

Assessment of Mass Level Public Awareness Campaigns Regarding Dengue among Parents Visiting Tertiary Care Children Hospital Karachi, Pakistan

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ABSTRACT

OBJECTIVE: To assess the impact of mass level public awareness campaigns regarding dengue fever among parents visiting tertiary care children hospital Karachi.

METHODOLOGY: A descriptive cross sectional survey was conducted among parents visiting medical outpatient department at National Institute of Child Health, Karachi from 1st January to 31st December, 2014. Total of 400 respondents were interviewed using simple random sampling technique. Pre coded semi structured proforma consisting of dengue specific symptoms and safety measures were used. After interview, every individual was educated regarding preventive and safety measures against dengue fever.

RESULTS: Out of 400 respondent, 68% (n=272) were males and 32% (n=128) females. Almost 98% (n=392) knew that dengue fever is caused by mosquito bite. More than two-third of study participants were not aware about dengue specific symptoms. Awareness regarding retro-orbital pain was reported by 1% only. Use of anti mosquito mats, coil and other repellants was reported by 88%. Use of mosquito nets was only 3.5%. Electronic media was the major (89%) source of information regarding preventive measures of dengue in our study population.

CONCLUSION: It is concluded that awareness of target population about dengue specific symptoms and effective preventive measures remains very low. It suggests to revisit the existing awareness related interventional strategies at public level with contextual relevance to enhance overall impact from preventive aspect.

KEYWORDS: Dengue fever, Safety, dengue specific symptoms, awareness.

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INTRODUCTION

Dengue is one of most rapidly spreading mosquito born viral infection affecting human population worldwide. The world Health (WHO) anticipated that more than 2.5 billion of world population are at serious threat of dengue infection¹. In south Asian region, an average increase in Dengue fever (DF) and Dengue hemorrhagic fever (DHF) is reported with more than 12,000 deaths so far¹⁻³. Recent trend is rapid increase of DF cases in pediatric population from 25% in 2006 to 43% in our neighbor country⁴. The reasons of high endemicity in most of countries including Pakistan are multiple dengue virus serotypes, vector progression and low awareness regarding vector control. Peak incidence of dengue cases reported in the rainy season mainly⁵.

DF is caused by mosquito bite at specific time such as

early morning and sunset. It clinically presents with fever, headache, generalized body aches, muscular pain, retro orbital pain, skin rashes of various types. DHF is most severe form and presents with bleeding from different sites of body. The patient's age is also identified as one of the important contributing factor in progression of DF⁶⁻⁷. The median of age of DF is decreased and younger population particularly children and adolescent are more susceptible. At initial stage DF is not considered deadly but advance stages including DHF and dengue shock syndrome can lead to mortality⁸⁻¹¹

Since 1992, Pakistan has faced multiple out breaks of DF including outbreak in Karachi (2005), Azad Jammu & Kashmir (2006). In 2010 more than 26,000 people were infected in Pakistan; however it is the colossal outbreak in Punjab (2011) which shifted the focus of

Government of Pakistan on dengue as one of the emerging public health issue, especially in the Punjab province¹²⁻¹⁴. In 2013 more than 6,300 dengue cases were reported from Swat, Khyber Pakhtun-khwa Province during monsoon period¹⁵⁻¹⁶. In Pakistan, first outbreak of DHF was reported in 1994¹⁷⁻¹⁸. In 2005-6, out of more than 3640 cases of DF patients, forty deaths were reported in which 37 were from Sindh province. Since 2010-11, massive awareness campaigns were financed and initiated by regulatory authorities at public level throughout the country on different forums including print and electronic media to curtail the incidence of DF¹⁹⁻²⁰.

Considering that children are more at risk of DF and parents as gate keepers at home play vital role in child development; awareness of parents ultimately benefits children and other dependents. This study was conducted to see the impact of mass level campaigns regarding DF, dengue specific symptoms and safety measures among parents visiting tertiary care children hospital Karachi. The didactic intercession with parents were also facilitated to provide knowledge and awareness regarding dengue.

METHODOLOGY

A descriptive cross sectional study conducted to determine the awareness regarding dengue fever's symptoms and preventive methods among parents at tertiary care children hospital of Karachi from January 2014 to December 2014. A Sample size of 400 was calculated on the basis of previous study where 38.5% of the sample population had sufficient knowledge about dengue³. Sample size was calculated at 95% confidence Interval with 5% precision, using EPI software version 6. After getting informed written consent, face to face interview was conducted. Parents who failed to respond all questions or left before the interview were excluded. The simple random sampling approach was used for data collection to select a target population representing each member of the same group of people with equal chance of being chosen. After filling questionnaire each respondent was provided a verbal information about symptoms of DF, mode of spread and preventive measures against the disease. Data was entered and analyzed in statistical package for social science (SPSS-17). The results are presented in frequencies and percentages only. However mean and standard deviation (SD) is calculated for quantitative variables.

RESULTS

Out of 400 respondents, 68% (n=272) were males and 32% (n=128) were females. Male to female ratio was 2.1:1. Mean age of participants was 36.4 years. Almost 94% (n=376) were married and 2.75% (n=11) were widow / divorced participants. Around two third 70% (n=280) participant were residents of Karachi, while 30% (n=120) from other cities and slums. Socio-demographic data of respondents including education status, family income and ethnic group is highlighted in Table I.

All (100%) study participant had heard about DF. Almost 98% (n=392) knew that DF is caused by mosquito bite. Only 52% study population believed that dengue is a treatable disease. It was recorded that around 10% of respondents had previous exposure of DF in their families. Awareness regarding commonly known symptoms of dengue in our study group includes; Fever and headache 63.25% (n=253), followed by muscular pain (17.25%), Nausea / vomiting 11.75% (n=47), bleeding 10% (n=41), rash (7.25%) and retro-orbital pain (1%) as presented in Figure I. Majority 56% (n=224) of participant reported about bite time of dengue is night, 22% (n=88) sunset, 12% (n=48) morning and 8% (n=32) were in believe that the bite time is noon. More than 65% (n=261) our participant shared that dengue mosquito lay egg in clean stagnant water. The common breeding sites were used tyres 60.25% (n=241), followed by Flowers / vegetables 19.5% (n=78), unused toilets 9.75% (n=39), River / canals 5.25% (n=21), and used cans / bottles 3.75% (n=15) as shown in Table II.

The preventive measure used were mosquito mats, coils and other vector repellants by 88% (n=352), followed by window & door covered with nets 6.5%, mosquito net by 3.5%, and cleaning of garbage by 2%. Majority of participant 60% (n=240) said that covering containers method might be most reliable to stop dengue. More than 4% believed that avoiding water stagnation can prevent dengue, 2% for cutting trees, 12% for changing water in storage tank, and 10% for cover over head of under water tanks. Majority of participant 89.25% (n=357) were told that the information about dengue was received from television, 4% from newspaper, 4.75% from health professionals and only 2% received information regarding dengue from friends.

TABLE I: DEMOGRAPHIC CHARACTERISTIC OF STUDY PARTICIPANTS

Socioeconomic Indicator	Overall (n=400)		Male (n=272)		Female (n=128)	
	n	%	n	%	n	%
Education						
Illiterate	112	28	88	32.35	24	18.75
Primary	144	36	91	33.45	48	41.41
Matriculation	76	19	43	15.8	31	25.78
Inter	48	12	32	11.76	16	12.5
Graduation	13	3.25	11	4.04	2	1.56
Postgraduate	7	1.75	7	2.6	0	00
Family income						
<10000	216	54	157	57.72	59	46.1
10001-20000	165	41.25	104	38.26	61	47.65
20001-30000	16	4	8	2.94	8	6.2
>30000	03	0.75	3	1.1	00	00
Ethnic group						
Urdu speaking	168	42	96	35.29	72	56.25
Sindhi	144	36	96	35.29	48	37.5
Pashto	56	14	48	17.65	8	6.25
Punjabi	8	2	8	2.94	0	00
Balouchi	24	6	24	8.82	0	00
Address						
Metropolitan city	280	70	192	70.59	88	68.75
City	96	24	64	23.53	32	25
Village	24	6	16	5.88	8	6.25

FIGURE I: AWARENESS ASSESSMENT REGARDING COMMON AND DENGUE SPECIFIC SYMPTOMS

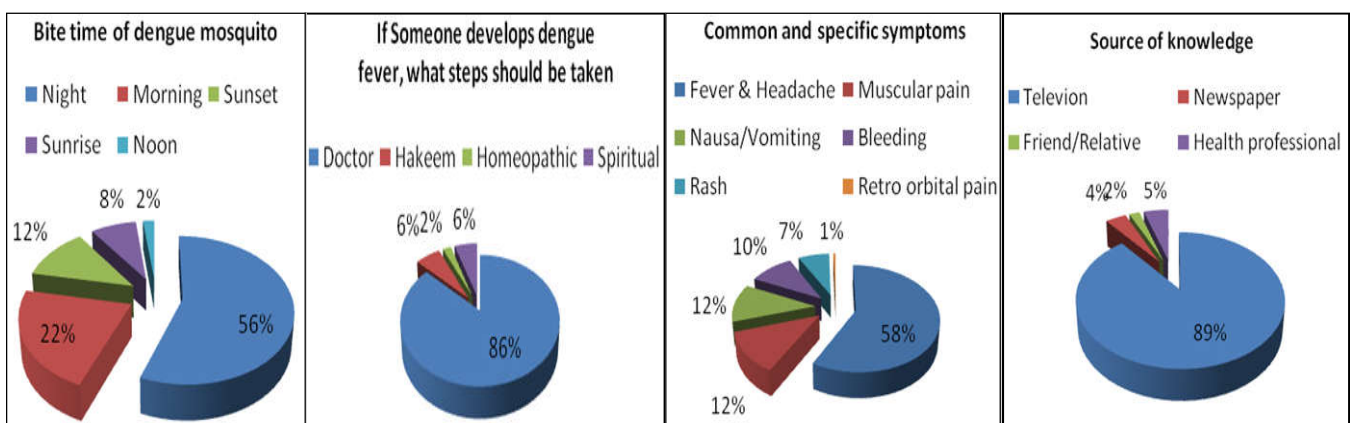


TABLE II: AWARENESS ABOUT EPIDEMIOLOGICAL PARAMETERS OF DENGUE

Variables	Frequency	
	N	%
Knowledge about dengue fever		
Yes	400	100
No	00	00
Spread / rout of infection		
Mosquito bite	392	98
Don't know	08	02
Family member suffered from dengue fever		
Yes	38	9.5
No	362	90.5
Is dengue preventable?		
Yes	208	52
No	192	48
Mosquito lay eggs in		
Stagnant clean water	261	65.25
Running dirty water	64	16
Running clean water	56	14
Stand dirty water	8	2
Don't know	11	2.75
Breeding sites of Mosquito		
Used Tyres	241	60.25
Flowers/Vegetables	78	19.5
Unused Toilets	39	9.75
River/Canals	21	5.25
Used cans/bottles	21	5.25
Possibility of destroying breeding sites		
Yes	374	93.5
No	26	6.5
Preventive measures against dengue		
Mosquito Mat / Spray	335	83.75
Mosquito repellent / Cream	17	4.25
Window & Door covered with nets	26	6.5
Mosquito Net	14	3.5
Cleaning of garbage/ removing of stored waste	8	2

DISCUSSION

This study reveals poor awareness regarding dengue specific symptoms, timing of vector bite and effective preventive measures against the dengue fever in targeted study population. Considering the fact that DF being a public health problem of Pakistan, current study reflects poor impact of awareness programs for the general public.

The awareness regarding DF and its vector is almost 100% in our study population, which is relatively higher than reported work from Pakistan and India.^{4,8} However awareness regarding dengue specific symptoms including; muscular pain (17.5%), bleeding (10%), rash (3.5%) and retro-orbital pain (1%) remains lower than published work¹⁰. Despite the efforts taken by regularity authorities, the use of mosquito net is reported very low (3.5%), reflecting major gap in policy implementation of international donors and regularity authorities, it may be due to non contextualized approach. On the other hand use of mosquito spray, mats and other repellent was found higher (83%) which is an encouraging trend in the study population to reduce vector. Similar finding were found in recently published studies^{3,20}. Comparatively, higher percentage (60%) of respondents were knowing importance of covering water containers to prevent vector growth. However awareness regarding the timing of mosquito bite found very low. Published studies from Pakistan with different study population like college students and physicians showed insufficient knowledge, especially regarding safety measures against the mosquito bites⁹. Majority of participants (89.2%) received information about the DF by Television, 4.7% newspaper, 2% friends and 5% health professionals. These findings almost similar to other studies published in Pakistan.

Alarmingly, 10% respondent had past exposure of DF in their families, but even than their awareness level found low like others who do not give history of past exposure in their family. It is may be due to non-sustainability of effective awareness at mass level.

Despite aggressive mass level efforts regarding awareness of dengue specific symptoms and preventive measures, low level of awareness from current study suggests more extensive and evidence based strategies to combat dengue fever. If the impact of public awareness program against vector borne diseases is to be proved useful, the existing public awareness policy about dengue needs to be revised, in consultation with international agencies including WHO, UNICEF, in accordance with the contextual relevance and sustainability. The limitation of this study is that being single hospital based, the generalizability of the results is difficult.

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