PERCEPTION ON DENGUE AND ITS PREVENTION AMONG CONSTRUCTION WORKERS IN MKCG MEDICAL COLLEGE CAMPUS, BERHAMPUR, ODISHA- A CROSS-SECTIONAL STUDY

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ABSTRACT

BACKGROUND

Dengue is a major public health concern due to rapid urban and rural infrastructure development. So a study was conducted on construction workers who are at higher risk of dengue transmission.

Objectives- To assess the knowledge of the study population on different aspects of dengue and its preventive methods.

MATERIALS AND METHODS

Type of study- Cross- sectional study.

Place of study- MKCG Medical College Campus, Berhampur.

Duration of study- 1 month, June 2017.

Study population- 216 construction workers of L & T Company.

Sampling method- Convenient sampling. After obtaining IEC approval and verbal consent from authority (L & T) and the study population, data were collected using scientifically designed pre-tested questionnaire.

Statistical analysis – Percentage.

RESULTS

85.2% study population were from rural areas and 57.4% from outside state. They are construction workers (53.7%), supply workers (27.8%), officials (13%) and scavengers (5.6%). 100% had heard of dengue. Of them 48.8% heard it from mass media. 100% knew mosquito bite causes dengue. 41% opined that mosquito causing dengue bites in day time. 43.6% participants knew the symptoms as fever and rigor. 41% told that use of mosquito net can give protection against mosquito bite. Filling of the ditches (70%) & proper disposal of garbage (22%) and of unused container (8%) was mentioned to be the preventive measure for mosquito breeding.

CONCLUSION

Workers had insufficient knowledge about the disease, its causes or its prevention. Though they are at more risk of developing disease, they lack the preventive knowledge. It is recommended that the authority should promote drive for health awareness campaign and screening among workers by health personnel as well as elimination of breeding ground of mosquito.

KEYWORDS

Dengue, Perception, Construction Workers.

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BACKGROUND

Dengue is a mosquito-borne viral disease that has rapidly spread in all regions of WHO in recent years. The virus has mostly caused disease in tropical and subtropical areas of the world with local variations in risk. Its prevalence is influenced by rainfall, temperature and unplanned rapid urbanisation. One recent global estimate indicates the occurrence of 390 million dengue infections per year with clinically manifested cases being 96 million.[1] It is estimated that 3.9 billion people, in 128 countries are at risk of infection with dengue viruses.[2] Member States in three WHO regions reported dengue cases increased from 2.2 million in 2010 to 3.2 million in 2015.[3] Its epidemiological patterns, multiple dengue virus serotypes in many countries and the alarming impact on both human health and the global and national economies confer it world importance. In India 36635 dengue cases were reported under National Vector Borne Disease Control Programme (NVBDCP) so far in 2017. Of all the state and union territories, the maximum number of dengue cases have been reported in Kerala (16530), followed by Tamil Nadu (6919) till 20th August. Considering the annual status of Dengue Burden in India, 129166 cases and 245 deaths occurred in the year 2016. In Odisha, the number of cases was 8380 with 11 deaths reported in 2016 and 455 cases with 2 deaths occurred till 20th August 2017.[4]

Dengue can cause broad range of clinical manifestations including asymptomatic infection, mild flu-like symptoms, and the more severe haemorrhagic fever. This syndrome is associated with 40–50% fatality if untreated or mistreated.

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When properly treated, the case fatality can be reduced to 5% or less.[5] Even though there is no specific treatment for dengue/severe dengue, early detection and access to proper medical care can lower case fatality rates below 1%.(3) Due to lack of vaccine or specific treatment, control and preventive measures need greater emphasis. Wide spread community awareness on control and prevention can halt its spread. Occurrence and spread of dengue involves urban & rural infrastructure development activities. Construction workers are at more risk of infection due to lack of sanitation and hygiene in their temporary settlements. Their perception about the disease causation and prevention influences vulnerability status of the workers and spreading potential of disease from one region along with migration of these workers. With this background, effort has been put to carry out a study with following objectives.

Objectives

To assess the knowledge on different aspects of dengue among the study population and to assess their knowledge on preventive methods.

MATERIALS AND METHODS

Study Design

A Cross- Sectional study.

Study Area

The study was carried out among workers of L&T Company working in MKCG Medical College Campus, Berhampur.

Study Period

One month period (June 2017) adopting convenient sampling. Prior to that, IEC approval and verbal consent from authority (L&T) and study population were obtained.

Data Collection

Data was collected from participants with personal interview, using a scientifically designed semi-structured pretested questionnaire.

Study Participant

216 cases were taken as study participants. They were workers of L&T Company, working for construction of buildings of medical college.

Analysis

Data was analysed in the Department of Community Medicine, MKCG Medical College.

RESULTS

Profile	Category	Number	Percentage
Age	18-25	64	29.6
	26-40	92	42.5
	>40	60	27.7
Religion	Hindu	142	65.7
	Muslim	74	34.2
SES	BPL	128	59.2
	APL	88	40.8
	Others		
Residence	Rural	184	85.2
	Urban	32	14.8
State	Odisha	92	42.5
	Others (West Bengal, Jharkhand, Chhattisgarh)	124	57.5
Type of work	Construction worker	116	53.7
	Supply worker	60	27.9
	Official	28	12.9
	Waste disposal	12	5.5

Table 1. Sociodemographic Profile (n=216)

Disease Transmission	Number	Percentage
Mosquito bite	216	100
Mosquito bite at day time	104	48.1
Drinking dirty water	32	14.8
Unhygienic food	41	19
Houseflies	12	5.5
Signs and Symptoms		
Fever	216	100
Nausea/Vomiting	102	47
Bleeding	19	8.7
Muscular pain	86	39.8
Headache	88	40.7
Rash	15	6.9
Treatment		
Hospital	194	89.8
Home	3	1.4
Traditional practice	19	8.7
Preventive Methods		
Mosquito Mat/Coil/Liquid Vapouriser	190	87.9
Mosquito Spray	186	86.1
Mosquito Net	43	19.9
Window & Door Screen	23	10.6
Cleaning House	84	38.
Cleaning of garbage/trash	67	31
Use of Smoke to drive away mosquitoes	31	14.3

Table 2. Awareness about Different Aspects of Dengue

Sources	Number	%
Radio	122	56
Television	68	31.4
Friends & Neighbours	46	21.2
Newspapers/Magazines	29	13.4
Health personnel	13	6
Schools	10	4.6
Brochures	2	0.9
Banners	1	0.4

Table 3. Source of their Knowledge

DISCUSSION

Out of total 216 study cases, majority (42%) were between age 26 to 40 years of age, mean age being 35. Majority (65.7%) were Hindu by religion, mostly (85%) from rural areas and 57% were from states other than Odisha. About 60% were from poor families who possess BPL card. By nature of work, 54% were construction workers followed by supply workers, others were officials and scavengers by profession.

All the workers had knowledge on dengue which was similar to study of Tyagi et al[6] and it was better than the studies of Bota R et al (94.6%),[7] Acharya et al (90%),[8] Irat A et al (89.9%),[9] S Jeelani et al (86%),[10] Degallier N et al (78%),[11] and Swaddiwudhipong W et al (67%).[12] Chinakalli et al showed in their study that majority of participants heard about dengue.[13] The cause of dengue as mosquito bite was known to all the participants in the present study. Similar

observation was made by Tyagi et al (100%) and M Ho et al (95.8%) where the participants knew that mosquito bite transmits this disease.[6],[14] It was also seen that majority (90.5%) of the respondents had a fair knowledge about the vector in study of Qureshi E et al.[15] 'Mosquito bite' is the most common cause of dengue mentioned by 68% and 60.6% of participants in the study of Khamis et al and Naik et al respectively.[16],[17] In the present study, prevalence of other faulty ideas like transmission of the disease by unhygienic food, drink and housefly were observed. However, in study of Anima H et al, 88% participants were unaware regarding the causative agent of disease.[18] 91.5% participants in study of Rehman A et al knew that dengue fever is caused by Aedes mosquito.[19] 58.6% of participants reported "Aedes mosquito" as a vector as per study of Bota R et al.[7] Forty eight percent participants in the present study knew about biting time i.e. day time, similar to Bota et al where 52.2% participants could tell the time[7] and much less (24%) observed by Chinakali et al.[13]

Assessing the awareness on symptoms of dengue, fever as the symptoms was known to all of them. But in study of Jeelani S et al, 59% could tell fever is the commonest symptom.[10] Prolonged high fever was mentioned as the symptoms by most of the participants as observed by Bota R et al[7] and other studies conducted in Brazil,[11] Hong Kong,[14] Pakistan,[15] Northern Thailand, Cambodia. In the study of Queresi N et al, high grade fever was mentioned by 41.4% as the most common and obvious symptoms.[15] Even in the study of Haldar A et al, 27.9% of the respondents were not aware about other signs and symptoms of the disease except fever (68.9%).[18] Dengue specific symptoms of bleeding and rash, were mentioned by only 2% and 11% of the study participants, respectively in the study of Chinakali P et al.[13] Bleeding from any site as a symptom was mentioned by few of them. Insufficient knowledge on symptoms, was found in the present study, as vomiting (47%), muscular pain (40%) and headache (40%) were also mentioned by few of them. It is similar to study of Bota R et al where muscular pain (39.6%), bleeding and headache (41.35%), nausea and vomiting (44.75%) were mentioned by the participants. [7] In other studies, awareness about fever, body ache and shivering were mentioned as dengue symptoms, by 93.5%, 85.3% and 83% respectively and least mentioned symptom was nausea and vomiting (74.2%).[19] In the study of Taksande & Lakhkar (2012) et al, only 8.04% and 0.97% of participants told the muscular pain and nausea/vomiting as the symptoms of dengue.[20] Bleeding and rashes were other common symptoms mentioned in the study of Itrat A et al.[9] Benthem et al reflected in their study, rash or bleeding is a specific symptom of dengue infection and not common in other febrile illnesses indicating that the majority of people can distinguish dengue infection from other diseases.[21] Naik et al reported in their study that 34.9% of the respondents were not aware of symptoms of DF.[17]

In the present study, mosquito coil/mats are preferred by most of the participants (82%) to prevent mosquito bite and dengue prevention. In the study of Khun S et al, mosquito spray (86%) and mosquito mat/coil/liquid vapourisers (88%) were mentioned as preventive method. In other studies, majority (70.3%) knew about mosquito repellents like mat/liquid vapouriser/coils.[22] Community respondents (40.7%) were relying on the insecticidal sprays to prevent mosquito bites as observed by Quresi N et al.[15] Fradin MS et al and Jelinek T et al found in their study that preventive measures preferred were use of mosquito sprays and coils.[23],[24] Keeping environment clean (71%), application of insecticidal cream (48%), use of smoke (34%), liquidator (30%), covering body with clothing (26%) and mosquito net (23%) are different other methods mentioned in present study. Also filling of the ditches (70%) & proper garbage disposal (22%) & proper disposal of unused container (8%) were mentioned to be the preventive measures of mosquito breeding mentioned by the participants, More than half (55.7%) mentioned "Cleaning of the house" as an important preventive practice, and other preventive measures cited were prevention of water stagnation (46.5%), insecticidal spray (42.8%), use of oil in cooler (31.9%) and mosquito net (26.6%) in Naik's study.[17] Nelliyanil et al[25] observed mosquito net (45%) was the most common method used for mosquito bite prevention followed by coil. In Brazil, elimination of water containers was the most efficient means of control of DF according to 73% of people.[11] A survey of KAP of the prevention of DHF in an urban community of Thailand reported that covering water containers was the most common practice to prevent mosquito breeding in drinking-water containers.[13] However, this type of knowledge is minimal in present study which needs improvement. Naik et al observed that only 51.36% were aware of preventive measures for DF.[17] 30.4% were aware regarding one or more means of preventive measures.[18]

In the present study, radio was the major (56%) source of information. Television (31.4%), friends and neighbours (21%) and newspapers/magazines (13%) are other important sources of information about dengue for them. It is similar to the studies from South Delhi, East Delhi and Kuala Lumpur,[6] [25] [26] but contrast to the study of Chinakali et al, where television was the most important source of information (54.9%).[13] Qureshi et al observed 60.7% reported TV/radio both as the major source of knowledge about dengue.[15] In study of Acharya et al,[8] important sources of information about dengue were television (59%), health personnel (38%), friends and neighbours (30.5%) and schools (8.32%). Unfortunately, health personnel constitute 6% of the source in present study. It is also much less than the study of Sayabhang et al study where health personnel as a source were 31.88% Role of media like magazines (22%) and newspapers (16.47%) was more among them except the radio (5%) which is very low in comparison to present study.[26] Also newspaper was the important source (85%) of information in case of study of Khamis et al.[16] In study of Sayavong et al, local television (88.89%) and radio (65.70%) were mentioned by the participants.[26] In Haldar A et al study about the sources of information regarding signs and symptoms of the disease, majority got the information from the mass media (65%), on mode of transmission and prevention of disease, sources (19%) like relatives, neighbours, elder members of the family, etc., about the aetiology, vectors and facts of the disease; 9% got the information from the health personnel; 7% of the respondents did not get any information from any sources. [18]

CONCLUSION

Low prevalence of knowledge on dengue was observed in the present study population. Perception on dengue, mode of

transmission was adequate though some faulty thinking regarding transmission was observed. Knowledge regarding time of bite, signs and symptoms other than fever and preventive measures was much far from satisfactory. Preventive measures mentioned by them mostly focused towards protection from mosquito bites during night time. Awareness about avoiding day time bite by wearing full, light coloured, loose clothing during day was less. Source of knowledge is deficient and not oriented towards prevention of mosquito bite during day time. Inadequate knowledge is a deterrent to preventive practice of dengue.

Recommendation

Elimination of mosquito breeding place in the house and at workplaces should be promoted. Observation of national dengue day on May 16th should be sincerely observed. Area and risk specific plans should be developed and implemented. Behavioural change communication should be utilised to transform the knowledge into practice.

Limitation

The questionnaire, though pretested, was not validated. The above observations may be true only for the study population because of convenience sample and cannot be generalised.

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