



**STUDY OF KNOWLEDGE AND PRACTICE FOLLOWED AGAINST MOSQUITO BORNE DISEASES IN AN URBAN AREA OF TIRUNELVELI DISTRICT, TAMILNADU, INDIA**

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**ABSTRACT**

**Background:** Public awareness is essential for coordinating with the outreach activities of government like source reduction, for reducing the morbidity and for attaining zero mortality because of vector borne diseases. **Materials and methods:** A cross-sectional study was conducted to assess the knowledge and practices followed against mosquito borne diseases among 200 adults aged more than 18 years residing in an Urban Health centre area of Tirunelveli district, Tamilnadu, South India. **Results:** Among the 200 participants, 98% believed mosquito bite can cause diseases. Out of 200, 52% mentioned dengue as the common mosquito borne disease followed by Malaria (37%). Regarding the breeding places of mosquitoes, 31% believed it to be open drainage and 68% felt it was stagnant water. Out of 200, 30.5% were not aware of day biting habit of mosquitoes, 91.5% were using personal protective measures against mosquitoes and coils (48%) were commonly used. **Conclusion:** Most of the participants in the current study were aware of mosquito borne diseases, but there are some lacunae in knowledge in certain aspects like day biting habit of mosquitoes, regarding breeding sites which are essential to reduce their risk.

**KEYWORDS:** Vectors, mosquito borne diseases, dengue, malaria, breeding sites.

**INTRODUCTION**

Vector borne diseases prevalent in India are Dengue, Malaria, Chikungunya, Filaria, Japanese Encephalitis and kala-azar, among them kala-azar is transmitted by sandflies and all the others are by different vector mosquitoes. Mosquito borne diseases are spread to the people by bite of infected mosquitoes and pose a major threat globally and in India. National Vector Borne Disease Control Programme (NVBDCP) is functioning in India for the control and prevention of Vector borne diseases. As per Annual report 2014-15 of NVBDCP, till November, 2014, there were 851,372 cases and 316 deaths due to malaria, 33320 cases and 86 deaths due to Dengue, 12694 cases of Chikungunya reported in India.<sup>[1]</sup> The transmission or spread of these diseases is based mainly on human-vectors contact and the prevalence or presence of infective vectors. Integrated vector control measures like indoor residual spraying, environment management; Supportive interventions like Inter-sectoral convergence and Behaviour Change Communication necessary for social mobilization are essential strategies under the programme.

Awareness among the public plays a main role in effective disease prevention and control. Health education enhances the public awareness and public cooperation is essential for coordinating with the outreach activities of government like source reduction, for reducing the morbidity and for attaining zero mortality because of vector borne diseases. Worldwide various studies have assessed the knowledge and practices related to prevention and control of mosquito borne diseases among different population, but there is paucity of evidence in the current geographic region.

**MATERIALS AND METHODS**

**Objectives:** To assess the knowledge and practices followed against mosquito borne diseases among the people in an Urban Health centre area in Tirunelveli district, Tamilnadu, India.

**Type of study:** Cross-sectional study.

**Study population:** Adults aged more than 18 years residing in an Urban Health centre area of Tirunelveli district.

**Study tool:** Study was conducted using a predesigned pretested questionnaire. The first part of the questionnaire was framed to retrieve the socio-demographic informations of the participants. The second part of the questionnaire was framed to assess the knowledge of the participants regarding diseases caused by mosquitoes, breeding places of mosquitoes, preventive and control measures against mosquito borne diseases.

**Procedure:** Adults aged more than 18 years residing in the Urban Health centre area in Tirunelveli district and attending the outpatient clinic of Urban Health centre during the study period were approached for the study. Objectives of the study were explained and confidentiality was assured. Participants who consented for the study were approached and administered the questionnaire. Privacy was maintained during data collection.

**Method of analysis:** Data were entered in Microsoft excel sheet 2013 and analysed using SPSS software version 21 and results were expressed in prevalence percentages.

## RESULTS

Among the 200 study participants, 105 (52.5%) are males, 95 (47.5%) are females.

**Table 1: Age and gender distribution of study participants (n=200).**

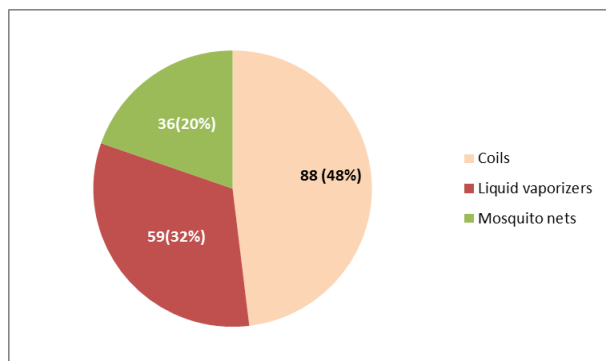
Age distribution	Number	Percent
18-27	24	12%
28-37	35	17.5%
38-47	37	18.5%
48-57	37	18.5%
≥58	67	33.5%
Total	200	100%

With regard to occupation, 86 (43%) were homemakers, 47(23.5%) were daily wagers, 20 (10%) were unemployed, 19 (9.5%) were Government servants, 19 (9.5%) were painters, 9(4.5%) were weavers. With respect to education, 39 (19.5%) were illiterates, 91 (45.5%) had primary level of education, 46 (23%) had middle school level of education and 24 (12%) were graduates.

Out of 200 participants, 196 (98%) believed mosquito bite can cause diseases and 4(2%) believed mosquito bites won't lead to diseases. Among the 200 participants, 107 (53.5%) have open drainage system around their house.

**Table 2: Knowledge and practice against mosquito borne diseases among the study participants (n=200).**

Study variables	Number	Percentage
<b>Knowledge about mosquito borne diseases</b>		
Mentioned at least one disease	174	87%
<b>Mosquito borne diseases mentioned among them (174)</b>		
Dengue	90	52%
Malaria	64	37%
Chikungunya	20	11%
<b>Knowledge about breeding places of mosquitoes</b>		
Drainage	62	31%
Stagnant water	136	68%
Not aware	2	1%
<b>Awareness about day biting habit of mosquitoes</b>		
Aware	139	69.5%
Not aware	61	30.5%
<b>Practice of personal protective measures against mosquitoes</b>		
Yes	183	91.5%
No	17	8.5%



**Figure.1. Personal protective measures used by study participants (n=183).**

Among the 200 participants, 98% felt mosquito bite can cause diseases. Out of 200, 52% mentioned dengue as the common mosquito borne disease followed by Malaria (37%). Regarding the breeding places of mosquitoes, 31% believed it to be open drainage and 68% felt it was stagnant water. Out of 200, 30.5% were not aware of day biting habit of mosquitoes, 91.5% were using personal protective measures against mosquitoes and coils (48%) were commonly used.

## DISCUSSION

Study by Sumit Wasnik and Arjun Mehta<sup>[2]</sup> among patients in a tertiary care hospital in Mumbai showed that 45 (30%) out of 150 patients mentioned the common diseases spread by mosquitoes as malaria, 55(36.6%) mentioned Malaria, Dengue and 24 (16%) mentioned Malaria, Dengue, Chikungunya. Regarding the precautions taken for protecting from mosquito bites, 61 (40%) mentioned the use of coil/liquid, 19 (12.6%) used coil and net, 12 (8%) use nets and 53 (35.3%) use nothing. Among the patients, 45(30%) believed mosquitoes bite only during night. Few of these findings are comparable with the current study, in which 52% were aware of dengue and 37% on Malaria, but in the current study more participants (69.5%) were aware of day biting habit of mosquitoes and 91.5% were using personal protective measures against mosquitoes which is high when compared with their study.

Study by Anand T et al<sup>[3]</sup> in resettlement colony of Delhi showed that 65 out of 100 of his study participants mentioned the common diseases spread by mosquitoes as dengue, 58 as malaria, 13 mentioned Chikungunya, 7 were not aware. Regarding the mosquito breeding sites, 68 mentioned stagnant clean water as the common breeding site and 29 as stagnant polluted water. Ninety percent were using personal protective measures against mosquitoes. Most common PPM used among the study participants was Liquid vaporizers (60%) followed by 32.2% were using insecticidal spray. The results of this study are comparable with the current study.

Study by Nelson SB et al<sup>[4]</sup> in rural area of Tamil Nadu, South India showed that all of their study. Participants were aware that mosquitoes can spread diseases and

dengue was perceived to be the most common mosquito borne disease. Among the participants, 113(62.7%) mentioned coconut shells as the mosquito breeding site. Among the 78.9% of households using personal protective measures, mosquito coil was used by 59.8%. Few of these findings are comparable with the current study, in which 98% believed mosquito bites can lead to diseases, 87% were aware about at least one disease caused by mosquitoes and dengue was the commonly known disease. But the use of personal protective measures was high in the current study, 91.5% have followed some form of personal protective measure to prevent them from mosquito bites.

Study by Kulkarni RR et al<sup>[5]</sup> in urban areas of Belagavi city showed that among 360 participants, 78.33% study subjects were aware about mosquitoes borne diseases, 31.3% believed that mosquito bites can cause malaria, dengue and chikungunya, 36.6% mentioned drainage and garbage as common mosquito breeding sites, 57.8% use mosquito coils to prevent themselves from mosquito bites. The current study has showed better knowledge and better use of personal protective measures when compared with the results of this study.

## CONCLUSION

The current study has assessed the knowledge and practice related to control and preventive measures against mosquito borne diseases among participants in a selected urban area in Tirunelveli district and has showed that most of the participants were aware of mosquito borne diseases, but there are some lacunae in knowledge in aspects like day biting habit of mosquitoes, regarding breeding sites which are essential to reduce their risk. Awareness help individuals to reduce their risk of mosquito borne diseases by source reduction or reducing the breeding sites in which the mosquitoes develop and also help in preventing from being bitten by mosquitoes. Role of Health care providers, media, schools in imparting knowledge among public need to be emphasized. Health education campaigns about mosquito-borne diseases should be conducted regularly in needed areas and it has to encourage the use of proper personal protection techniques and source reduction techniques.

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**Conflict of interest:** Nil.

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