Awareness about Mosquito borne diseases and Practice of preventive methods among residents in an urban community of Koppal, Karnataka

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Abstract

Background: Mosquito borne diseases (MBDs) are diseases of serious public health concern worldwide. Many of them are preventable and their prevention relies on knowledge, attitude and practices of the community towards them.

Objectives: 1) To estimate the level of Knowledge towards Mosquito borne diseases among residents in the study setting

2) To estimate the prevalence of preventive practices adopted by residents against Mosquito borne diseases in the study setting

Methods: A cross sectional community-based study was conducted in the field practice area of UHC, Koppal for a duration of 3 months from January 2018 to March 2018. Simple random sampling technique was used for sample selection and a total of 130 residents were included. Data collection was done using pretested and semi structured questionnaire and Statistical analysis was done using WHO Epi info software version 3.5.4.

Results: Majority i.e. 95 (73.07%) have heard about Mosquito borne diseases (MBDs) and majority i.e. 95 (73.07%) have mentioned Malaria as one of the MBDs. 77 (59.23%) and 73 (56.15%) of participants respectively mentioned Headache and Body ache as symptoms and 112 (86.15%) and 100 (76.92%) respectively told open drains and stagnant water collections could act as breeding places for mosquitoes. Majority i.e. 73 (56.16%) of households had no stagnant water collections in their premises but only 37 (28.47%) dumped their solid waste in Municipal bins. 51 (39.23%) and 47 (36.15%) of respondents admitted to have used mosquito coils and mosquito mats/liquidators respectively, for personal protection.

Conclusion: Awareness about Mosquito borne diseases among residents in the study setting was satisfactory but adoption of preventive practices was marginal, indicating a gap between the knowledge and practice among residents.

Key words: "Awareness", "Vector Borne Diseases", "Solid waste"

Introduction

Vector-borne diseases have emerged as a serious public health problem in recent years accounting for more than 17% of all infectious diseases and causing more than 7,00,000 deaths annually worldwide. Among them, Mosquito borne diseases are the deadliest and their occurrence depends on the complex interaction of various biological, ecological, social and economic factors. These diseases like malaria, dengue, chikungunya, lymphatic filariasis and Japanese encephalitis accounts for considerable morbidity and mortality[1,2,3 4,5,6].

Mosquito borne diseases (MBDs) are concentrated in tropical and subtropical countries with hot and humid climates. The most common MBD is Malaria, with an estimated 219 million cases and 4,00,000 deaths followed by dengue with an estimated 96 million symptomatic cases and an estimated 40,000 deaths every year globally. In addition to health suffering and death, economic losses due to MBDs are huge. MBDs are major health problems in India owing to unplanned urbanization, industrialization, excessive population growth coupled with increased rural to urban migration[4,7,8,9].

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Many of the MBDs are preventable and in the absence of vaccines, mosquito control through environmental management strategies like source reduction for mosquito breeding and personnel preventive measures like mosquito nets, screening, repellents, anti-mosquito coils & vaporizers can effectively reduce the burden of these diseases. National vector borne disease control program (NVBDCP) under the aegis of National Health Mission by the Government of India, has been regularly formulating strategies for prevention and control of mosquito borne diseases. Despite mechanical, chemical, biological or integrated mosquito control measures under NVBDCP, the incidence of mosquito borne diseases remains high, part of which can be attributed to lack of community participation.

Community participation in turn depends upon people's awareness, attitude and practices towards the disease. In addition, earlier studies have indicated that low levels of knowledge and poor practice of preventive measures may increase the morbidity[1,7,9,10,11,12]. With this background, the present study was undertaken in an urban community of Koppal district which is considered as one of the most backward districts in Kalyan Karnataka region {Article 371 J-The Constitution (118th Amendment) Bill}. As there is no data available on the level of knowledge and prevalence of preventive practices towards MBDs among the residents of this region, the present study will give some insights into the same. The objectives of the study were 1) To estimate the level of Knowledge towards Mosquito borne diseases among residents in the study setting, and 2) To estimate the prevalence of preventive practices adopted by residents against Mosquito borne diseases in the study setting.

Materials and Methods

A Community based cross sectional study was conducted in the field practice area of Urban Health center (UHC), Koppal for a duration of 3 months from January 2018 to March 2018. The study population included all the residents of the study setting. Minimum sample size calculated was 89 with an absolute precision of 10% and significance level of 0.05, considering 67% prevalence of awareness among residents about Mosquito borne diseases from a previous study[3] and we included 130 residents as participants in the study.

Simple random sampling technique was used for sample selection. The households in the study setting were randomly visited and data were collected using a pretested and semi structured questionnaire from one respondent each from selected households after taking an informed consent. The exclusion criteria were 1) Households found locked at the time of visit, 2) Residents residing in the study area for a period of less than 6 months, and 3) Temporary visitors/ Guests to the house. Statistical analysis was done using the Epiinfo software version 3.5.4 (Centres for Disease Control and Prevention (CDC), Atlanta, Georgia, United States of America).

Results

Table 1: Distribution of study subjects according to their knowledge on Mosquito borne diseases in the study setting

Sl. No.	Knowledge	Responses	No of people N (%)
1	Heard about Mosquito borne diseases	Yes	95 (73.07)
		No	35 (26.93)
2*	Name few Mosquito borne diseases	Malaria	95 (73.07)
		Dengue	57 (43.84)
		Chickungunya	48 (36.92)
		Filariasis	04 (3.07)
3*	Mention symptoms of Mosquito borne diseases	Fever	56 (43.07)
		Headache	77 (59.23)
		Bodyache	73 (56.15)
		Vomiting	33 (25.38)
		Nausea	01 (0.7)
		Don't know	22 (16.92)
4*	Mention breeding places of Mosquito	Open drains	112 (86.15)
		Stagnant water collections	100 (76.92)
		Garbage	50 (38.46)
		Open tanks	7 (5.38)
		Don't know	29 (22.30)

*Multiple responses allowed

Table 1 shows distribution of study subjects according to their knowledge on Mosquito borne diseases. It is evident from the table that majority i.e. 95 (73.07%) of the study participants have heard about Mosquito borne diseases in the study setting and majority i.e. 95 (73.07%) have mentioned Malaria as one of the mosquito borne diseases followed by Dengue by 57 (43.84%) of respondents. Further, 77 (59.23%)and 73 (56.15%) of participants respectively mentioned Headache and Body ache as symptoms of mosquito borne diseases, followed by fever i.e.56 (43.07). Similarly, 112 (86.15%) and 100 (76.92%) of subjects respectively told open drains and stagnant water collections around households could act as breeding places for mosquitoes in the present study.

Table 2: Distribution of study subjects according to Preventive practices adopted by them to avoid Mosquito borne diseases in the study setting

Sl. No.	Preventive practices	Classification	No of people N (%)
1	Water storage containers at Households	Open	59 (45.38)
		Closed	71 (54.62)
2	Households having stagnant water collections in their premises	Present	57 (43.84)
		Absent	73 (56.16)
3	Solid waste disposal methods at Households	Open dumping	93 (71.53)
		Municipal bins	37 (28.47)
4	Personal protective measures against mosquito bites	Mosquito coils	51 (39.23)
		Mosquito mats/ Liquidators	47 (36.15)
		Mosquito nets	22 (16.92)
		Repellents	3 (2.30)
		None	7 (5.38)

Table 2: Demonstrates distribution of study subjects according to Preventive practices adopted by them to avoid Mosquito borne diseases. Majority i.e. 71 (54.62%) of study participants used closed containers for storing water at their households and majority i.e. 73 (56.16%) of households had no stagnant water collections in their premises as evident from the table. However, only 37 (28.47%) of households in the present study dumped their solid waste in Municipal bins. When enquired about different personal protective measures adopted by them to avoid mosquito bites, while 51 (39.23%) and 47 (36.15%) of respondents admitted to have used mosquito coils and mosquito mats/liquidators respectively, 7 (5.38%) have not used any measures as evident from the table.

Discussion

The present study was conducted in the field practice area of Urban Health center, Koppal to estimate the level of knowledge and preventive practices adopted by residents towards Mosquito borne diseases. Majority i.e. 95 (73.07%) of the study participants have heard about Mosquito borne diseases in the present study similar to the findings of many other studies done both within and outside the country[1,3,7,8,9,13,14,15,16]. Majority had mentioned Malaria as mosquito borne disease followed by Dengue and Chikungunya in confirmation with other studies by Asha Bellad et.al. in Karnataka[3], Viresh kunversingh et.al. in Uttar Pradesh[6], Vishnu Nandan et.al in Telangana[14], Disha Mehta et. al[9] and Vala Mayur et. al.[17] in Gujarat and JS Poyyamozhi in Tamil Nadu[18]. On the contrary, majority have quoted Dengue followed by Malaria in some other studies[1,7,8,15,16]. This difference could be due to differences in the study settings, study duration, study population, sampling techniques and data collection tools.

Headache and Bodyache were reported by majority as symptoms of mosquito borne diseases followed by fever in the present study in line with findings of a study by Rajesh R Kulkarni et. al. in Karnataka[16]. However, a number of studies have found Fever to be the most common symptom of MBDs reported by majority in their studies[3,5,6,7,13,15]. Most of the study participants told open drains and stagnant water collections around households can act as breeding places of mosquitoes in conformation with many other studies[1,2, 3,5,9,14,15,16,17,18].

Majority i.e. 73 (56.16%) of households had no stagnant water collections in their premises in the present study, similar to the findings of studies done by Asha bellad et.al.[3] and Muralidhar Kulkarni et.al[12] in Karnataka, Vikas Kumar et.al.[10] in Delhi and Mir Mobin et.al[8] in Bangladesh. While only 51 (39.23%) and 47 (36.15%) admitted to have used mosquito coils and mosquito mats/liquidators respectively, as personal protective measures in the present study, a number of studies have found majority of participants to be using Mosquito coils/ mats/ liquidators in their studies[1,3,6,8,16,17,19].

Conclusion

The level of knowledge of residents about Mosquito borne diseases in the study setting was satisfactory except few areas. However, the adoption of preventive practices was very limited among them, indicating a huge gap between the knowledge and practice towards Mosquito borne diseases.

Recommendations

There is a need to increase awareness towards Mosquito borne diseases through various communication strategies and the same needs to be transformed into appropriate practices through effective Behavior change communication.

Acknowledgement

The authors acknowledge the active participation of undergraduate students in the data collection for the study.

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Conflict of interest: Nil
Source of funding: Nil

Date received: Jan 23, 2023
Date accepted: Aug 25, 2023