

Knowledge, attitudes and practices (KAP) about dengue prevention among residents in Ratmalana Medical Officer of Health area

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Abstract—Dengue is contributing to considerable morbidity and mortality rates in Sri Lanka and that is one of the leading causes of illness in Western Province, where Colombo district has the highest number. This study was planned to assess KAP about dengue prevention among residents in Ratmalana Medical Officer of Health (MOH) area.

A descriptive cross sectional study was carried out during April to June 2016 among residents in Attidiya North in Ratmalana MOH area. An adult householder from every third house of the area was selected for the study. A pre-tested, structured, interviewer-administered questionnaire was used as the data collection tool which included four sections for socio demographic data, knowledge, attitudes and practices regarding dengue prevention. Data was analysed using descriptive statistics and SPSS 23 was used as the statistical software.

There were 312 participants for the study and 104 (33.3%) were males. Almost all the participants, (306, 98.1%) identified dengue fever as a mosquito borne disease while only 86 (27.6%) participants had correctly stated the features of the mosquito. Nearly 95% of participants stated that clear stagnant water is the breeding place of dengue mosquitoes. Further, 304 (97.4%) respondents had a positive attitude that dengue patients have a chance for a full recovery by immediate treatment.

There were 188 (65%) subjects who had participated in cleaning activities within 3 months before data collection. Further nearly three-fourth of them had cleaned inside the house as a mosquito control activity but only 19.1% were interested in cleaning outside the house and road to control mosquitoes.

The study concluded that the study subjects had satisfactory knowledge and favourable attitudes regarding dengue prevention, but their practices and participation in efforts at combating dengue outside their own premises was poor.

Keywords: KAP, dengue prevention, residents, Ratmalana MOH area

Introduction

Dengue fever (DF) is a flu-like illness, if persists can lead to the development of potentially fatal complication known as dengue Haemorrhagic Fever (DHF) that affects infants, young children and adults, but occasionally causes death (Zameer et al, 2013). There are four types of viruses (DENV-1, DENV-2, DENV-3, DENV-4) belonging to the *Flaviviridae* family. Infected *Aedes aegypti* and *Aedes albopictus* female mosquitoes that transmit the virus feed both indoors and outdoors during the day time. These mosquitoes grow well in areas with standing water, including puddles, water tanks, containers and old tires. Lack of reliable sanitation and regular garbage collection also contribute to the spread of the mosquitoes (WHO, 2016). It causes life threatening dengue haemorrhagic fever whose symptoms include headache, bleeding, low levels of blood platelets, and metallic taste in the mouth, low blood pressure, muscle joint pain and rashes (Shakil et al, 2015).

Today, severe dengue has become a leading cause of hospitalization and death among children in most Asian and Latin American countries (WHO, 2012). Preventable diseases such as dengue have the potential to cause the greatest mortality in a developing country like Pakistan (Itrat et al, 2008). Sri Lanka is at high risk of dengue fever. Conditions are suitable for the infection spreading and also arrive at epidemic proportion in different parts of the country which is associated with increased

morbidity and mortality each year. There are two peak seasons for the spreading of dengue epidemic in Sri Lanka each year: one is from May to July; another is from October to December. Sri Lanka has confirmed dengue cases nationally. Most affected cities include: Colombo, Gampaha, Kandy and Kalutara (Epidemiological News Bulletin, 2016).

During the 1st quarter 2015, 12,035 cases of DF/ DHF and 27 deaths were reported when compared to 15,140 cases of DF/DHF and 19 deaths reported during the 4th quarter 2014. The proportion of cases notified in January, February and March were 52.7%, 31.0% and 16.29% respectively (Quarterly Epidemiological Bulletin, 2015). The highest numbers of dengue cases were reported during the last week of January, 2015. During the last 9 months of the year 2016, 41,923 suspected dengue cases have been reported to the Epidemiology Unit from all over the island. Approximately 51.29% of dengue cases were reported from the Western Province. The highest numbers of dengue cases were reported during the third week of June, 2016 (Epidemiological Bulletin, 2016).

Dengue is contributing to considerable morbidity and mortality in Sri Lanka and is one of the leading causes of illness in the Western province, where Colombo district has the highest number. The Ministry of Health Sri Lanka regards vector control as a gold standard for the prevention of dengue outbreaks, although this effort is often constrained due to operational blockages with the lack of community support and involvement in vector control programmes. Therefore, it is essential to enhance knowledge about the community's perception about dengue as well as their vector control practices before and after the initiation of any community-based vector control programmes. This study aimed to assess knowledge, attitudes, and practices regarding dengue fever among a selected population in Ratmalana Medical Officer of Health (MOH) area, Sri Lanka.

The main objective of the study was to assess knowledge, attitudes and practices about dengue prevention among residents in a

selected community of Ratmalana MOH area. Specific objectives were to assess the knowledge regarding dengue fever, vector, breeding places, clinical features and prevention, to determine the attitudes towards dengue prevention and to evaluate practices regarding dengue prevention among community setting.

Methodology

This study was a cross sectional descriptive study carried out among residents of Attidiya North area of Ratmalana MOH area. Participants were selected for the study by using systemic sampling method. One householder was selected from one house. List of houses was taken from Divisional Secretariat and every 3rd house was selected randomly out of the list. A pre-tested, structured, interviewer-administered questionnaire was used as the data collection tool which included four sections for socio demographic data, knowledge, attitudes and practices regarding dengue prevention. Data was analyzed using descriptive statistics and SPSS 23 was used as the statistical software.

According to the sample size calculation the sample size was 323. But only 312 participated for the study due to 11 householders rejecting to participate. All residents in the selected area were included to the study and children less than 18 years and residents who were not willing to participate for the study were excluded from the study.

Results and Discussion

There were 312 participants in this study. The male (33.3%) to female (66.7%) ratio was 1:2 and total population was extended over suburban areas with different educational, economical and socio-cultural backgrounds. When considering the education level, out of 312 respondents, there were 143 (53.2%) who had education up to G.C.E. Ordinary Level (O/L) and 98 (31.4%) had educated up to Advanced Level and 0.6% were without any formal education. Most of the respondents (56.7%) belonged to middle class who earned 10,000-30,000 LKR monthly. A lesser number of

respondents (2.6%) had less than 10,000 LKR monthly income. Generally, all these respondents had a satisfactory educational level and monthly income.

According to the findings of this study, most of the respondents had satisfactory knowledge about dengue fever. Nearly 98% subjects knew the exact reason for spreading dengue, as mosquito bite. There was no significant association between the level of education and knowledge about DF transmission (p value, 0.21) as shown in Table 1. A research carried out in suburban area of Sri Lanka has reported that 76% respondents (Gunasekara et al, 2012), 88.5% in Malaysia (Hairi et al, 2003) and 93.5% respondents in Laos (Nalongsack et al, 2009) were aware that DF is transmitted by a mosquito vector.

Table 1; Knowledge on dengue transmission vs. level of education

Level of Education	Knowledge on DF transmission		
	High	Average	Low
Primary	15 (65.2%)	6 (26.1%)	2 (8.7%)
Up to GCE O/L	108 (75.5%)	29 (20.3%)	6 (4.2%)
Above	122 (83.6%)	20 (13.7%)	4 (2.7%)

Majority (95.2%) stated that clear stagnant water is the breeding place of dengue mosquitoes whereas 58 (18.6%) and 55 (17.6%) stated dirty stagnant water and both clear and dirty stagnant water as the breeding place respectively. The score distribution of knowledge on breeding places is shown in Table 2. The knowledge score of breeding places was significantly associated with the level of education (p value, 0.032).

Table 2; Knowledge about dengue mosquito breeding places vs. level of education

Level of education	Knowledge on dengue mosquito breeding places		
	High	Average	Low
Primary	1 (4.3%)	16 (69.6%)	6 (26.1%)
Ordinary	17 (11.5%)	101 (70.6%)	25 (17.5%)
Above	21 (14.4%)	114 (78.1%)	11 (7.5%)

Nearly a third (32.3%) gave all the correct answers on early symptoms of dengue fever and 26 (8%) participants gave all the correct answer on DHF. In another study carried out in Sri Lanka, participants had answered as high fever (94%), vomiting (69%), muscle pain (85%), headache (72%) and 25% participant had answered as rashes as symptoms (Gunasekara et al, 2012). Another research conducted in Laos found that fever was the mostly given answer as the commonest symptom (75.2%), 3% bleeding from the nose and 18.7% skin rashes (Nalongsack et al, 2009). One study revealed that most common signs and symptoms were fever and skin rashes (86.0%) as given by the participants (Hairi et al, 2003). When considering about dengue hemorrhagic fever (DHF), most of the respondents had heard about the DHF and 78% respondents had known that vomit with blood as a symptom of DHF.

Majority (85.2%) of participants agreed that DF can infect a person more than once and almost all the subjects (305, 97.8%) had attitude that anybody can get infected irrespective of the age. Only 49 (15.7%) participants agreed that the rainy season is the only season for outbreak of dengue infection and a considerable amount (255, 81.7%) had disagreed to that. Nearly one-fourth of the sample (73, 23.4%) had negative attitude on controlling dengue virus infection. According to the results, 308 (98%) had positive attitude regarding source reduction. Most (290, 90%) of the subjects have positive attitudes towards seeking early medical treatments

when a family member fall sick and the importance of having adequate bed rest and liquid intake.

Majority of respondents had obtained messages about dengue from multiple sources like television (98.4%), family members (95%), health centres (MOH office) (93.6%) and radio (90%). Other sources like newspapers, friends, leaflets, schools and internet also had provided information at a satisfactory level. Television was the most cited source of information about dengue fever in Pakistan, Malaysia and Sri Lanka (Itrat et al, 2008, Hairi et al, 2003, Gunasekara et al, 2012).

In the present study, results revealed that most of the respondents use measures to prevent mosquito bites. There were only two people who did not use any measures from the whole sample. Mosquito nets and fans were measures which were used by most of the respondents. Fan usage was highly increased in suburban areas of Sri Lanka. It can be understood by comparing with Gunasekara and others (2012). When considering their participation in disease prevention activities like cleaning, within three months before data collection, it was 60% and it should be increase. Most of respondents (140, 74%) had enthusiasm to clean inside their home and 168 (89%) respondents have cleaned their own garden. But, dengue mosquito breeding places can occur in public places like roads, draining systems, public buildings, schools and temples. Attention to the public places was at a very low level according to the responses (36, 19%). According to the answers of respondents, they were seeking government mediation (11, 6%) and some had taken legal action to clean public drainage systems and illegal garbage discarded places.

Conclusion

This study was conducted at a suburban area in the Western Province and found out the knowledge, attitudes and practices regarding dengue prevention. According to the study, most of the participants were educated and had satisfactory level of knowledge regarding dengue prevention. They had considerable level of attitudes regarding the prevention of dengue. Based on this study, it is

recommended that health education programmes should be continued and intensified with emphasis on improving the practices of the urban community and educating the community on the *Aedes* mosquito especially its role in the spread of the disease as well as the biting times and breeding habits.

A change in the approach of health education programmes is called for based on the findings that good knowledge has not led to a good practice of control measures. Therefore, health personnel should be trained to give appropriate counselling in an effort to change certain deeply ingrained traditional habits like domestic water storage without proper cover. Through the study, it has been observed that some facts should be modified within this area such as infrastructure facilities (proper drainage system) and waste disposal methods. The interaction between the community and the health sector should be increased for dengue prevention. The coverage of house-to-house inspections should be improved by increasing manpower and enhancing public participation.

The study concludes that the community was familiar with dengue prevention, but their participation in efforts combating dengue outside their own premises was poor. Media plays an important role in conveying increased awareness of effective control measures among the people. According to the results, regular visits of health personnel to the villages should be ensured and government mediation is a major necessity which was found through this study to get rid of dengue.

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