-sectional research design. The population comprised caregivers of children less than 5 years visiting the primary health care clinic at Engela District Hospital since they were vulnerable to malaria infections. The clinic receives about 32 caregivers of children less than 5 years in a day and 210 caregivers per week (Itamalo,2017).The researcher used simple random sampling in selecting respondents.

The sample size was calculated using this sample size calculation as follows:

$$n = \frac{N}{1 + N \times a^2}$$

Where n is the number of selected respondents

N= total population =32

a= Expected error or the confidence limit at 5%

$$n = \frac{32}{1 + 32 \times 0.05^2}$$

$$n = \frac{32}{1.08} = 29.63 \sim 30 \text{ respondents}$$

Therefore, the sample size for this study was 30 respondents. Interviewer administered questionnaires were used to collect data. Data was collected at Engela District Hospital, Ohangwena Region in April 2019 after the researchers made appointment with the matron of the hospital.

Validity and reliability

The researcher ensured validity and reliability of the study by applying two major types of validity: content and face validity. The researchers established face-value validity through scrutinising the questionnaire by Welwitchia Health Training Centre Research Committee to ensure that the terms used in the questionnaire were precisely defined and properly understood. Content-related validity was achieved thoroughbred-testing on caregivers resembled the sample but were not part of the main study. Upon receiving feedback on the questionnaires the data collection instrument was adjusted. Meanwhile, the questionnaire was developed with reference to literature to ensure content validity. To ensure consistency, pre-test was done and the researcher used 2 respondents to answer questions before initial start of data collection. These two participants did not take part in the final study.

The inclusion criteria were all caregivers of the children under five years of age who are over the age of 18 both males and females. Exclusion criteria were caregivers below the age of 18 years and caregivers who decline to give consent. Data were entered and analysed by use of Microsoft excel software.

RESULTS

Thirty questionnaires were administered among the caregivers of children under 5 years visiting the primary health care clinic at Engela District Hospital, all of them fully completed comprising of 100% response. The characteristics of the sample and relative number of responses are indicated below:

Demographic characteristic of respondents

The personal characteristics collected comprised of the gender, age, religion, marital status and educational level.

Table 1: Respondents demographic information

Gender	Male	3	10	30
	Females	27	90	
Age	18 – 30 years	22	73.3	30
	31-40 years	6	20	
	41-50 years	0	0	
	Above 50 years	2	6.7	30
Religion	Christian	29	96.7	
	Islam	1	3.3	
	Others	0	0	
Marital status	Single	7	23.3	30
	Married	20	66.7	
	Widow/Widower	3	10	
	Divorced	0	0	
Education level	None	3	10	30
	<i>Primary</i>	12	40	
	<i>Secondary</i>	13	43.3	
	<i>Tertiary</i>	2	6.7	

Table 1 above shows the demographic information of the respondents. It is evident in this table that an overwhelmingly percentage (90%) of the respondents were females while only 10% were males. The responses on age distribution shows that majority (73.3%) of the respondents were aged between 18-30 years, 31-40 years (20%) while the few (6.7%) were aged above 50 years. The distribution by religion showed that prodigiously majority of the respondents were Christians (96.7%) while the remaining were Islam (3.3%). On the marital status, majority were married (66.7%), followed by single (23.3%), while 10% of the respondents were widows/widowers. The study assessed the education level of the respondents, majority (43%) of the respondents had secondary level of education, followed by primary level (40%), no formal education (10%), whilst the least had tertiary level of education (6.7%).

Knowledge of caregivers regarding malaria control and prevention

Malaria preventive measures

Respondents were asked about the malaria preventive measures, the majority of the respondents reported using insecticide sprays and bed nets as the most common known protective method against malaria 25(64%), followed by closing doors and windows earlier 8(20%), using doom 5(13%), while 1(3%) said that they did not know the preventive measures. This is illustrated in Figure 1 on the following page.

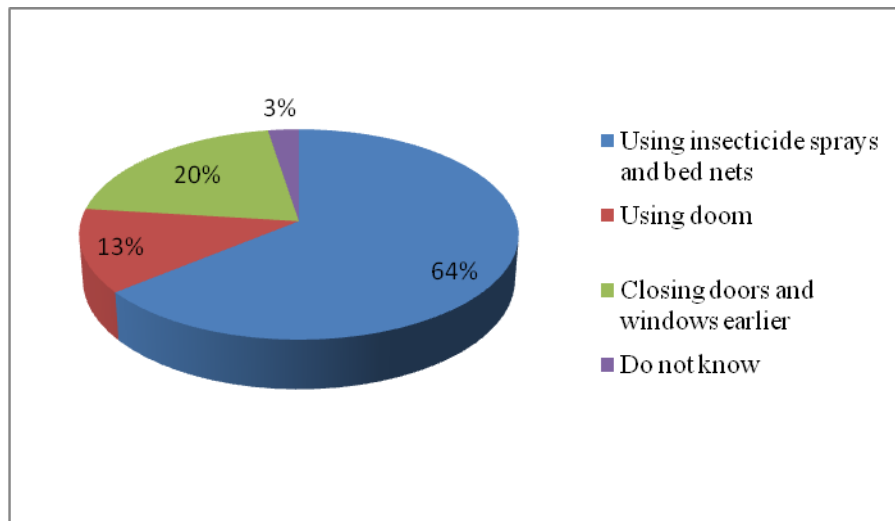


Figure 1: Malaria preventive measures

Symptoms of malaria

Regarding the symptoms of malaria, majority of them mentioned having fever with shivering 19(63%), coughing 5(17%) while those who did not know the symptoms of malaria were 6(20%).

The most common mosquito breeding area

Majority of the caregivers mentioned the most common mosquito breeding area are stagnant water 13 (43.3%), short grass 12(40%), while 5(16.7%) did not know the most common mosquito breeding area.

Resting places for mosquitoes

Eighteen(60%) of the caregivers mentioned dark places inside the house during the day as resting places for mosquitoes, while those who stated clean areas and who did not know the resting places for mosquitoes represented 6(20%) each.

Biting time for mosquitoes

Knowledge about mosquito biting time was relatively high, almost all 23(77%) knew that night time is the biting time of mosquito. A total of 5(17%) identified any time while 2(6%) mentioned every day as the biting time for mosquitoes.

Practices of caregivers regarding malaria control and prevention

Caregivers were asked on what they use to prevent and control mosquito bites. Majority mentioned use of bed nets, traditional herbs and mosquito repellents 27(90%). Similarly, 27(90%) respondents indicated that they go to hospital if they suspect that the child has malaria.

DISCUSSION

Findings from the present study showed that eight-ninth of the caregivers were females aged between 18 and 30 years. The high number of females in this study is attributed to assumptions that there are many females than males in Namibia. This is also in support of the study by Angula (2013) who found that two-third of the respondents were females. On a similar note, a study by Angula (2013) found that majority of the respondents were married which is also in support of the present study whereby two-third of the caregivers were married.

Below four-ninth of the respondents in the present study attained secondary level and two-fifth had primary level of education. The education level of the respondents was considered as it revealed the level of understanding pertaining to the study phenomenon. These findings disagree with the study by Rupashree et al. (2014) who in their study, found that majority of the caregiver had attained primary level of education.

It was established from the study that a gap in knowledge by just above one-thirty two of the respondents stating that they did not know the mode of transmission and exactly half of the study respondents mentioned bites of any mosquito as a mode of malaria transmission. Only just below two-third of the caregivers correctly mentioned about malaria prevention by use of insecticide sprays and bed nets as the most commonly known protective methods against malaria. This is in contrary with similar studies done in Ethiopia by Abate, Deg arege and Erko (2013)that showed eight-ninth increase level of knowledge on preventive use of mosquito net and seven-ninth

knowledge on insecticide spray. Meanwhile, Malawian study by Fatun gas, A Moran, and Fatugase(2013) showed an increase level of knowledge on preventive use of mosquito net. Regarding the symptoms of malaria, just below two-third of respondents mentioned having fever with shivering, above four-ninth caregivers mentioned that the most common mosquito breeding area is in short grass and three-fifth of the caregivers mentioned dark places inside the house during the day. Thus, the knowledge level of respondents about the mode of malaria transmission was on average when compared to the findings in previous studies reported across Africa (Adera, 2013; Ako-Nai & Adesiyan, 2012; Masang wet al., 2012). This may be attributable to low level of education in the rural community.

Study results on practices of caregivers regarding malaria control and prevention, just above eight-ninth respondents revealed that they used bed nets, traditional herbs and mosquito repellents. This is almost similar to the study done in Ethiopia by Abate, Dega rage, and Erko, 2013 that revealed thateight-ninth of respondents used mosquito nets to protect themselves from mosquito bites. Meanwhile, just above eight-ninth respondents in the present study indicated that they go to hospital if they suspect that the child has malaria. This might reflect issues of accessibility and quality in the health facilities. The findings show high level of practices of caregivers regarding malaria control and prevention.

ETHICAL ISSUES

Permission was granted by Welwitchia Health Training Centre (WHTC) research ethical committee. The study was conducted after approval had been granted by the Ministry of Health and Social Services (Mo HSS) and permission by the Matron of Engela District Hospital. Respondents were selected without discrimination by treating the mfairlyregardless of their age, occupation and educational background. Meanwhile, respondents were informed about the importance/aim of the study and what was expected from them. In addition to that, respondents were given the right to make their own choices and their autonomy was protected by signing informed consent. Respondents were informed that their names would not appear on the questionnaires to ensure anonymity by using identification codes and the researcher kept all information confidential.

CONCLUSIONS

Study revealed that majority of the caregivers were females aged between18 and30 years. Below four-ninth of the respondents in the study attained secondary level and two-fifth had primary level of education. It was established from the study that a gap in knowledge by just above one-thirty two of the respondents stating that they did not know the mode of transmission and exactly half of the study respondents mentioned bites of any mosquito as a mode of malaria transmission. Only just below two-third of the caregivers correctly mentioned about malaria prevention by use of insecticide sprays and bed nets as the most commonly known protective methods against malaria. Regarding the symptoms of malaria, just below two-third of respondents mentioned having fever with shivering, above four-ninth caregivers mentioned that the most common mosquito breeding area is in short grass and three-fifth of the caregivers

mentioned dark places inside the house during the day. Study results on practices of caregivers regarding malaria control and prevention, just above eight-ninth respondents revealed that they used bed nets, traditional herbs and mosquito repellents. Similarly, eight-ninth respondents alluded that they go to hospital if they suspect that the child has malaria. Based on the study findings the researchers are recommending that the Mo HSS needs to update its health education strategy according to the identified gaps in caregiver's knowledge, together with the most efficacious forms of prevention and treatment for children. This could be achieved through communication strategies aimed at changing individual and community behaviours, and delivered by appropriately trained community health workers, in a language considered to be most accessible and appropriate to all people in the country.

Acknowledgement

The researchers would like to thank Welwitchia health Training Centre ethical committee and the Ministry of Health and Social Services for granting the permission to conduct the study. In addition, the researchers would like to thank the Engela District Hospital for granting the permission to use the facility and the caregivers who took part in the study at Engela District Hospital.

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