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Original Research Article

A study of mosquito borne diseases awareness, attitude and practices among the rural population in Karnataka, India

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ABSTRACT

Background: All over the world mosquito borne diseases are responsible for a large number of morbidity and mortality. A study showed that there are about 350-500 million cases of malaria annually, with the outcome of 1 million deaths. Although there are around 3500 species of mosquitoes tracked down to tropical and subtropical regions of the world only a hand full of species cause most of the vector borne diseases. The objective of this study was to study people's awareness, attitude and practice about mosquito borne disease in rural areas of Dakshina Kannada district, Karnataka.
Methods: A cross-sectional study was conducted among the residents of Manjanady, Asaigoli, and Kuthar villages during the rainy season in 2016. Through systemic random sampling a total of 200 houses were selected. After obtaining informed consent, the participants were administered a pre-tested, structured questionnaire at the time of first visit for the collection of data.
Results: A large majority of subjects about 86% said that polluted water was a breeding place for mosquitoes, 89.5% thought malaria was spread by mosquitoes, 84.5% said that fever and rigor is the most common symptom, 48.5% said that the health authorities had not conducted active surveillance. Also 41.5% visit general practitioner for consulting on their health issues and 65% of the subjects used mosquito coil as a protective measure.
Conclusions: Intensified efforts should be made to create public awareness and mobilize the community in the preventive measures against mosquito borne diseases.

Keywords: Community perception, Mosquito borne diseases, Personal protective measures

INTRODUCTION

In recent years, vector-borne diseases have emerged as a serious public health problem in countries of South East Asia region, including India.[1] Some of the vector borne diseases known to man includes Malaria, Dengue, Chikungunya, Leishmaniasis etc. Vector borne diseases mainly arise in those areas where clean drinking water and proper sanitation system is a challenge. These have mainly been treated as diseases of the poor as it is endemic in low socio economic strata and in areas where cycle of illness and poverty exists.[2]

From the time immemorial mosquitoes have been accepted as a source of illness affecting man.[3] All over the world mosquito borne diseases are responsible for a large number of global morbidity and mortality, mainly affecting children and young adults on evaluating the endemic regions of malaria. A study showed that there are over 350-500 million cases of malaria annually, causing about 1 million deaths and more than 90% of mortality experienced by children below the age of 10 mainly in the sub-Saharan Africa.[4] Although there are around 3500 species of mosquitoes tracked down to areas of tropical and subtropical regions of the world only a

hand full of them cause most of the vector borne diseases.[5]

With the better understanding of "agent-host-environment" triad with its application on infectious diseases helps us to get a better view on how to control the vector borne diseases.[6] Prevention and control programs were thus aimed at monitoring and controlling the arthropod vector, like mosquito.[7] Some of the control methods, commonly used are personal protection, family protection, community measures.

The present study shows the people's perception about mosquito borne diseases and treatment seeking behaviour, their attitude toward the disease and their practices towards preventing mosquito borne diseases. It also highlights the importance of these aspects in making adequate long term strategies, which are tailored to the local needs in order to promote the local population to take protective measures against mosquito borne infection.

METHODS

A cross-sectional study was conducted among the residents of Manjanady, Asaigoli, and Kuthar villages from July to October 2016. A total 200 houses from these three villages were selected for the study through systemic random sampling. After obtaining an informed consent, the participants were administered a pre-tested, structured questionnaire at the time of first visit for the collection of data. The questionnaire includes the perception of people about mosquitoes, their breeding places, various diseases spread by them, control measures and personal protection measures used in the community and source of treatment. The collected data was analysed using SPSS version 17 software. Results were tabulated; the frequency and respective percentages were calculated.

RESULTS

Table 1 shows that majority of the study subjects were females (55.5%), 32% belonged to the age group of 35-45 years, 51% were Hindus, 87% were literate, 76.5% had pucca houses and 55% belonged to BPL families.

Table 2 shows that 86% of the study subjects thought polluted water was a mosquito breeding place and 76% of them had an idea about growth of mosquito larvae in water. Also 89.5% thought that malaria was spread by mosquitoes followed by 76.5% for dengue. Majority of them (84.5%) said that fever & rigor is the most common symptom of mosquito borne diseases.

Table 3 shows that 48.5% subjects said that health authorities hadn't come for active surveillance, 41.5% visit general practitioner for consulting on their health issues, 65% used mosquito coils for protective measures and 31% used mosquito nets. Also 43% of them favoured covering containers and 32% preferred scrubbing of water containers once a week for intra-domestic antilarval activities.

Table 1: Socio-demographic distribution of study population.

Socio-demographic variables	Variables	Frequency	Percentage (%)
Gender	Male	89	44.5
	Female	111	55.5
Age group (Years)	15-25	28	14
	25-35	52	26
	35-45	64	32
	45-60	56	28
Religion	Hindu	102	51
	Muslim	90	45
	Christian	8	04
Education	Illiterate	26	13
	Primary School	75	37.5
	High School	50	25
	Graduate	49	24.5
Housing	Pucca	153	76.5
	Semipucca	38	19
	Kutcha	9	4.5
Socio-economic status	BPL	110	55
	APL	90	45

Table 2: Knowledge about mosquito borne diseases among study population (n=200).

	Responses	Number	Percentage (%)
Places of mosquito breeding	Drains/polluted water	172	86
	Clean water	29	14.5
	Garbage	120	60
	On hanging object	27	13.5
	Don't know	7	3.5
Larvae in water	Yes	152	76
	No	48	24
Diseases spread by mosquito	Malaria	179	89.5
	Chikungunya	93	46.5
	Dengue	151	76.5
	Filariasis	34	17
	Dont know	13	6.5
Symptoms of mosquito borne diseases	Fever with rigor	169	84.5
	Headache	111	55.5
	Vomiting	72	36
	Body ache	89	42
	Jaundice	6	3
	Dont know	24	12

Note: Multiple responses were given by the subjects.

Table 3: Attitude and practice about mosquito borne diseases among study population (n=200).

	Responses	Number	Percentage (%)
Regularity of active mosquito borne diseases surveillance by health authorities	Regularly every 15 days	15	7.5
	Irregularly	54	27
	Only during rainy season	34	17
	Nobody comes at all	97	48.5
Health seeking behaviour	General Practitioner	83	41.5
	PHC/CHC	60	30.0
	Physician/private hospital	57	28.5
Protective measures*	Mosquito coils	130	65
	Mosquito nets	62	31
	Mosquito repellent	17	8.5
	Smokes and Dhoop	40	20
	Insecticide spray	9	4.5
	Screening of windows/doors	28	14
	Not using any method	7	3.5
Intra-domestic anti larval activities	Scrubbing of container	64	32
	Larvivorous fish	11	5.5
	Edible oil application	11	5.5
	Covering containers	86	43
	Dont know	28	14

*Multiple responses were given by the subjects.

DISCUSSION

This community based observational study assessed the knowledge, attitude and practices about mosquito borne diseases among the rural population in Karnataka, India. In this study majority of the subjects were females (55.5%), 32% were in the age group of 35-45 years, 51% were Hindus, 87% were literate, 76.5% had pucca houses and 55% belonged to BPL families.

In this study regarding the knowledge, 86% of the subjects thought polluted water was a mosquito breeding place and 89.5% thought malaria was spread by mosquitoes. And 84.5% knew that fever & rigor was the most common symptom of malaria. Therefore their knowledge regarding mosquito borne diseases was good. A study done by Patel et al in Rajkot city showed that 54.2% of the study subjects believed that mosquitoes breed in polluted waters, 62% said that malaria was

transmitted by mosquitoes and 42.6% said that fever was the most common symptom.[8]

In this study 48.5% of the subjects said that nobody from the health authority had come for active surveillance for mosquito borne diseases. Also they believed that the control and prevention measures for mosquito borne diseases was the responsibility of the health authorities. This study also found that 41.5% of the people visited private general practitioner for consulting on their health issues and only 30% went to a government health facility. It has become very difficult task for the government in collecting data as well as reducing the burden of mosquito borne diseases. Further this study showed that 65% of the subjects used mosquito coil for protective measure and 43% favoured covering food containers as a intra-domestic antilarval measure.

A study by Patel et al in Rajkot city showed that 67.8% subjects visited private general practitioner for consulting on their health issues and 61.4% used mosquito repellents as a personal protective measure.[8]

In our study the overall knowledge regarding mosquito borne diseases was satisfactory and the knowledge about prevention of mosquito borne diseases was good but still many households did not practice them. Therefore we have encouraged the community to take necessary actions at the household level to prevent mosquito borne diseases. Also the treating doctors should be encouraged to give health education to the patients and their relatives about the appropriate and affordable preventive measures.

CONCLUSION

More intensified efforts should be to create public awareness and mobilize the community in the preventive measures against mosquito borne diseases. The role of mass media, mainly television and internet needs to be further emphasized in health education and IEC campaigns regarding the breeding sites of mosquitoes, mortal outcomes of mosquito bite and control measures. Thereby it will help in improving the knowledge and awareness of the community and it will in turn help in social mobilization for the full involvement of the community in control of mosquito borne diseases.

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