A CROSS SECTIONAL STUDY OF AWARENESS IN MALARIA AND DENGUE - A CASE STUDY OF NASHIK CITY (MAHARASHTRA)

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ABSTRACT:

There are several tropical mosquito borne infections. Malaria and dengue are the two common mosquito infections that are very important and cause high morbidity and mortality in every part of the world. Malaria is spread by Anopheles mosquitoes. It's caused by a parasite called Plasmodium. When an infected mosquito bites us this parasite enters in to our body and goes to liver where it affects red blood cells. While dengue is a mosquito borne viral infection it's also called break bone fever in severe cases it changes in to life threatening dengue hemorrhagic fever, resulting in low level of platelets, low blood pressure and bleeding occurs. In this research paper we hereby to know the awareness of malaria and dengue to the people of Nashik city

Keywords: Malaria, Dengue, awareness, socio-economic burden

INTRODUCTION:

Malaria and dengue are the two common mosquito infections that are very important and cause high morbidity and mortality for many patients around the world. Malaria causes symptoms that typically include fever, fatigue, vomiting and headaches. In severe cases it can cause yellow skin, seizures, coma or death. The disease is transmitted by the biting of mosquitos, and the symptoms usually begin ten to fifteen days after being bitten. And Dengue fever is a mosquito-borne tropical disease caused by the dengue virus Symptoms typically begin three to fourteen days after infection. This may include a high fever, headache, vomiting, muscle and joint pains, and a characteristic skin rash Recovery generally takes less than two to seven days.

Both 'malaria' and 'dengue' are known to be rapidly spreading mosquito-borne diseases and of high importance in terms of both mortality and morbidity, posing a worldwide public health problem. Therefore in this research paper we hereby to know the knowledge about malaria and dengue

OBJECTIVE: The objective of this study is to evaluate knowledge of dengue and malaria difference sector wise to measure the outcome of Nashik city.

METHODOLOGY:

A cross-sectional study assessing the knowledge, attitude and preventive practices regarding malaria and dengue was performed among citizens of the sample study area during January-December 2015. A questionnaire in local Marathi language was used for a face-to-face Unprompted interview with 240 persons of six sectors in Nashik city i.e. twenty men and women from each sectors. The collected data were analyzed and we mentioned the social awareness of study area Nashik city is divided into six sectors viz. I) Nashik East II) Nashik West III) Panchavati IV) Cidco V) Nashik Road and VI) Satpur. The total population of this sectors are 10, 77,236 out of that maximum population 214950 was Panchavati sector and second largest populated sector was Cidco and lowest populated sector was Nashik East (165423). Our aim was to identify the difference of general knowledge of both diseases between people of different ages.

Table 1 : Awareness on malaria & dengue spread, symptom and treatment

Sectors	Nashik East		Nashik West		Panchavati		Satpur		Cidco		Nashik Road		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Awareness of Malaria & Dengue														
Yes	40	100	39	97.50	38	95.00	35	87.50	39	97.50	38	95.00	229	95.41
No	0	0.00	1	2.50	2	5.00	5	12.50	1	2.50	2	5.00	11	4.58
Is Malaria & Dengue Transmissible?														
Yes	38	95.00	40	100	39	97.50	37	92.50	40	100	39	97.50	233	97.08
No	2	5.00	0	0.00	1	2.50	3	7.50	0	0.00	1	2.50	7	2.91
Malaria-Mode of spread														
Mosquito bite	22	55.00	16	40.00	25	62.50	24	60.00	24	60.00	26	65.00	137	57.08
Fly bite	6	15.00	8	20.00	5	12.50	7	17.50	6	15.00	2	5.00	34	14.16
Dirty drinking water	4	10.00	8	20.00	5	12.50	4	10.00	7	17.50	9	22.50	37	15.41
Pure water	1	2.50	0	0.00	0	0.00	1	2.50	1	2.50	0	0.00	3	1.25
Unhygienic food	6	15.00	7	17.50	4	10.00	4	10.00	1	2.50	1	2.50	23	9.58
No idea	1	2.50	1	2.50	1	2.50	0	0.00	1	2.50	2	5.00	6	2.50
Dengue-Mode of spread														
Mosquito bite	25	62.50	29	72.50	25	62.50	20	50.00	24	60.00	26	65.00	149	62.08
Fly bite	5	12.50	2	5.00	4	10.00	7	17.50	3	7.50	2	5.00	23	9.58
Dirty drinking water	2	5.00	1	2.5.	3	7.50	4	10.00	8	20.00	2	5.00	20	8.33
Pure water	1	2.50	4	10.00	5	12.50	4	10.00	1	2.50	8	20.00	23	9.58
Unhygienic food	0	0.00	0	0.00	1	2.50	0	0.00	1	2.50	1	2.50	3	1.25
No idea	7	17.50	4	10.00	2	5.00	5	12.50	3	7.50	1	2.50	22	9.16
Common symptoms of Malaria														
Fever	29	72.50	30	75.00	27	67.50	31	77.50	26	65.00	33	82.50	176	73.33
Nausea	1	2.50	3	7.50	4	10.00	2	5.00	5	12.50	1	2.50	16	6.66
Headache	4	10.00	2	5.00	1	2.50	2	5.00	4	10.00	1	2.50	14	5.83
Body aches	1	2.50	2	5.00	0	0.00	1	2.50	3	7.50	2	5.00	9	3.75
Vomiting	1	2.50	0	0.00	1	2.50	0	0.00	1	2.50	0	0.00	3	1.25
Shivering	0	0.00	2	5.00	3	7.50	2	5.00	0	0.00	1	2.50	8	3.33
Rashes	1	2.50	0	0.00	1	2.50	0	0.00	1	2.50	0	0.00	3	1.25

No idea	3	7.50	1	2.50	3	7.50	2	5.00	0	0.00	2	5.00	11	4.58
Common symptoms of Dengue														
Fever	26	65.00	29	72.5	28	70.00	25	62.50	30	75.00	26	65.00	164	68.33
Nausea	4	10.00	2	5.00	3	7.50	1	2.50	2	5.00	3	7.50	15	6.25
Headache	1	2.50	1	2.50	2	5.00	3	7.50	2	5.00	2	5.00	11	4.58
Body aches	1	2.50	0	0.00	1	2.50	2	5.00	1	2.50	3	7.50	8	3.33
Vomiting	0	0.00	0	1.00	1	2.50	1	2.50	1	2.50	1	2.50	4	1.66
Shivering	1	2.50	1	2.50	0	0.00	2	5.00	1	2.50	1	2.50	6	2.50
Rashes	6	15.00	5	12.50	4	10.00	3	7.50	2	5.00	4	10.00	24	10.00
No idea	1	2.50	2	5.00	1	2.50	3	7.50	1	2.50	0	0.00	8	3.33
Name the vector of Malaria														
Female Anopheles	3	7.50	0	0.00	2	5.00	1	2.50	4	10.00	4	10.00	14	5.83
Male Anopheles	2	5.00	0	0.00	3	7.50	0	0.00	2	5.00	1	2.50	8	3.33
Culex	0	0.00	2	5.00	1	2.50	0	0.00	0	0.00	0	0.00	3	1.25
Aedes mosquito	0	0.00	1	2.50	1	2.50	3	7.50	1	2.50	1	2.50	7	2.91
No idea	35	87.50	37	92.50	33	82.50	36	90.00	33	82.50	34	85.00	208	86.66
Name the vector of Dengue														
Female Anopheles	2	5.00	1	2.50	3	7.50	2	5.00	4	10.00	4	10.00	16	6.66
Male Anopheles	1	2.50	2	5.00	3	7.50	0	0.00	1	2.50	3	7.50	10	4.16
Culex	0	0.00	1	2.50	1	2.50	2	5.00	0	0.00	0	0.00	4	1.66
Aedes mosquito	8	20.00	6	15.00	5	12.50	9	22.50	8	20.00	9	22.50	45	18.75
No idea	29	72.50	30	75.00	28	70.00	27	67.50	27	67.50	24	60.00	165	68.75
Medicines against Malaria														
Chloroquine	3	7.50	4	10.00	4	10.00	5	12.50	5	12.50	2	5.00	23	9.58
Quinine	1	2.50	0	0.00	0	0.00	0	0.00	0	0.00	1	2.50	2	0.83
Other	0	0.00	1	2.50	0	0.00	1	2.50	2	5.00	0	0.00	4	1.66
No idea	36	90.00	35	87.50	36	90.00	34	85.00	33	82.50	37	92.50	211	87.91
Medicines against Dengue														
Chloroquine	0	0.00	1	2.50	2	5.00	0	0.00	1	2.50	0	0.00	4	1.66
Quinine	0	0.00	1	2.50	0	0.00	0	0.00	2	5.00	0	0.00	3	1.25
Dengvaxia	0	0.00	0	0.00	4	10.00	0	0.00	1	2.50	0	0.00	5	2.08
No idea	40	100	38	95.00	34	85.00	40	100	36	90.00	40	100	228	95.00
Malaria is a/an														
Ordinary diseases	21	52.50	26	65.00	24	60.00	22	55.00	28	70.00	27	67.50	148	61.66
A deadly diseases	6	15.00	4	10.00	10	25.00	9	22.50	6	15.00	2	5.00	37	15.41
No idea	13	32.50	10	25.00	6	15.00	9	22.50	6	15.00	10	25.00	54	22.50
Dengue is a/an														
Ordinary diseases	8	20.00	1	2.50	2	5.00	4	10.00	0	0.00	1	2.50	16	6.66
A deadly diseases	30	75.00	38	95.00	37	92.50	35	87.50	35	87.50	38	95.00	213	88.75
No idea	2	5.00	1	2.50	1	2.50	1	2.50	5	12.50	1	2.50	11	4.58

RESULT:

Resultant data from questionnaire carefully evaluate and interpreted on table 1 which clearly reveals the facts that there's huge lack in sufficient knowledge of dengue and malaria difference and prevention control in different age group Total 240 interviews were conducted including 50% males and 50% females. Among the subjects, majority (59.09%) belonged to the age group of 26–40 years of the respondents. And lowest age group (4.92) of above 65. Educational level was the different age group illiterate (3.75) primary level (24.58) secondary level (44.16) and 27.5 percent age group were graduate level. Monthly income of people below Rs. 5000 were 1.66 were lowest income group. Ranged between Rs. 5000–10000 were 16.25 percent. Ranged between Rs.10000- 15000 were 26.66 percent. And the highest income groups were 29.58 percent and the ranged between Rs. 15000 to 20000. And the last income groups above 20000 were 25.83 percent. The main based of sample study area, Table 7.3 describes the Awareness on malaria & dengue spread, symptom and treatment.

Data revealing the awareness of malaria and dengue transmission, its symptoms and treatment were shown the Majority (95.41 %) of the respondents had heard about malaria and dengue and most (97.08 %) of them believed that the disease was transmissible. When asked mode of spread about malaria 57.08 % people answered Mosquito bite. 14.16% peoples Fly bite, Dirty drinking water (15.41%), pure water (1.25%), Unhygienic food (9.58%) and 2.50% peoples have no idea to mode of spread about malaria and same question asked mode of spread about dengue (62.08%), (9.58%), (8.33%), (9.58%), (1.25%), and (9.16%) respectively When asked about the common symptoms of malaria , fever 73.33%, Nausea 6.6%, Headache 5.83%, body aches 3.75%, vomiting 1.25%, shivering 3.33%, rashes 1.25% and 4.58% peoples have no idea. Same question asked about the common symptoms of dengue de of spread about dengue fever 68.33%, Nausea 6.25%, Headache 4.58%, body aches 3.33%, vomiting 1.66%, shivering 2.50%, rashes 10.00% and 3.33% peoples have no idea.

Table showed also vector of malaria and dengue people have inadequate knowledge about vector malaria and dengue because 86.66 and 68.75 % people have no idea about vector of malaria and dengue. And inadequate knowledge about medicines against malaria and dengue 87.91 % peoples have no idea about medicines against malaria and 95% peoples have no idea about medicines against dengue. 61.66% answered malaria is an ordinary diseases. 15.41% peoples told a deadly diseases and 22.50 % peoples no knowledge. While 6.66% peoples told dengue is a ordinary diseases, 88.75% peoples answered dengue is a deadly diseases and 4.58 % peoples have no idea dengue vectors.

Data showing the extent of knowledge regarding vector breeding sites, mosquito bite time and preventive practices is presented of malaria and dengue in Table 7.4 About (23.33%) of those were told running dirty water, Garbage/Trash (10%), Standing clean water (6.25%), Standing Dirty water (37.91%), Running

clean water (4.58%), Plants/vegetation (14.16%), and 3.75% peoples have no idea regarding vector breeding sites of malaria. While same question asked regarding dengue breeding sites. (14.58%) of those were told running dirty water, Garbage/Trash (17.08), Standing clean water (32.50%), Standing Dirty water (15.83%), Running clean water (2.91%), Plants/vegetation (12.08%), and 5% peoples have no idea regarding vector breeding sites of dengue. Most of the people told that the mosquito usually bites either at night (72.08%) or at sunset/dusk (18.75). Knowledge of preventive measures as characterized as (1) use of smoke to drive away mosquitoes (14.16%), (2) use of mosquito mat, coils, liquid vaporizer (30 %), (3) mosquito spray (34.16%) (4) Use of fan (3.75%), and (5) mosquito net (25.83%) as a most common choices for prevention. Regarding eradication of breeding sites of mosquitoes were majority of the respondents had no ideas (26.66%).

The lists the distribution of preventive practices against malaria and dengue favor. Hereby, majority of the respondents relying on, Mosquito spray (20%) and Mosquito mat, coils, liquid vaporizer use (18.75%) then 13.75% peoples used mosquito net and use of fan to drive away mosquitoes.

A Source of information on various aspects of malaria and dengue favor. News paper and Television was identified as the major source of public information (31.25%) and (30.41%) respectively. Second was Health professional (12.50%), Magazine (8.33%) then Advertisement/Banners, schools, colleges/universities, relatives/friends/families, internet and other were considered as a source of information.

1. DISCUSSION

Analysis of the data shows lack of knowledge regarding mosquito and mosquito borne diseases. Similar observations were recorded by (Collins *et al*., 1997) illiteracy level was high among respondents, which leads to lack of awareness. The respondents were found to have knowledge that malaria and dengue is a mosquito borne disease but they had misconception about malarial dengue vector and its breeding sites. Awareness regarding malarial and dengue vector and breeding preferences should be created to control the vector breeding. Majority of respondents had no idea about malarial and dengue vector and commonly available medicines in the market. A few respondents had suffered with malaria in past and showed knowledge about medicines. The majority respondents were depended on use of smoke to drive away mosquitoes; mosquito mat, coils, liquid vaporizer and fan were also used to drive away mosquitoes. Use of personal or household protection methods are indicators of socio-economic status which in itself has been reported as an important factor associated with malaria (Singh *et al.,* 1998), because low or moderate income reduces the facilities in house for protection against mosquito. While estimating the impact of media in generating awareness, it was observed that television, friends/relatives and newspaper are the

most potential media to cater information about malarial awareness. Thus, it is suggestive that these media should be utilized to generate mass awareness in communities.

Key facts

- Dengue and malaria is a mosquito-borne viral infection.
- About half of the world's population is now at risk due to dengue and malaria.
- Severe dengue and malaria is a leading cause of serious illness and death among children in some African, Asian and Latin American countries.
- There is no specific treatment for dengue/ severe dengue and malaria, but early detection and access to proper medical care lowers fatality rates below 1%.
- Dengue and malaria prevention and control solely depends on effective vector control measures.
- The global incidence of dengue and malaria has grown dramatically in recent decades.
- Dengue and malaria is mostly found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas.
- The infection causes flu-like illness, and occasionally develops into a potentially lethal complication called severe dengue and malaria.

Recommendations:

1. Awareness about Dengue & malaria is the better option to control vector breeding. The better awareness can be achieved through the coordinated approach of concerned Govt. organizations and stakeholders by organizing awareness campaigns and active participation of print and electronic media. Also there is a need to educate the health workers and Municipal personnel etc regarding VBDs.
2. Malaria & Dengue are emerging as important causes of acute febrile illness in tropical countries. They are also life threatening diseases with high mortality, if not diagnosed & treated early. In addition, co-infection of malaria & dengue can occur. Unless data of these diseases from various parts of the country (both urban & rural) are available, awareness will not have the necessary impact. Data will become available only, if diagnostic tests are easily available & is analyzed to evolve more relevant & practical guidelines for management & prevention. It is also essential to evaluate the sensitivity & specificity of these diagnostic tests. Both are vector borne diseases, which are preventable by community. Preventive health is as important as health care. If health care is given importance, in which treatment of malaria & dengue is given priority over prevention, it would be difficult to control these diseases. Awareness of society is the only solution & they should take responsibility for prevention.

2. CONCLUSION

Dengue fever is an infectious disease caused by mosquito bite and caused by any of four related dengue virus. This disease is used to be called break bone fever. Because it sometime cause severe joint and muscle pain that feel like bones and breaking where as malaria is a mosquito borne infectious disease of human caused by parasite protozoan belonging to genus plasmodium. The diseases are transmitted by biting of mosquito and the symptoms usually begin ten to fifteen days after being bitten. This study aimed to find out the awareness of dengue and malaria in public according to the different ranges of ages After careful consideration from this survey we have concluded that people have very adequate awareness about malaria and dengue. This is the time to evoke a sense of moral indignation at unnecessary suffering and for the leadership to mobilize human will power and resources to take on the task of controlling emerging infection disease like malaria and dengue. Therefore to provide awareness in people by using media source like internet, television, by using hand out pamphlets by discussing with each other and most important to organize seminars, workshops and conferences in different schools, colleges and universities. Malaria and dengue prevention and control is a shared responsibility. Unless, everybody imparts their role, dengue and malaria will not be controlled.

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