 DOI: 10.18231/2394-2738.2017.0023

A study on knowledge and practices regarding mosquito borne diseases

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Abstract

Introduction: Vector borne diseases are prevalent all over the world, especially in tropical regions. In India mosquito borne diseases such as malaria and dengue are in steep rise. Community participation plays an important role in controlling the transmission of mosquito borne diseases. Community participation depends on public awareness and knowledge towards the diseases and their prevention. Therefore, the present study aimed at determining the knowledge regarding mosquito borne diseases, current mosquito control practices among rural population.

Materials and Method: The present questionnaire based cross sectional study was carried out in Thuvakudi government hospital. Study period was for three months (October 2016 to December 2016). Participants were either patients or family members of patients waiting to be seen by a health care official. Data was collected from total 329 people on the basis of systemic random sampling.

Results: 329 subjects were included in the study. Most of the study participants were aware of malaria (88.4%) followed by dengue (59.5%) and chickungunya (15.0%). Majority of participants in our study consider dirty stagnant water (47.3%) is the place where mosquitoes breed. 6.2% are not aware of mosquito breeding sites. 16.3% participants considered garbage is the place for mosquito breeding. Liquid vaporizers (40.1%) were found to be the most commonly used method followed by coils/mats (36.6%).

Conclusion: Knowledge towards mosquito borne diseases was good with respect to malaria followed by dengue. Knowledge regarding mosquito breeding places was also good, but few participants believe garbage as one of the places of mosquito breeding. All the participants in our study are taking any one of the preventive measures against mosquitoes.

Keywords: Mosquito borne diseases, Malaria, Dengue

Introduction

Vectors are living organisms that can spread infectious diseases between humans or from animals to humans. Most of these vectors are bloodsucking insects that ingest disease-producing micro-organisms during a blood meal from an infected host (human or animal) and later inject them into a new host during their next blood meal. Mosquitoes are the best known disease vector.[(1)]

Vector-borne diseases are illnesses caused by pathogens and parasites in human populations. Every year more than one billion people are infected and more than one million people die from vector-borne diseases including malaria, dengue, schistosomiasis, leishmaniasis, Chagas disease, yellow fever, lymphatic filariasis and onchocerciasis. One sixth of the illness and disability suffered worldwide is due to vector-borne diseases, with more than half the world's population currently estimated to be at risk of these diseases.[(2)] Vector borne diseases such as malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya are prevalent in India.[(3)]

Personal protection measures (PPMs) have become essential tool against vector borne diseases. Repellent creams, mosquito nets, mosquito coils, liquid vaporizers, mosquito killer bats, mats, smokeless coils, intense sticks, and naphthalene balls are the available personal protection measures against vector borne diseases. Most essential factor is that, public should know the available methods in controlling mosquitoes and appropriate knowledge in applying those measures. Awareness of public on breeding sites of mosquitoes also plays an important role in controlling vector borne diseases.

Therefore, the present study aimed at determining the knowledge regarding mosquito borne diseases, current mosquito control practices among rural population.

Materials and Method

The present questionnaire based cross sectional study was carried out in Thuvakudi government hospital. Study period was for three months (October 2016 to December 2016). Participants were either patients or family members of patients waiting to be seen by a health care official. Data was collected from total 329 people on the basis of systemic random sampling. The information obtained using semi structured questionnaire, which included questions related to knowledge about mosquito borne diseases, sources of breeding and personal protective measures.

Inclusion criteria: Individual of both sexes above 20 yrs of age were included.

Exclusion criteria: Those who are not willing to participate and who are not able to produce appropriate information were excluded from the study.

Simple percentage method was used in analyzing data.

Results

329 subjects were included in the study. Majority of participants in our study were in the age group of 51-60(24.1%) followed by 31-40(22.2%) and 41-50(20.0%). Male participants constituted about 164 and accounted for 51.4% and female participants were 155 which accounted for 48.5%. In our study, preponderance of illiterates (32.2%) was observed.

Table 1: Age, sex and education wise distribution of study participants

Age in years	Number (%)
20-30	52(16.3%)
31-40	71(22.2%)
41-50	64(20.0%)
51-60	77(24.1%)
≥61	55(17.2%)
Sex	
Male	164(51.4%)
Female	155(48.5%)
Education	
Illiterate	103(32.2%)
Primary	91(28.5%)
High School	63(19.7%)
PUC	45(14.1%)
Graduate	17(5.3%)

In our study, majority of respondents knew that mosquito bites are responsible for various diseases. Most of the study participants were aware of malaria (88.4%) followed by dengue (59.5%) and chickungunya (15.0%). Very few participants knew that filariasis (2.1%) is due to mosquito bite. About 3.7% of participants in our study are not aware of mosquito borne diseases. (Table 2)

Table 2: Knowledge of participants on mosquito borne diseases

Disease	Number (%)
Malaria	291(88.4%)
Dengue	195(59.5%)
Chikungunya	48(15.0%)
Others	7(2.1%)
Don't know	12(3.7%)

Majority of participants in our study consider dirty stagnant water (47.3%) is the place where mosquitoes breed. 6.2% are not aware of mosquito breeding sites. Table 3

Table 3: Knowledge of participants on breeding places of mosquitoes

Place of breeding	Number (%)
Dirty stagnant water	151(47.3%)
Clean stagnant water	83(26.0%)
Garbage	52(16.3%)
Others	13(4.0%)
Don't know	20(6.2%)

All the participants in our study are taking any one of the preventive measures against mosquitoes. Liquid vaporizers (40.1%) were found to be the most commonly used method followed by coils/mats(36.6%). 2.5% of study participants gave various answers regarding personal protective measures such as using neem leaves, agarbattis (incence sticks), minced garlic and mosquito killer bats.

Table 4: Personal preventive measures against mosquito borne disease taken by the participants

Preventive measures	Number (%)
Liquid vaporizers	128(40.1%)
Coils/mats	117(36.6%)
Screening of windows	35(10.9%)
Nets	31(9.7%)
Others	8(2.5%)

Discussion

In our study participants, illiteracy was found to be 32.2%. As per the study conducted by Vala M et al,[4] majority of participants were illiterates and accounted for 31.4% which is similar to the present study. But the study conducted by Muninarayana C et al,[5] was found to be high and accounted for 68.6%. Another study which was conducted in North-western Tanzania by Kinung'hi et al[6] showed only 23.6% of participants were illiterate.

The mosquito borne disease known to most of the participants in our study was malaria (88.4%) followed by dengue(59.5%). As per Vala M et al,[4] malaria(87.9%) was perceived most common disease transmitted by mosquitoes. According to the study conducted by Nelson et al,[3] dengue(81%) was well known mosquito borne disease among their study participants. Study by Yerpude et al,7 have shown that, 70.09% of study population had knowledge that mosquito bite causes malaria but only 33.72% of the study population knew that dengue, chikungunya was transmitted by mosquito. Study by Surendran et al 8 observed that 71% of study participants were able to name at least one disease transmitted by mosquitoes. Another study by Tyagi et al[9] in their study observed that 100% of study participants were aware that mosquito bites transmit malaria. Another study by Dhaduk et al.[10] showed that 100% of the urban population knew that malaria is transmitted by

mosquito bite. Probably this could be due high literacy rate in the study area.

In our study, majority of participants said, dirty stagnant water (47.3%) is the place where mosquito breeding takes place. As per Nelson et al, 3 56.1% people said that prevention of stagnation is the main method to prevent mosquito borne diseases. According to Vala M et al,[4] majority of the participants associated water collection with breeding place (90.05%). Pandit et al 11 from Gujarat reported that 19.3% of people know garbage as breeding places of mosquito. Kumar et al.[12] had similar results indicating incorrect knowledge about breeding places of mosquito.

In our study, all the participants were using one or other personal protective measures against mosquito bite. Usage of liquid vaporizers (40.1%) was the most commonest method against mosquito bite. Similarly, study conducted by Vala M et al 4 observed liquid vaporizers (52.31%), as the commonest method used against mosquito bite. Other study by Patel AB et al[13] found liquid vaporizers(61%) as commonly used method. But, as per the study conducted by Kulkarni et al,[14] majority of participants using mosquito coils(57.8%) followed by mosquito nets(20.3%) and very few participants were using liquid vaporizers(8.61%) to prevent mosquito bite. As per Vala M et al,[4] mosquito nets were used by 15.51% respondents.

Conclusion

Knowledge towards mosquito borne diseases was good with respect to malaria followed by dengue. Knowledge regarding mosquito breeding places was also good, but few participants believe garbage as one of the places of mosquito breeding. All the participants in our study are taking any one of the preventive measures against mosquitoes. It was found that insufficient knowledge with respect to mosquito breeding palces and also knowledge regarding mosquito borne diseases other than malaria and dengue is lacking. Mass education and communication is the valuable tool in preventing mosquito borne diseases.

References

1. European Centre for Disease Prevention and Control. [Internet]. Climate Change. [cited 2014 Mar 10]. Available from: http://www.ecdc.europa.eu/en/healthtopics/ emerging_and_vector-borne_diseases/vector-born_ diseases/Pages/index.aspx.
2. The world health report 2004 – changing history. Geneva: World Health Organization; 2004.
3. Nelson SB, Ashok VG, Nazer M, Manibalan S, Madhumitha RA. Knowledge regarding mosquito borne diseases & control measures practiced among a rural population in a southern district of Tamil Nadu, South India. Public health Rev: Int J Public health Res 2017;4(1):9-12.doi:10.17511/ijphr.2017.i1.02.
4. Vala M, Patel U, Joshi N, Zalavadiya D, Bhola C, Viramgami A. Knowledge and Practices regarding commonly occurring mosquito borne diseases among people of urban and rural areas of Rajkot District, Gujarat. J Res Med Den Sci 2013;1(2):46-51.
5. Muninarayana C, Hiremath SG, Krishna Iyengar, Anil NS, Ravishankar S. Awareness & Perception Regarding Malaria in Devarayasamudra Primary Health Centre Area**.** Indian Journal for the Practicing Doctor 2008; 5(1).
6. Kinung'hi SM, Mashauri F, Mwanga JR, Nnko SE, Kaatano GM, Malima R, et al. Knowledge, attitude and practices about malaria among communities: Comparing epidemic and non-epidemic prone communities of Muleba district, North-western Tanzania. BMC Public Health 2010.10.
7. Yerpude NP, Jogdand KS, Jogdand M. A study onawareness and practice about preventive methods against mosquito bite among households in an urban slum area of south India. Int J Rec Trends Sci Technol. 2013;8(2);69-71.
8. Surendran SN, Kajatheepan A. Perception and personal protective measures toward mosquito bites by communities in Jaffna District, northern Sri Lanka. J Am Mosq Control Assoc. 2007;23(2):182-6.
9. Tyagi P, Roy A, Malhotra MS. Knowledge, awareness and practices towards malaria in communities of rural, semi-rural and bordering areas of east Delhi (India). J Vect Borne Dis. 2005;42:30–5.
10. Dhaduk KM, Gandha KM, Vadera BN, Mehta JP, Parmar DV, Yadav SB. A community level KAP study on mosquito control in Jamnagar district. Natl J Community Med. 2013;4(2):321-8.
11. Pandit N, Patel Y, Bhavsar B. Awareness and practice about preventive method against mosquito bite in Gujarat. Healthline. 2010;1(1):16-20.
12. Kumar KR, Gururaj G. Community perception regarding mosquito-borne diseases in Karnataka state, India. Dengue Bull. 2005;29:157-16.
13. Patel AB, Rathod H, Shah P, Patel V, Garsondiya J, Sharma R. Perceptions regarding mosquito borne diseases in an urban area of Rajkot city. National Journal of Medical Research 2011;1(2):45-7.
14. Kulkarni RR, Biradar MK. A cross sectional study to assess perception regarding mosquito borne diseases in urban areas of Belagavi city. Int J Community Med Public Health 2017;4:1039-42.