

Barriers and Bridges to Prevention of Dengue - The Need for an Effective Behaviour Change Communication

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During the last decade, more severe epidemics of dengue have hit several cities in India. Despite the magnitude of the problem no documented evidence exists in Aligarh which reveals about the awareness of dengue fever. The present study aims to assess the knowledge and preventive practices, regarding dengue fever in patients attending a tertiary hospital. An independent, cross-sectional, questionnaire based survey was done in the month of August and September 2011. A sample of 218 participants was selected by probability sampling from the central waiting hall of OPDs at JNMCH. The tool was a semi structured and pretested proforma. Data collected was entered and analysed by SPSS 13 for windows. About 78% of individuals had heard of dengue and knowledge was poor. Literate individuals had relatively more knowledge than the illiterate. Urban residents were also more informed compared to rural inhabitants. Knowledge on prevention was mainly focused on self protection from mosquito bite rather than eradication efforts. In spite of fair awareness among the respondents, the effective knowledge was low and the preventive practices were even poorer and were limited only to higher emphasis on personal protection against mosquito bite. There is a need to search for ways to translate this knowledge into preventive practice by behavior change communication that would reduce the transmission of dengue.

Key words: Dengue, knowledge, Preventive practices, Behavior Change Communication.

Dengue virus infection is increasingly recognized as one of the world's emerging infectious diseases¹⁻⁴. Over half of the world's population resides in areas potentially at risk for dengue transmission, making dengue one of the most important human viral disease transmitted by arthropod vectors in terms of morbidity and mortality⁵. The rapid geographic expansion of both the virus and the mosquito, regularity of epidemics, and the increasing occurrence of Dengue Haemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS) are all causes for great concern⁶.

During the last decade, more severe epidemics of dengue have hit several cities in India. Despite the magnitude of the problem no documented evidence exists in Aligarh which reveals about the awareness of dengue fever. The present study was undertaken with the objective of assessing the knowledge and preventive practices regarding dengue fever in patients attending a tertiary hospital.

Methodology

Study design

An independent, cross-sectional, questionnaire based survey was done in the month of August and September 2011, to assess the level of awareness, attitude and practices for the prevention of dengue fever in general public. Written consent was taken from the participants.

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The study was conducted in Jawaharlal Nehru Medical College Hospital, Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

Subjects

A sample size of 221 individuals was determined by taking confidence level of 95% and confidence interval of 6.5 for a cumulative population of 7500 (approx.) over a period of two months. The sample was drawn from the main waiting hall of the Out-Patient Department. The hall had a capacity of 125 chairs fixed in rows. It was observed that usually the chairs remain fully occupied on working days. Thus 10 individuals were selected each day by systematic random sampling taking a sample interval of 12. Those not interested or sick were excluded from the survey. In this case the person sitting on the next chair was included in the sample. After screening the questionnaires for the completeness of information 3 were rejected. Thus, the results are based on 218 subjects.

Methods

A semi structured questionnaire was developed particularly for the purpose of this study. It was a combination of open and closed ended questionnaires to provide information about general socio-demographic characteristics and the pattern of personal protection from vector borne diseases.

Statistical Analysis

Data collected during the survey was entered and analyzed by statistical software 'SPSS 13' for windows and appropriate tests were applied. Ethical issue: At the end of the interview each

respondent was provided a handout with information relating to mosquito borne diseases. This handout contained Information on the vector, its breeding sites, biting time; dengue fever, its transmission, symptoms, treatment and preventive measures.

RESULTS AND DISCUSSION

A large fraction (47%) of the respondents were in (26-40 years) age group followed by 27% individuals in (18-25 years) age group. Thus the majority (74%) of them were in (18-40 years) age group. There were more males (63.3%) than female (37.7%) respondents. 29% of them had completed high school followed by those who had primary education (27%). Only 16% of respondents were graduates. About one fourth of the individuals were illiterate. Majority (42%) of them belonged to low socio economic classification and were in Class V of the modified B.G Prasad classification. There were large number of participants who comprised the rural population (57%) compared to those who resided in the urban, peri-urban or urban slum (43%) area. More than half (64%) of the respondents were Muslims and the rest of them followed Hinduism (36%) (Fig. 1).

Awareness about dengue fever

About 78% of individuals had heard of dengue out of which only (67%) knew that dengue is transmissible. In another study from urban area of East Delhi, 82.3% were reported to be aware of dengue⁷. Similar studies were conducted in other countries where the awareness level was found to

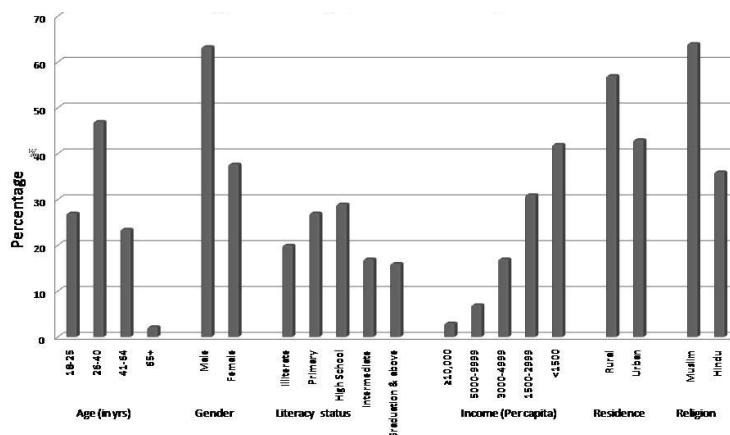


Fig. 1. Demographic profile of respondents

be 78% and 67% respectively⁸⁻⁹.

The most common cause mentioned for dengue was mosquito bite (64.7%). The other causes stated included dirty drinking water (10.3%), unhygienic food (8.3%), fly bite (5.8%). Although 64.7% of the individuals mentioned mosquito bite as the mode of spread but only 23 (20.3%) stated that it could spread from one individual to another. In a study from urban south Delhi¹⁰, mosquito bite as a cause was mentioned by 68% of the respondents which is similar to this study. About 126 (74%) of respondents were aware of fever as the symptom whereas 18.2% responses included nausea and vomiting followed by headache

(15.9%). About 11% of the respondents didn't know about any symptom of dengue. Similar observations were reported from Delhi in a study by Acharya et al¹⁰. Literate individuals had relatively more knowledge than the illiterate. Urban residents were also more informed compared to rural inhabitants. Knowledge on prevention was mainly focused on self protection from mosquito bite rather than eradication efforts (Table 2).

Knowledge about vector

101 (59.4%) of individuals stated standing clean water as the common breeding site for the mosquito. The other options mentioned were standing dirty water, running dirty water, running

Table 1. Awareness on dengue symptoms

Aware of dengue (n=218)		Human to Human spread (n=113)	
Yes	170(78)	Yes	23(20.3)
No	48 (22)	No	67(59.4)
Is dengue transmissible (n=170)	Don't know	23(20.3)	
Yes	113(67)	Common symptoms (n=170)	
No	43(25.3)	Fever	126(74.1)
Don't know	12(7)	Bleeding	11(6.5)
Mode of spread (n=113)	Rash	13(7.6)	
Mosquito bite	101(64.7)	Headache	27(15.9)
Fly bite	9(5.8)	Muscular pain	9(5.2)
Dirty drinking water	16(10.3)	Nausea/vomiting	31(18.2)
Unhygienic food	13(8.3)	Other	21(12.4)
Don't know	17 (10.9)	Don't know	19(11.2)

Table 2. Knowledge about vector and practice of preventive measures

Knowledge about vector (n=170)		Practice of Preventive measures (n=170)	
<i>Common breeding site</i>	Prevention against mosquito bite		
Standing clean water	101(59.4)	Non Net Products	143 (84.1)
Standing dirty water	67(39.4)	External netting of Window & door screen	109(64.1)
Garbage	47(27.6)	Covering of body	87(51.2)
Plants/vegetations	17(10.0)	Use of smoke to drive away	56(32.9)
Running clean water	37(21.8)		
Running dirty water	58(34.1)		
Others	14(8.2)		
Don't know	27(15.8)		
Most frequent mosquito bite time	Eradication of breeding sites		
sunrise	17(10.0)	Prevent water stagnation	37(39.4)
sunset	47(27.4)	Covering containers	59(34.7)
morning	21(12.4)	Changing water in storage tanks	47(27.64)
noon	14(8.2)	Cutting vegetations	17(10.0)
Night	99(58.2)	Cleaning of garbage	46(27.1)
Don't know	19(11.2)	Don't know	130(76.5)

clean water. About 16% of the respondents couldn't mention any of the breeding site. Majority (58.2%) of the individuals were of the view that the mosquito for dengue, bites at night whereas only 27.4% could correctly point out the preferred biting time is around sunset. Similar observations were found in a study by Itrat *et al*¹¹.

Practice of Preventive measures

The Practice of preventive measures was on non-net products and mainly focused towards personal protection. 84% of the respondents used one or the other form of non-net products. The non-net products included mosquito spray, mosquito coil/vaporizer, mosquito repellents creams and electric racket. The other measures adopted were external netting of windows and door screens, covering of the body and use of smoke to drive away mosquitoes.

The practice followed for the eradication of breeding sites was meager. 76.5% of the respondents did not know about the practice related to eradication of breeding sites. The main approach of the respondents was towards self protection and for short term outcome. Moreover these measures require money to bear these products. Little attention is paid towards sustained efforts for the control of breeding of mosquitoes. This is a cost effective approach and could pay large dividends and has a long term effect. Similarly, researchers from Jamaica¹² reported that most people (54.4%) had fair knowledge of dengue fever, but this was associated with appropriate attitudes in only 46.6% of participants. Furthermore, only 28.5% of respondents were engaged in positive preventive practices.

Limitation of the study

The actual practice of the preventive practices at the household level was not assessed which would have given a refined estimation of the problem.

CONCLUSIONS

In spite of fair awareness among the respondents, the effective knowledge was low and the preventive practices were even poorer and were limited only to higher emphasis on personal protection against mosquito bite. Our study

highlights the need for further increase in knowledge regarding dengue by IEC activities to identify barriers for action and search for ways to translate this knowledge into preventive practice by behavior change communication that would ultimately reduce the transmission of dengue.

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