## **Original Research Article**

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# What rural people in Tamilnadu are doing to prevent dengue?

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#### **ABSTRACT**

**Background:** Traditionally dengue was perceived as an urban problem. But of late many cases are being reported from rural areas. This study was undertaken to assess the preventive measures taken by people in a rural area against dengue.

**Methods:** This was a cross sectional study done in the rural field practice area of a private medical college in Tamilnadu. Hundred houses were selected from five villages through a multi stage simple random sampling. A pretested semi-structured interview schedule was used for data collection.

**Results:** All household surveyed reported using some form of personal measures against dengue. The most common personal protective measure was use of mosquito nets (58%) followed by mosquito coils (9%). Almost all (98%) of the respondents use the PPM at night time only.

**Conclusions:** It was found that many people are using PPMs but mostly during the daytime. This practice has to be corrected with more awareness and health education.

Keywords: Dengue, Rural, Prevention, PPM

### INTRODUCTION

Dengue fever (DF) had been reported regularly in Tamilnadu with highest numbers being recorded during September to December (North East Monsoon season). In the year 2015, a total of 4535 cases have been reported in Tamilnadu with 12 deaths. This year (2016) up to 30<sup>th</sup> April, 894 cases of dengue have been reported from Tamilnadu with 3 deaths. DF and dengue hemorrhagic fever are prevalent in urban areas, as Aedes aegypti mosquito the vector of dengue, usually breeds in urban and peri-urban areas. Outbreaks of dengue fever have also been reported from rural areas of India. Rapid growths of industries and building activities, improvement of transport facilities such as railway and roads, increased movement of people from urban to rural, and environmental changes have all favored the spread of

dengue in rural as well as urban areas.<sup>4,5</sup> There are few studies on dengue in rural areas in India.<sup>6,7</sup> Personal protective measures (PPM) plays an important role in preventing spread of dengue. The present study was undertaken with the objective to study the various measures taken by families to prevent dengue in a rural area.

### **METHODS**

It was a cross sectional community based study conducted in the rural field practice area of Meenakshi Medical College and Research Institute (MMCH&RI) in Kancheepuram, Tamilnadu during the month of October 2015. Prior approval of the Institutional Ethics Committee was obtained to conduct the study. A total of 100 household were taken up for the study. These 100

household were selected in a multi stage random sampling technique. In the first stage, 5 villages were selected from total of 10 villages within the rural field practice area of MMCH&RI, by simple random method, using computer generated random numbers. In the second stage, one street is selected by simple random method in each selected village. The survey was started from one end of the street and continued till 20 houses were surveyed. If the number fell short, the next street was taken up. A pre-tested semi-structured interview schedule was used for data collection. The head of the household or any other adult member willing to participate was interviewed. Data collected were entered in MS office Excel and analyzed using EPI INFO 2005 software of World Health Organization. The results were presented in simple proportions.

#### **RESULTS**

A total of 100 household were interviewed and the socio demographic details are shown in Table 1. Majority of the respondents (44%) were in the age group of 20 to 40 years. Of all the participants, 60% were male and most (81%) were educated up to 10<sup>th</sup> standard or less. All household surveyed reported using some form of personal measures against dengue. Nearly 95% of the household stated that they try to prevent water stagnation, but only 12% said they empty water container at home weekly. The most common personal protective measure was use of mosquito nets (58%) followed by mosquito coils (09%). A small proportion (4%) of respondent used insecticidal sprays. Almost all (98%) of the respondents use the PPM at night time only. The rest (2%) used at both during night and day (Table 2).

Table 1: Socio-demographic characteristics of study participants.

	Socio demographic variable		Number (N=100)	%
1	Sex	Female	40	40
		Male	60	61
2	Age Group	< 20 years	3	3
		20-40 years	44	44
		41-60 years	42	42
		> 60 years	11	11
	Education	Illiterate	34	34
3		School level	47	47
		High School level	13	13
		College and above level	6	6
4	Occupation	Farmer	33	33
		House wife	29	29
		Company worker	22	22
		Student	6	6
		Other	10	10

**Table 2: Preventive practices.** 

Practice to prevent dengue (multiple responses permitted)	In percentage (multiple responses)			
Prevent water stagnation	95			
Use of mosquito repellant creams	00			
Use of mosquito repellant coils	09			
Use of mosquito repellant vaporizers	00			
Use of mosquito nets	58			
Spraying insecticides	04			
Empty container weekly	12			
Cover water container at home	00			
Professional pest control method	03			
Screen on windows	00			
Cut down bushes in the yard /vicinity	00			
Frequency of using personal				
protective methods				
Only during night	98			
Only during day	00			
Both day and night	02			

#### DISCUSSION

Every household (100%) is doing something to prevent dengue. Similar observations were made in other studies in Delhi where 90% and in Gujarat where 97% of the households practice some form of PPMs. 8,9 The most common PPMs being used by the study population were mosquito nets (58%), mosquito coils (9%) and insecticidal sprays (4%). These findings are slightly discordant to the findings of another study done among rural people in Andhra Pradesh where mosquito nets were used by only 11% and mosquito repellents/coils by 46%.6 These study findings were quite different from studies done in urban areas where a majority used liquid vapours and mats, for obvious reasons. 8,9 The PPMs were used mostly during night time. These findings were consistent with other studies in Delhi and Chennai. 8,10 As the vector of dengue bites during daytime it is essential to use these measures during the day time also. To conclude it can be stated that though many people are using PPMs, the preventive practices among the day biting mosquito is low which need to be corrected with proper health education.

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Institutional Ethics Committee

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