

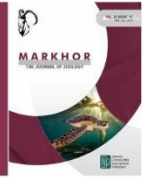


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Original Article

Knowledge Regarding Dengue Vector Control Among the Community of Tehsil Sahiwal, Sargodha

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ABSTRACT

Dengue virus infection is a vector borne illness which causes epidemics and urges for serious policies and steps to devise control strategies. **Objectives:** to test community members' understanding about dengue vector management of Tehsil Sahiwal, District Sargodha. **Methods:** It was a cross-sectional study conducted in community of Tehsil Sahiwal of District Sargodha. A total of 384 residents were enrolled in this study using a simple random sampling technique. A pre-tested questionnaire was used to ask knowledge related questions regarding dengue vector control program. Data was analyzed by SPSS version 20.0. Tables and figures were used to present the data. **Results:** Mean age of the respondents was 37.35 ± 11.67 years, out of these 69.8% were males and remaining were females, 69.8% respondents were males, 38.1% were matric and above, 51.1% were working in private firms and 62.2% respondents had family monthly income less than 20,000 rupees. Among respondents, 53.9% had overall good knowledge and 46.1% had poor knowledge. 25.0% acquired information from television and 35.1% from health personnel counseling. Among 177 respondents who had overall poor knowledge, 24(6.3%) had good attitude and 153 (39.8%) had poor attitude. The result was found statistically significant ($P=0.000$). **Conclusions:** Knowledge of the residents regarding dengue vector control program was satisfactory (53.9%).

INTRODUCTION

Dengue has a range of clinical symptoms, ranging from basic dengue fever (DF) through dengue hemorrhagic fever (DHF) to the most severe form, dengue shock syndrome (DSS) [1]. Dengue fever is a type of break-bone fever that causes headaches, high temperatures, muscular/bone pains, and a drop in platelets. High fever, bleeding, low platelet counts, and plasma leakage are all indications of dengue hemorrhagic fever, which is caused by low protein and albumin concentrations in the blood. After 2-7 days of dengue hemorrhagic fever, dengue shock syndrome can develop, accompanied by signs of low blood pressure and pulse [2]. Dengue fever diseases were first mentioned around 265 ADS in Chinese medical writings. Benjamin Rush presented an account of the dengue fever epidemic in Philadelphia in 1780 in 1789 [3]. Following then, outbreaks occurred every 10–30 years until World War II, when it spread globally [4]. In 1994, Pakistan saw its first verified dengue hemorrhagic fever epidemic [5]. In southern Pakistan the epidemic was present for two consecutive years. During 2005-2006 a large number of DHF reported from Karachi. More than 3,640 patients with sign and symptoms of dengue fever were admitted to several referral hospitals in the country. Outbreak of dengue has been reported from Province Khyber Pakhtunkhwa during 2007, 2008 and 2009 [6].

In 2008 when dengue epidemic occurred in Lahore, dengue got the importance of great public health problem in Pakistan [7]. Since then, there has been an increase in the number and severity of dengue cases recorded across Pakistan. In 2011, a worse epidemic occurred in district Swat, Khyber Pakhtunkhwa with total 9,038 confirmed cases and 67 deaths [8]. In 2015 dengue cases occurred in different cities of both Provinces Khyber Pakhtunkhwa and Punjab [9]. In Pakistan, the frequency of dengue fever has risen at an alarming rate in recent years, and the illness has now become a major public health concern. The major causes of dengue fever in Pakistan, like in other developing nations, are fast unplanned urbanization, poor civic



services such as inadequate water supply, inappropriate waste disposal, and people's social conduct. Furthermore, a rise in domestic and cross-border dengue transmission has been attributed to expanding international and domestic commerce, greater travel, relatively limited resources, and/or a lack of readiness to combat the dengue outbreak.

Different studies have found a seasonal occurrence of dengue fever. Dengue fever is most common in the monsoon and post-monsoon seasons [10], while occasional cases have been observed from July to December. Only with community participation can vector control strategies be effective, and it is critical to analyze the community's view of the illness, its mechanism of transmission, and breeding locations for the viability of a community-based program [11]. The general public's knowledge, attitudes, and practices (KAP) are the most important variables in avoiding dengue virus infection [12-14]. Knowledge and attitude studies are used to diagnose a population's educational needs [11]. This information aids the program in establishing communication goals connected to greater community participation and demand for services, as well as developing customized methods fit for at-risk populations' social, cultural, and political settings. Primary prevention, such as health education and community engagement, is an important aspect of the dengue fever approach. As a result, the purpose of this study is to learn about the community's knowledge and attitudes towards dengue vector management in Tehsil Sahiwal, District Sargodha.

METHODS

It's a community-based cross-sectional research project in Tehsil Sahiwal of District Sargodha. Sample size was 384 and participants were enrolled by simple random sampling. Both genders, within age range of 18-60 years and residents of Tehsil Sahiwal of District Sargodha were included. Data was analyzed by using SPSS version 20.0. Written consent was obtained from all the participants. A pre-tested questionnaire was used to assess the knowledge of respondents regarding the dengue vector control program. Participants were interviewed and response was noted. Data was initially organized through Likert Scale. Parametric and non-parametric test was also applied for the purpose of smoothening of data.

RESULTS

Among the 384 respondents, 77 (20.1%) knew that *Aedes aegypti* is the primary mosquito vector for dengue fever, while the majority (307 (79.9%)) did not. 269 (70.1%) knew that the rainy season is the only epidemic season for dengue infection, while 115 (29.9%) respondents did not. 249 (64.8%) knew that mosquitoes transmitting dengue infection bite only during the day, while 135 (35.2%) respondents did not (Table 1). According to 211 (54.9%) respondents, stagnant water from old tires, trash cans, refrigerator trays, air-conditioner water collection pots, open water storage tanks, old plastic shoes, birds water pots, and flower pots can be breeding places for mosquitoes, while 173 (45.1%) said no, and 96 (25.0) said dengue viruses are transmitted to humans through bites of infective female *Aedes* mosquitoes (75.0 percent). According to the table, 230 (59.9%) of the 384 respondents were aware that the only way to prevent dengue illness is to battle the vector mosquitoes, whereas 154 (40.1%) were unaware. 96 (25.0 percent) of respondents obtained their knowledge from television, 135 (35.1 percent) from health professional advice, 77 (20.1 percent) from local banners, and 76 (19.8%) from mosque announcements.

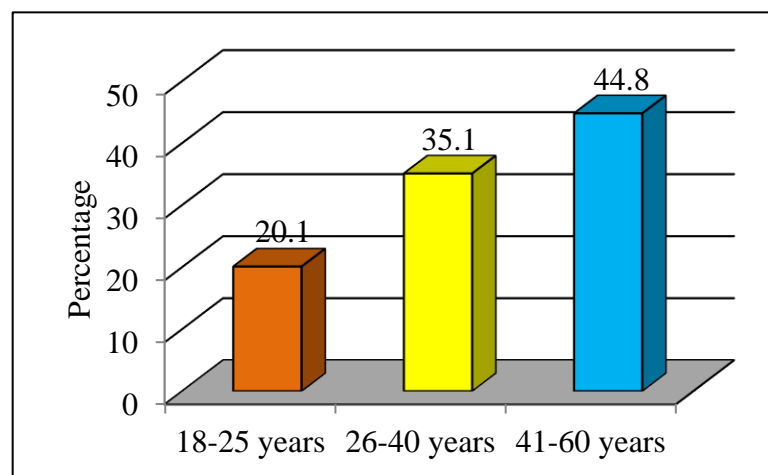


Figure 1: Frequency distribution of Respondent according to age

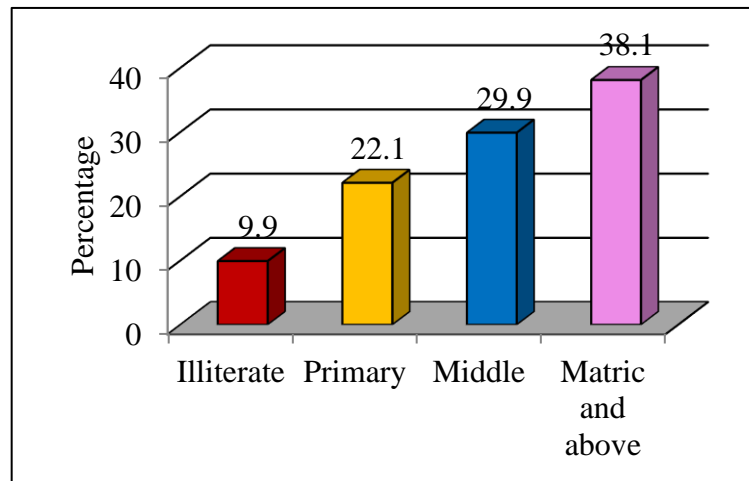


Figure 2: Frequency distribution of respondents according to education

Response	Frequency	Percentage (%)
<i>Aedes aegypti</i> is the principle mosquito vector for dengue fever		
Yes	77	20.1
No	307	79.9
Rainy season is the only epidemic season for dengue infection		
Yes	269	70.1
No	115	29.9
Mosquitoes transmitting dengue infection bite only during the day time		
Yes	249	64.8
No	135	35.2
Mosquito that transmits dengue infection lay eggs in dirty sewage water		
Yes	181	47.1
No	203	52.9
Empty stagnant water from old tyres, trash cans, refrigerator tray, air-conditioner water collection pot, water storage tank, old plastic shoes, birds water pots and flower pots can be breeding sites for mosquitos		
Yes	211	54.9
No	173	45.1
Dengue viruses are transmitted to humans through bites of infective female <i>Aedes aegypti</i> mosquitoes		
Yes	96	25.0
No	288	75.0
Only way to control dengue infection is to combat the vector mosquitoes		
Yes	230	59.9
No	154	40.1
Uncovered stored water containers/Tanks for drinking water should be cleaned every 4 days		
Yes	212	55.2
No	172	44.8
Sources of Information for their existing Knowledge regarding dengue vector control		
Television	96	25.0
Health personnel counseling	135	35.1
Banners (in area)	77	20.1
Mosque announcement	76	19.8

Table 1: Frequency distribution of knowledge according to following questions from respondents

DISCUSSION

The fact that just 20.1 percent of respondents knew that *Aedes aegypti* is the primary mosquito vector for dengue illness was shocking. The findings of a research conducted by Shuaib and colleagues (2010) revealed a better picture than ours, with 62.6 percent of respondents knowing that dengue disease is spread by *Aedes aegypti*. Another study conducted by Koenraadt and colleagues (2006) found that 77.0 percent of respondents knew that the main mosquito vector for dengue illness is *Aedes aegypti* [15]. The climate believed leading factor for dengue and in Pakistan June to August is a rainy season which poses a major threat in which large population of *aedes aegypti* grows. It is pertinent to mention that majority (70.1%) of respondents had knowledge that Dengue fever has just one epidemic season: the rainy season. Our findings are far superior than those of Kaur and Rajvanshi (2019), who found that just 16.8% of respondents believe that the rainy season is the only epidemic season for dengue infection [16]. The study also revealed that 64.8 percent of respondents were aware that mosquitoes spreading dengue virus only bite during the day. According to a study done by Koenraadt and colleagues (2006), 67.0 percent of respondents were aware that mosquitoes spreading dengue illness bites only during the daytime [15]. But another study done by NurAin and fellows (2017) reported that only 27.5% respondents had knowledge that *aedes aegypti* bites during day time [17]. During the survey, it was discovered that the majority of respondents were aware that uncovered storage water containers/tanks for drinking water should be cleaned every four days. Study further highlighted that these respondents acquired knowledge about dengue from different sources. Among respondents, main source of infection was health personnel counseling (35.1%), followed by television (25.0%), banners in area (20.1%) and mosque announcement (19.8%). But the study performed by Chinnakali and associates (2012) confirmed that majority (54.9%) of respondents got information from television, followed by newspaper/magazine (51.7%), health personnel (26.9%), radio (7.7%) and past illness with dengue (8.8%) [18]. Another study carried out by Rehman and coworkers (2015) indicated that 74.22% respondents' source of information regarding dengue was television, followed by newspaper (12.67%), teachers/professors (7.78%) and other sources (health care providers, radio, friends and internet etc.) (5.33%) [19]. When overall knowledge regarding dengue vector control was evaluated among respondents, study showed very encouraging results that more than half (53.9%) of respondents had good while 46.1% had poor knowledge. Our findings are superior to those of Rehman and colleagues (2015), who found that 43.8 percent of respondents had high knowledge and 56.2 percent had inadequate knowledge [19]. But the study conducted by Siddiqui and teammates (2015) confirmed that 91.0% respondents had adequate knowledge about dengue infection [20].

CONCLUSIONS

Study concluded that knowledge and attitude regarding dengue vector control among community was found satisfactory as there were 53.9% respondents had overall good knowledge and 58.1% had overall good attitude. Further studies are required to be conducted on large scale to evaluate the knowledge and attitude regarding dengue vector control among community.

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