Original Research Article

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Perception and practices pertaining to prevention and control of dengue fever among rural population in Mysore district

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ABSTRACT

Background: Dengue is the most prevalent arboviral disease in human beings, with 3.6 billion people living in areas with risk of disease transmission. Many dengue prevalence studies have been conducted in urban areas but it is important to remember the often-forgotten rural population who are also affected. The objective of the study was to assess the perceptions and practices related to dengue among residents of rural community.

Methods: A community based cross sectional study was conducted for a period of two months, at Suttur village of Mysore district. Total of 200 individuals were interviewed by doing house to house survey to obtain details of sociodemographic characteristics, perceptions regarding dengue and practices of preventive measures for mosquito breeding and man mosquito contact were obtained using a pre tested questionnaire.

Results: In the present study 42 (21%) members had ever heard of the disease called dengue and 18 (42.85%) of them knew that dengue fever spreads by mosquito bite and 12 (28.57%) people said it spreads by drinking dirty water, none of them knew which species of mosquitoes spread dengue fever. Many of them perceive that mosquito spreading Dengue breads in dirty water and garbage. Majority of the people used bed nets, mosquito coil and fans as methods of personal protection and 97% they followed weekly cleaning of water containers to eliminate mosquito breeding.

Conclusions: the study shows, the knowledge regarding cause, modes of spread of dengue and vector characteristics were poor but the practices towards mosquito control and eliminating the breeding places of mosquito were adequate.

Keywords: Perception, Practice, Dengue, Rural area, Mysore

INTRODUCTION

Dengue is the most prevalent arboviral disease in human beings, with 3.6 billion people living in areas with risk of disease transmission, and with an estimated 390 million dengue virus infections and 96 million dengue cases annually. This is also the world's fastest growing vector-borne disease, with a 30-fold increase in disease incidence over the last 50 years, driven by population growth, urbanization, increased travel, and insufficient vector control programs

The dengue virus transmitted in the population by vector mosquitoes of *Aedes* species mainly *Aedes aegypti* and *A. Albopictus*. The infection earlier restricted to urban/semi-urban areas can now be seen in rural areas as well.² Over the last decade, the geographical distribution of dengue fever has included new countries and more rural areas, making it the most rapidly expanding arboviral disease in the world.³

Despite of awareness programs through mass communication and educational approaches, community

participation is far below expectation. Community participation in turn depends on peoples' awareness, knowledge, attitude and practice related to mosquito borne disease.⁴

Many dengue prevalence studies have been conducted in urban areas but it is important to remember the often-forgotten rural population who are also affected and may act as a reservoir for the disease. In recent years the cases of dengue has increased dramatically in Mysore district specially from rural areas. Therefore the present study was conducted to know the perception and practices related to prevention and control of dengue fever in rural areas of Mysore district.

Objective

To assess the perceptions and practices related to dengue among residents of rural community.

METHODS

A community based cross sectional study was conducted at Suttur village which is the rural field practice area of JSSMC, Mysore. The study was done for a period of two months from (12th August to 15th September), during the study period total of 200 individuals were interviewed by doing house to house survey. For selecting the houses, a street from central bus stand was selected randomly by picking chits and from that street every fifth house was selected for survey. From each household one individual preferably Head of the family was interviewed and obtained details of socio-demographic characteristics, perceptions regarding dengue and practices of preventive measures for mosquito breeding and man mosquito contact were obtained using a pre tested and semistructured questionnaire. Those who failed to answer all questions and those who were not at home during the study period were excluded in this study.

Data entry and analysis was done using SPSS version 21. Descriptive statistics was applied such as frequency (%) for categorical data. Protocol for this study was approved by Institutional ethics committee.

RESULTS

In this present survey, 200 respondents, majority of them aged from 15 to 60 years old and also majority were females (78%). With respect to education status majority were not literate (36.5%) and among who were literate many of them have studied till middle school, only three members have completed graduation (Table 1).

Out of 200 people 30.5% were home-makers and followed by semi-skilled and unskilled-workers (Table 1).

In this survey among 200 participants on 42 (21%) members had ever heard of the disease called Dengue.

Among who heard of the name 18 members (42.85%) knew that Dengue Fever spreads by mosquito bite and 12 (28.57%) people said it spreads by drinking dirty water (Table 2).

Table 1: Socio-demographic characteristics of study subjects (n=200).

Categories	Frequency (n=200)	Percentage (%)
Sex		
Female	156	78
Male	44	22
Age (in years)		
15-29	68	34
30-44	88	44
45-59	28	14
>59	16	8
Education		
Graduate	03	1.5
PUC/Diploma	22	11
High School	32	16
Middle School	46	23
Primary School	24	12
Not-literate	73	36.5
Occupation		
Semi-professional	22	11
Skilled worker	18	9
Semi-skilled worker	30	15
Unskilled worker	25	12.5
Home-maker	61	30.5
Retired	04	2
Unemployed	26	13
Students	14	7

Table 2: Distribution of study participants according to perception on modes of spread of dengue (n=42*).

Mode of spread of Dengue	Frequency (n=42)	Percentage (%)
Mosquito bite	18	42.85
Drinking dirty water	12	28.57
Do not know	12	28.57

*Among 200 respondents 42 subjects had ever heard about the disease dengue.

Regarding perception of vector characteristics of dengue, none of them knew which species of mosquitoes spread dengue fever, and majority of them perceive that mosquito spreading dengue breads in dirty water and garbage. Majority of them opined that dengue mosquitoes bite in night and evening time (Table 3).

With respect to knowledge of symptoms of dengue, 57.1% of people did not know any symptoms, among who responded they said fever, headache and muscle pain are the main symptoms (Table 4).

Table 3: Perceptions of vector characteristics of dengue (n=18).

Breeding site of mosquitoes causing dengue*	Frequency (n=18)	Percentage (%)
Stagnant clean water	03	16.66
Dirty water	12	66.66
Garbage	08	44.44
Don't know	04	22.22
Most frequent time of n	nosquito bite*	
Day time	01	5.55
Evening	12	66.66
Night	14	77.77
Don't know	03	16.66

^{*} Multiple responses.

Table 4: Perception on symptoms of dengue (n=42).

Symptoms of dengue*	Frequency (n=42)	Percentage (%)
Fever	16	38.1
Bleeding	04	9.5
Muscle pain	10	23.8
Headache	16	38.1
Don't know	24	57.1

^{*} Multiple responses.

Table 5: Current methods practiced for prevention of mosquito bite and elimination of mosquito breeding sites among persons who knows dengue is spread by mosquito bite (n=18).

Methods to prevent mosquito bite*	Frequency	Percentage* (%)
Bed nets	18	100
Fan	07	38.9
Mosquito coils	12	66.6
Methods to eliminate breeding places		
Covering water containers	15	83.3
Cleaning water filled containers and ditches	18	100
a) Weekly	18	100

^{*}Multiple responses

Related to practices to prevent the mosquito bite and removal of breeding sites at household level, the people who knew dengue spreads by mosquito bite, majority of them used bed nets, mosquito coil and fans as methods of personal protection and all of them followed weekly cleaning of water storing containers to eliminate mosquito breeding (Table 5).

Among persons who do not know that dengue is transmitted by mosquito, 48% of them did not use any personal protection measures and rest others use fan, bed nets and mosquito coils as measures. For removal of

breeding places 97% of them cleaned water containers and ditches weekly (Table 6).

Table 6: Current methods practiced for prevention of mosquito bite and elimination of mosquito breeding sites (n=200).

Methods to prevent mosquito bite*	Frequency	Percentage*
Bed nets	56	20
Fan	64	32
Mosquito coils	32	16
Does nothing	96	48
Methods to eliminate breeding places		
Covering water containers	138	69
Cleaning water filled containers and ditches	200	100
a) Weekly	194	97
b) Monthly	06	3.0

^{*} Multiple responses

Based on the findings of the study, people who had heard of dengue they got information mainly from Television and friends/ people from their vicinity. There was no one dominant media to convey the dengue information to this community (Table 7).

Table 7: Source of information regarding dengue (n=42).

Source of information*	Frequency	Percentage*
Friends	12	28.6
Television	20	47.6
News paper	08	19.0
Doctor	04	9.5
Health workers	10	23.8

^{*} Multiple responses

DISCUSSION

Dengue is such a condition for which there is no availability of specific treatment or vaccine, therefore the mainstay of control of this viral disease is preventive approach, both primary prevention of reducing vector abundance, eliminating breeding areas, and personal protective measures and secondary preventive measures like early diagnosis and prompt treatment.

Preventive strategies works mainly by community empowerment with respect to knowledge of cause for the disease, mode of spread, early identification of the symptoms and approaching the health care at the earliest. It must include all the environments — households, workplaces, schools and playgrounds making are free from any potential habitations of the Aedes mosquitoes.

In the present study only 21% people have heard of dengue fever, despite of the fact that number of cases are increasing from rural areas, which is in contrast to studies in Delhi and Maharashtra. heard of dengue fever. In the study population only 18 members knew that Dengue is transmitted by mosquito bite, which in contrast to the studies done in other parts of India where knowledge regarding transmission of dengue and Aedes mosquito breeding sites is good. Add and the studies done in like garbage, sewage or any dirty/unclean places.

The overall knowledge of cause, spread of the disease and symptoms of dengue were poor in the present study, which is similar to the findings of study done in Malaysia where compared to Urban and semi-urban areas, knowledge among rural people was found less, but the findings are in contrast with the other studies done in India where the knowledge of the participants was appreciable.⁵⁻¹⁰

Striking finding in present study is even though knowledge pertaining to dengue is poor, the practices for removal of breeding places by cleaning the water containers and ditches weekly and covering the water containers with lid was very good. They are practicing good personal protection measures also to prevent mosquito bite, reason for better practice might be though majority are not aware of dengue transmission, they feel that there are several diseases which spread through mosquito bite. These findings are in contrast to other studies where there is a vast gap between knowledge and practice regarding dengue, where knowledge is good but they are failed to utilize it and bring it into practice to prevent the transmission of the disease. 5-7,9-12 Study done by Gupta et al where they have compared the knowledge, attitude and practice related to Dengue among rural and urban people, where only two fifth of the people from rural area practiced some methods of personal protection measures.⁷ in present study mosquito breeding control methods like cleaning the containers and ditches weekly practiced by 97% of people even they do not aware that Aedes mosquito breeds in clean artificially collected water.

Having knowledge of transmission should be a critical queue point to break the cycle of the disease. This can be seen later of the relations between this knowledge and the practice of cleaning the environment to combat dengue, but being following better practical methods to prevent breeding as well as personal protection without having the knowledge of the disease is positive aspect for sustainable prevention of Dengue spread in the community. By giving right knowledge through health education programs, utilizing audio-visual media as it is being the most effective and accepted way of mass media, to reach the maximum population.

CONCLUSION

The present study shows that the knowledge regarding cause, modes of spread of the disease and vector characteristics were poor but the practices towards mosquito control measures and eliminating the breeding places of mosquito were adequate.

Recommendations

Studies of knowledge, attitude and practices with regards to most rapidly spreading disease like dengue is never irrelevant or out-of-date. KAP study is the primary tool of situational analysis of the population's literacy to dengue and its manifestation. There for more exploring studies are to be done especially in rural and semi-urban areas, where the disease was previously rare but now it is becoming prevalent.

We need the intense health education approach and utilization of community health workers and television and other mass media to give awareness to public and utilize the present practice methods for to eliminate the breeding sites of the Aedes and thus diminishing the number of the dengue vectors to result in the reduction of the disease.

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Institutional Ethics Committee

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