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Assessment of Knowledge and Practice about Mosquito Born Disease among Rural Population of Kancheepuram District, Tamilnadu

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Authors' contributions

This work was carried out in collaboration between all authors. Author VPR designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors GR and MS managed the analyses of the study. Author EV managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Background: Mosquito are one of the well known causing many diseases like Malaria, Dengue, Chikungunya, Lymphatic Filariasis, Japanese Encephalitis. They are more prevalent in rural area due to various social factors and lack of knowledge. The objective of this study was to assess knowledge of people and their practices regarding mosquito borne diseases in rural areas of Kancheepuram district, Tamilnadu.

Materials and Methods: A community based cross sectional study was conducted among the residents of Pooncheri, Kancheepuram district of Tamilnadu, between the period of August 2017 to September 2017 among 124 houses selected. After obtaining informed consent from the participants they were interviewed using a pretested semi structured questionnaire regarding their knowledge and practices on mosquito borne diseases.

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Results: The study reported that in case of any symptoms suspected to be of mosquito born disease majority of the study population 82.2% reported consulting doctors. The most preferred mode of prevention of mosquito bite was usage of spray (33.9%) in the breeding place followed by usage of electric repellents (31.4%).
Conclusion: The study indicated that majority of the study population were unaware bout the prevention practices despite knowing about these diseases. Thus, arises the need for effective propagation in the rural area about prevention strategies of mosquito born disease through mass education and social media.

Keywords: Mosquito born disease; knowledge; practice.

1. BACKGROUND

Vector born disease is the one of the important public health problem faced by developing countries like India. Vectors are living organisms that can transmit infectious diseases between humans or from animals to humans [1]. Most of the vectors are bloodsucking insects that ingest disease-producing micro-organisms during a blood meal from an infected host to infect others during their next blood meal.

Mosquitoes are the most common human vectors. Many diseases are attributed to mosquitoes like Malaria, Dengue, Chikungunya etc leading to millions of deaths every year. Globally every year there are nearly 219 million malaria cases caused by Female Anopheles Mosquito which has resulted in 435000 deaths. Among these 70% are from India and 10 African countries [2].

In India, Lymphatic Filariasis is prevalent in 20 states and union territories comprising of 250 endemic districts and 600 million people at the risk of infection. This number accounts for one-third of global cases worldwide. Expanding urbanization and improper water and sanitation facilities causes increased number of cases in urban, peri-urban and rural areas. To curb these rising numbers various measures have been taken, one being the precaution taken to avoid development of breeding conditions of mosquito in homes, workplaces and other being the minimization of the man-mosquito contact [3]. In pretext of the current scenario and to create awareness WHO, launched the World health day theme of 2014 as “Small bite: Big threat”.

In India, geographic distribution of vectors especially mosquito determines the burden of the problem it poses. They are more common in rural area of India due to poor water sanitation, housing and poverty. Lack in knowledge and inadequate health services are also the main determinants apart from climatic and social factors, which are rarely addressed. With this regard the present study was conducted at a rural community to assess the knowledge and practices about mosquito borne diseases among the rural population.

2. MATERIALS AND METHODS

A cross-sectional community based study was conducted among 124 respondents selected using convenient sampling technique at rural area of Pooncheri in Kancheepuram district. The duration of study was 2 months from August 2017 to September 2017. The study population included person above 18 years of age. At least one person from each house was included in the study. The houses which were locked during our study period after three visits were excluded from the study.

After getting prior informed consent from the participants were interviewed. A pre-tested, semi-structured questionnaire was used for collecting information regarding Mosquito Born Diseases (MBDs). The questionnaire contained three sections. Section A constituted questions on the socio-demographic profile of participants followed by section B and C containing questions about Knowledge and Practice pertaining to Mosquito born Disease respectively. The participants were not influenced by any means while answering and were allowed to express their view on the issue at hand.

2.1 Statistical Analysis

The data collected was compiled and entered in MS excel. It was analysed using Statistical Package for Social Sciences (SPSS) software. The variables were analysed and expressed in forms of frequencies and percentages.

3. RESULTS

Among the 124 participants included in the study, the mean age was 38.34 ±11.75 years. Out of 124 participants majority 59 (47.6%) were in the age group of less than 35 years, followed by 36-56 years 54 (43.5%), with the least 11 (8.9%) participants above 57 years. Among the participants 65 (52.4%) were male and 59 (47.6%) were female. Majority 113 (91.1%) of the study population were 113 (91%) Hindu by religion followed by 6 (4.8%) Christian, 4(3.2%) Muslim and 1 (0.8%) others. With regards to the socioeconomic status most of them belonged to class IV 45 (36.3%) and class V 38 (30.6%) based on B. G. Prasad classification 2017.

Table 2 shows responses to Knowledge about mosquito born diseases among the participants which showed higher scores among 93(75%) of the participants followed by 31(25%) reporting unawareness about mosquito born disease.

The most common response regarding the diseases caused by mosquito bite known among the participants were dengue and malaria in the first place as 38 (30.6%), second as dengue only 28 (22.5%), followed by triple diseases such as Dengue, Malaria And Chikungunya 15(12.1%). Few respondents told Filarial only 4(3.2%). Among the study population on the whole only 2(1.6%) knew about all the four mosquito born diseases such as Dengue, Malaria. Chikungunya and Filariasis and unfortunately 32 (25.8.%) participants reported unawareness of any of the mosquito born disease. For the question on the causative agent of the diseases, 23(18.5%) responded answered female mosquito, 2 (1.7%) answered male mosquito, yet majority of them 99 (75.8%) had no Knowledge.

Regarding the time of biting of mosquitoes most of the respondent 77 (62.2%) answered as night time and 43(34.6%) answered didn't know, only 4(3.2%) respondent answered as day time. Knowledge about common symptoms occurring in mosquito borne diseases, majority 88 (70.96%) responded asfever. Also regarding knowledge about different breeding places of mosquito most of them 83(66.9%) responded as stagnant polluted water and 28 (22.58%) answered as didn't know.

Among the participants 37% (29.8%) reported that mosquito born disease are treatable, 11(8.8%) as not treatable, but majority 97(78.2%) claimed ignorance. On questioning about the preventability of mosquito borne diseases 61(49.1%) responded as unaware and about 107(86.2%) were not aware about the ongoing National Vector Borne Disease Control Programme (NVBDCP).

Table 1. Socio-demographic characteristics of the participants

Variables	Number of respondents (N=124)	Percentage (%)
Age (years)		
<35	59	47.6
36-56	54	43.5
Above 57	11	8.9
Sex		
Male	65	52.4
Female	59	47.6
Religion		
Hindu	113	91.1
Muslim	4	3.2
Christian	6	4.9
Others	1	.8
Socio economic status (BG Prasad classification 2017)		
Upper class	1	.8
Upper middle class	13	10.5
Middle class	27	21.8
Lower middle class	45	36.3
Lower class	38	30.6

Table 2. Knowledge about mosquito born diseases (N= 124)

	Male	Female	Total
Do you know about mosquito born disease?			
Yes	49(39.51%)	44(35.41%)	93(75%)
No	16(12.9%)	15(12.1%)	31(25%)
Name the mosquito born disease you know?			
Dengue	15(12.1%)	13(10.4%)	28(22.5%)
Malaria	2(1.7%)	3(2.4%)	5(4.1%)
Filarial	3(2.4%)	1(0.8%)	4(3.2%)
Dengue and Malaria	20(16.12%)	18(14.5%)	38(30.7%)
Dengue, Malaria and Chikungunya	7(5.6%)	8(6.5%)	15(12.1%)
Dengue, Malaria, Chikungunya and Filaria	2(1.6%)	0(0.0%)	2(1.6%)
Don't Know	16(12.9%)	16(12.9%)	32(25.8.%)
Which mosquito cause disease?			
Male	2(1.7%)	0(0.0%)	2(1.7%)
Female	0(0.0%)	23(18.5%)	23(18.5%)
Don't know	57(45.9%)	42(33.9%)	99(79.8%)
What time do dengue causing mosquitoes to bite?			
Day time	2(1.7%)	2(1.7%)	4(3.2%)
Night time	33(26.6%)	44(35.4%)	77(62.2%)
Don't know	20(16.2%)	23(18.5%)	43(34.6%)
What are some of the symptoms of mosquito born disease?			
Fever	50(40.3%)	38(30.6%)	88(70.96%)
Bleeding	0(0.0%)	1(0.80%)	1(0.80%)
Rash	0(0.0%)	1(0.80%)	1(0.80%)
Head ache	7(5.6%)	4(3.2%)	11(8.8%)
Muscular pain	2(1.6%)	1(0.80%)	3(2.5%)
Vomiting	0(0.00%)	2(1.61%)	2(1.61%)
Don't Know	7(5.7%)	11(8.8%)	18(14.6%)
Where do the mosquitoes breed?			
Stagnant Polluted Water	45(36.2%)	38(30.6%)	83(66.9%)
Stagnant Clean Water	5(4.03%)	3(2.41%)	8(6.45%)
Others	2(1.7%)	3(2.41%)	5(4.03%)
Don't Know	13(10.4%)	15(12.09%)	28(22.58%)
Is Mosquito born disease treatable?			
Yes	18(14.5%)	19(15.3%)	37(29.8%)
No	0(0.00%)	4(3.3%)	4(3.3%)
Don't know	44(35.4%)	39(31.4%)	83(66.9%)
Can mosquito born disease be serious/fatal?			
Yes	7(5.64%)	13(10.4%)	20(16.1%)
No	4(3.22%)	7(5.64%)	11(8.87%)
Don't know	51(41.1%)	42(33.8%)	93(75%)
MBD is contagious?			
Yes	9(7.2%)	10(8.0%)	19(15.3%)
No	4(3.2%)	4(50.0%)	8(6.5%)
Don't Know	49(39.5%)	48(38.7%)	97(78.2%)
MBD Preventable			
Yes	24(19.3%)	34(27.4%)	58(46.8%)
No	2(1.6%)	3(2.4%)	5(4.1%)
Don't know	36(29.0%)	25(20.1%)	61(49.1%)
Any Program for to control mosquito born diseases?			
Yes	6(35.3%)	11(64.7%)	17(13.8%)
No	56(52.3%)	51(47.7%)	107(86.2%)

Table 3. Practice about mosquito borne disease

Practice about mosquito borne disease	Male	Female	Total
Water required for mosquito breeding?			
Yes	14(11.3%)	21(16.9%)	35(28.2%)
No	5(4.03%)	4(3.22%)	9(7.3%)
Don't know	43(34.6%)	37(29.8%)	80(64.5%)
If MBD symptoms present			
Stay Home and Rest	7(5.64%)	4(3.2%)	11(8.9%)
Self Medication With Over The Counter Drugs	0(0.00%)	2(1.61%)	2(1.6%)
Tradition medication	5(4.0%)	4(3.2%)	9(7.3%)
Consultant doctor	50(40.3%)	52(41.9%)	102(82.2%)
How can we prevent mosquito born disease?			
Mosquito net	1(0,80%)	7(5.64%)	8(6.5%)
Mosquito spray for Personal Protection	5(4.1%)	0(0.00%)	5(4.1%)
Use of spray in breeding place	26(20.9%)	16(12.9%)	42(33.9%)
Removing stagnant water	4(3.2%)	8(6.4%)	12(9.7%)
Wearing full length dress	1(0.80%)	3(2.41%)	4(3.2%)
Don't know	1(0.80%)	2(1.61%)	3(2.41%)
Electric coils	17(13.7%)	22(17.7%)	39(31.4%)
Others	7(5.6%)	4(3.2%)	11(8.87%)
Covering tank			
Yes	15(12.0%)	22(17.8%)	37(29.8%)
No	5(4.1%)	4(3.2%)	9(7.3%)
Don't know	42(33.8%)	36(29.1%)	78(62.9%)

Table 3 shows the practice about prevention of mosquito born disease among study participants where in 80(64.5%) were unaware about the requirement of water for mosquito breeding. Majority of the participants 102(82.2%) responded to have consulted doctors for treatment in case of any symptoms due to mosquito born diseases. Among the precautions taken for prevention of mosquito bite 42(33.9%) preferred using spray in the breeding places and 39 (31.4%) preferred using electric coils. Among study population on asking about covering of overhead tank to reduce mosquito breeding, majority 78 (62.9%) reported to be unaware of the practice where as 37(29.8%) accepted and practiced where as 9(7.3%) did not practiced though they were aware.

4. DISCUSSION

According to the present study about 75% of the study population had knowledge about diseases caused by mosquito bite meanwhile 25% of population claimed ignorance this is in contrast to the study done in Karnataka by Ravi kumar and Gururaj [4] which reported only 14.7% unawareness among rural population. The study reported malaria and dengue as the most commonly known diseases among the study population 66.9% which is similar to the study done in a rural community by Malhotra et al. [5] around 60% of the respondents were aware about dengue. With recent propagations of social and mass media the awareness about mosquito borne diseases has increased yet it still has not reached the root levels. Also the recent outbreaks of dengue in the state have created the awareness of the disease existence.

Though it is encouraging to know that the knowledge levels of rural population have improved with the measures taken by the government of India to contain these infections yet it has not achieved the expected targets. At practice levels even the persons with fair knowledge of preventive measures fail to adapt and follow due to various factors such affordability and feasibility. The current study

shows lacunae of knowledge among the study population with regards to details of mosquito borne diseases, such as mode of transmission of mosquito borne diseases, biting time of mosquitoes, first symptoms and warning signs to be cautious about. The similar issues have been addressed in various studies conducted in rural areas of south India [6]. This shows their partial knowledge about transmission of the diseases and habituations of the vectors, so necessary actions should be taken to increase the awareness among the people [7,8].

The lack of knowledge about existence of a national programme also indicates the ignorance of people which needs addressing. This in turn will help people avail the services available through the out reach activities of the programme and also facilitates better preaching of preventive measures undertaken by health personals. Thus community participation can been ensured among people through the network of these activities.

One positive practice noted in the current study is the approaching of physicians in case of suspecting mosquito borne diseases. The predominant symptom of these illness have been reported as fever by majority of the participants and also most have reported getting consulted with physicians during that period. This is in accordance with the study done by Nanjesh in rural area of Karnataka [6]. This practice among the population paves a promising way for better prevention of vector borne diseases in upcoming years.

Though Knowledge and practice regarding prevention practices of these diseases such as sanitary measures, mosquito control etc has been a ongoing process it is impossible to meet the expected outcomes without proper implementation of knowledge in people mind. This necessitates mass approach to rural areas on vector born disease along with motivation for community participation. Both health education of people and behavioural change communication can play major role in their participation in control of vector borne diseases. Also it is the responsibility of every individual to accept and apply the practices in their daily life to set an example for upcoming generations.

5. CONCLUSION

The current study addresses the various aspects of knowledge and practices followed with regards to mosquito born diseases. Though the knowledge of rural population is on improving trends due to the widespread mass education and advertisements yet the practice has not been applied enough by the residents. Also partial knowledge acquirement by part of the population further places them at the verge of getting vector borne diseases. Thus better education of population and motivation of following the practices will help them to protect themselves against mosquito born diseases.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. WHO. Media centre Fact sheet, Vector born diseases. October 2017. Available:https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases
2. World health organization, Geneva 2018; World Malaria report 2018. Available:https://www.who.int/malaria/publications/world-malaria-report-2018/en/
3. Tamilarasi R, Latha Maheshwari S, Ahimth JA, Jonathan Abish David, Jeevananthan D, Goudaperu Naveen, Kerena Epsiba. A cross sectional study to assess the knowledge, attitude and practice of dengue fever in urban field practice area. Stanley Medical Journal. 2017;4(1):8-13.
4. K. Ravi Kumar and G. Gururaj community perception regarding mosquito-borne diseases in Karnataka State, India. Dengue Bulletin. 2005;29:157-164.
5. Malhotra G, Yadav A, Dudeja P. Knowledge, awareness and practices regarding dengue among rural and slum communities in North Indian city, India. Int J Med Sci Public Health. 2014;3:295-9.

6. Nanjesh KS. A study of mosquito borne diseases awareness, attitude and practices among the rural population in Karnataka, India. Int J Community Med Public Health. 2017;4(11):4178-4181.
7. Jelinek T. Dengue fever in international travelers. Clinical Infectious Diseases. 2000;31(1):144-147
8. Fradin MS, Day JF. Comparative efficacy of insect repellents against mosquito bites. New England Journal of Medicine. 2002;347(1):13-8.

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