KNOWLEDGE, ATTITUDES AND PRACTICES RELATED TO DENGUE FEVER IN PESHAWAR, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

Objectives: To determine the knowledge, attitude, and practices about Dengue fever in selected communities of Peshawar, Khyber Pakhtunkhwa, Pakistan.

Materials and Methods: We conducted this descriptive cross-sectional study in selected Peshawar, Khyber Pakhtunkhwa communities. The data was collected with the help of a well-structured questionnaire and was analyzed using SPSS version 23.

Results: Forty percent of our participants had good knowledge, 39%, had average knowledge and 21% had poor knowledge. Attitude scores were good for 75%, average for 18.3%, and poor for only 6.6% of the participants. 15.8% of the participants had poor, 50% had average, and 34.2% had good practices.

Conclusion: It was concluded that people with higher levels of education and previous involvement in Dengue awareness campaigns had better scores in knowledge and practice. Level of education had a significant association with knowledge and practice scores.

Keywords: Dengue Fever, Khyber Pakhtunkhwa

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INTRODUCTION

Dengue is one of the world's biggest viral arthropod-borne infectious hemorrhagic fever. Common in tropical and sub-tropical regions of the world, it poses a risk to about 2/3rd of the world population living in the 128 countries where Dengue is endemic. It is mainly transmitted by the bite of the female mosquitoes of the species Aedes aegypti and Aedes albopictus which tend to bite at dusk and dawn. With the rapid increase in urbanization and international travel, it has exploded globally, a staggering 400 million infections and 100 million presenting cases are annually seen. Infection with the virus could lead to a spectrum of pathology that ranges from mild asymptomatic Dengue fever (DF) to severe Dengue hemorrhagic fever (DHF) and Dengue shock syndrome (DSS) that can prove fatal unless treated.[1]

Before 1970, only 9 countries had experienced severe dengue endemic. Now it's endemic in more than 100 countries and almost 40% of the population is at risk of getting it. In Pakistan around 147200 cases and over 800 deaths have been reported from 1995 to 2019. Dengue serotype 2 is the most prevalent serotype in Pakistan. Epidemics were reported in Pakistan from time to time. [2]

The current method for the prevention of dengue is the reduction and control of its vector i.e. the same as that applied for the general mosquito populations with the exception of biological control such as using community-scale mosquito repellant smoke, using nets, etc. Biological control is largely experimental and lies on biological solutions to the problem such as placing fish in water containers and water bodies to eat the larvae of the mosquito. The currently used tools for suppressing dengue vector populations are often being called ineffective and there has been an increased interest in developing new tools.[3] We conducted this study to assess the relative importance of domestic spaces for the production of dengue vectors in a public and private environment, as well as

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the effect of biological, social, and environmental factors in modifying these niches.

MATERIALS AND METHODS

This study is a descriptive cross-sectional study carried out from March 2021 to August 2021in Peshawar, Khyber Pakhtunkhwa, and included areas of Tehkal Bala, Palosi, Nauthia, Ring road, and University Canal Town using a simple random sampling technique. The participants chosen were all above 18 years of age, included both genders, were residents of the area, and gave their consent, their confidentiality was ensured.

The ethical approval was taken from the Institutional Research and ethical review board, KMC A sample size of 120 was calculated via open epi WHO sample size calculator by taking a 95% confidence interval and 5% margin of error, and a statistical power of 2.5%.

Data was collected with the help of a well-structured questionnaire based on our study objectives containing only close-ended questions. Before conducted actual study a pilot study was conducted before the actual study and the questionnaire was modified accordingly. Data were analyzed using the 23 version of SPSS software and presented in the form of tables, graphs, and charts.

RESULTS

A total of 120 participants were included in this study and their demographic characteristics are described in table 1. The results of our study concluded that 40% of our participants had good knowledge, 39% had average knowledge and 21% had poor knowledge. Attitude scores were good for 75%, average for 18.3%, and poor for only 6.6% of the participants. 15.8% of the participants had poor, 50% had average and 34.2% had good practice scores. These results are summarized in table 2.

Variables of knowledge that were analyzed showed a very significant association with the level of education of the participant. Variables of knowledge under study are shown in Table 3.

Variables of attitude after thorough analysis did not reveal any significant association with the level of education of participants or the other parameters under study. We can also see that 109 participants believed that Dengue could be effectively controlled by eradicating mosquito breeding sites, reiterating the importance of government involvement in community monitoring and timely preventive control application. The variables of attitude that were under consideration in our study are described in Table 4.

After analyzing the practice variables, it was deduced that they had a significant association with the level of education and the knowledge score of the participant. Furthermore, participants that had participated in a Dengue awareness campaign before had higher scores in the parameters of knowledge and practice when compared to other participants in their respective educational groups. The variables of practices under consideration are shown in Table 4.

Table 1: Demographic characteristics of participants under study.

Demographics	Category	Count
Age Of The Participant	10-20	22
	21-30	51
	31-40	15
	41-50	17
	51-60	11
	60+	4
Gender Of The Participant	Male	85
	Female	35
Education Level of The Participant	Illiterate	16
	Primary	25
	Secondary	29
	Higher	50

Table 2: Variables of knowledge

Knowledge about Dengue fever	Options	Frequency
Has The Participant Ever Heard Of Dengue?	Yes	118
	No	2
Does The Participant Know What Causes It?	Yes	91
	No	29
Does The Participant Know Where The Mosquitoes Reproduce?	Yes	74
	No	46
Does The Participant Know The Complications?	Yes	40
	No	80
Does The Participant Know The Transmission Route?	Yes	78
	No	42
Can The Participant Visually Identify The Mosquito?	Yes	61
	No	59
Does The Participant Know The Areas Where It Is Common?	Yes	81
	No	49
Does The Participant Know Of Any Vaccine For Its Prevention?	Yes	20
	No	100
Does The Participant Know The Time At Which The Mosquito Bites?	Yes	63
	No	57
Does The Participant Know Of The Treatment?	Yes	41
	No	79

Table 3: Variables of Attitude

Attitude regarding Dengue fever	Option	Count
Does The Participant Think It's Necessary To Take Precautionary Measures?	Yes	114
	No	6
Does The Participant Know The Precautionary Measures?	Yes	97
	No	23
Does The Participant Think Prevention Is Better Than Cure?	Yes	116
	No	4
Does The Participant Think It's Necessary To Seek Medical Advice After Getting Bitten By Mosquito?	Yes	71
	No	49
Does The Participant Think Campaigns Are Beneficial?	Yes	103
	No	17
Does The Participant Think It Can Be Effectively Controlled By Eradicating Mosquito Breeding Areas?	Yes	109
	No	11
Does The Participant Think Society Has A Role In Its Prevention?	Yes	96
	No	24

Table 4: Variables of practice

Practices related to Dengue fever	Option	Count
Does The Participant Check Mosquitoes In Flower Pots And Water Containers?	Yes	66
	No	54
Does The Participant Cover All Water Containers?	Yes	95
	No	25
Does The Participant Properly Dispose Items That Can Collect Rainwater Or Block Drain Flow?	Yes	57
	No	63
Does The Participant Use Mosquito Nets?	Yes	67
	No	53
Does The Participant Use Repellants, Coils, Mats And Vaporizers?	Yes	95
	No	25
Does The Participant Wear Long Sleeved Clothing?	Yes	85
	No	35
Has The Participant Ever Taken Part In A Campaign In His Area?	Yes	20
	No	100
Does The Participant Take Measures To Prevent Water Stagnation?	Yes	70
	No	50

DISCUSSIONS

The main finding of this study was that the level of knowledge about Dengue and its prevention in almost all communities that were selected for the study was related very closely to the level of education of the participants or their involvement in a Dengue awareness campaign. 50 of our participants that had higher levels of education, had good and average scores in all three parameters under study which is consistent with a study carried out among the teachers of Peshawar garrison that showed higher levels of education corresponded to better scores in the aspect of knowledge.[2] People that had participated in a Dengue awareness campaign before also showed higher scores than other participants of their respective educational level group. Whereas participants with a lower level of education and illiterate participants had average or poor scores in both knowledge and practice, however, the attitude of 75% of the participants fell in the good category regardless of the level of education. The study also showed that participants were much more knowledgeable about the Dengue vector and its characteristics, such as where the vector reproduced, where the vector tended to be more common, what times the vector was more likely to bite, etc. However, knowledge about the signs and symptoms of Dengue, treatment of dengue, and vaccine availability were proportionately lower.

A similar study conducted in the rural and urban areas of Peshawar concluded that knowledge and attitudes between the two groups did not show any significant difference however certain variables that pertained to practices i.e. those related to mosquito bites, water storage and frequently changing water were significant. Knowledge in the community-based study was relatively high (89.7%) and the level of education had a significant association ($p<0.05$) with the scores of attitude and knowledge which is also consistent with the results of our study.[4]

A study carried out in suburban communities of Sepang, Selangor showed that knowledge about Dengue was adequate and ranged from moderate to high as a majority of the respondents (90.5%) had received information through various media, however because of a lack of Dengue cases in the communities the attitude and practices were poor.[5]

This is also consistent with our study as communities that had previously encountered a Dengue outbreak were much more likely to have good knowledge and practice regarding Dengue prevention.

A study carried out in the adult population of rural Lahore showed low levels of knowledge and correspondingly low levels of attitude and practices toward Dengue prevention which is consistent with our findings. It was recommended that the communities be enlightened about the depletion of the vector source by group involvement and raising their awareness on the matter. [6]

A study conducted in Aceh, Indonesia showed that 50% of the participants had poor knowledge of Dengue, and the lowest knowledge average was found in localities with the fewest incidences of Dengue fever. A weak association was found between preventive practice and level of knowledge regarding Dengue i.e. 45% of the participants had good knowledge but only 32% had good preventive practice.[7] In our study 40% of the participants had good knowledge and correspondingly 34.16% had good

preventive practice. Attitudes in 75% of the participant population were categorized as good and no significant association was found with the level of knowledge about Dengue.

A study conducted in the Lower Dir District of Khyber Pakhtunkhwa concluded that knowledge about Dengue fever and its treatment was low, whereas two-thirds of the participants (66.6%) knew that it was transmitted through mosquito bites. The attitudes regarding Dengue were good however the preventive practices were found to be unsatisfactory. These results reinforce the findings of our study which showed similar trends in the communities of Peshawar.[8]

CONCLUSION

It was concluded that people with higher levels of education and previous involvement in Dengue awareness campaigns had better scores in knowledge and practice. Attitudes were good independent of education level and other parameters under study.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Jamal MR: Concept, planning, study design, study conduction, critical review, analysis, manuscript writing.

Suleman M: Critical review, discussion, interpretation, manuscript writing, study conduction.

Umar M: Analysis, critical review, study conduction.

Ahmad J: Critical Review, study conduction, interpretation.

Khan S: Study design, study conduction.

Khan M: Study design, study conduction.

Ullah Z: Critical review, discussion.

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Khan D: Study design, study conduction.

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Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.