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Research Article

**KNOWLEDGE ATTITUDE AND PRACTICE TOWARDS
DENGUE FEVER PREVENTION AMONG ADULT
POPULATION OF RURAL AREA OF LAHORE PAKISTAN.**¹Dr Jawaria Saeed, ²Dr Habib Ur Rehman, ³Dr Nimra Waseem.¹MBBS, Fatima Jinnah Medical College, Lahore., ²MBBS, Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur Azad Kashmir., ³MBBS, Nawaz Sharif Medical College, Gujrat.

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Abstract:*Objective:* To obtain and collect information regarding Dengue Fever (DF) awareness in rural population.*Methodology:* A cross sectional observational study was conducted among 100 individuals from rural population of Lahore. All consenting individuals aged above 18 years and above encountered in selected rural areas interviewed using a structured, pre-tested questionnaire. Data regarding age, gender, occupation, mode of spread, vector, prevention, management and outcomes was collected. Data was analyzed using SPSS version 20.0.*Results* are expressed as mean±SD for continuous variables such as age and number (percentage) for categorical data such as gender. **RESULTS:** Mean age was 30.24+16.57 years, 63% male and 37% female. Most of respondents did outdoor jobs and were young. Respondents had good knowledge regarding vector, its breeding places, symptoms and outcome of disease but lacked knowledge in breeding season, treatment options, management and prevention of dengue fever.*Conclusion:* The rural population of Lahore has good knowledge regarding mode of spread, symptoms of dengue fever and where to get treatment however they lacked knowledge in management, outcome and prevention of dengue fever.**Keywords:** Dengue Fever, Knowledge, Prevention, Rural.**Corresponding author:****Dr. Jawaria Saeed,**

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INTRODUCTION:

Dengue fever is the most frequently spreading mosquito bite disease and it is the major health problem in tropical and subtropical areas throughout the world [1]. The word dengue was first described by Benjamin Rush in 1789 it is a Spanish word which means “fastidious”, it is derived from “dinga” which means an evil of spirit and break bone fever [2]. The causative agent of dengue fever belongs to the genus *Flavivirus* and family *Flaviviridae*. Dengue virus is transmitted to human via bite of infected female mosquito of the genus *Aedes*. Dengue fever and dengue hemorrhagic fever has spread to other Asian countries like China, Sri Lanka, India and Maldives [3]. In 1994 the outbreak of dengue and DHF was first reported in Karachi year 2016 as reported by Government of Pakistan [4]. There is a conversion in pattern of disease from mild to severe and multiple factors have been reported including lack of resources, climate change, natural disasters and resistance of mosquitoes to insecticides [5]. The main causes and hurdles regarding dengue control described in another study in Pakistan included congested streets and houses, large population, presence of mosquito breeding sites, and a passive role of government regarding community awareness regarding DF [6]. From 1995 to 2004 only 699 cases of dengue were reported from three districts of Pakistan. There was a substantial increase in cases and deaths to 55946 and 539 respectively, affecting 105 out of 146 districts/agencies/ territories [7]. Although dengue can be severe but it is preventable. Its outbreaks can be prevented / minimized if people have good knowledge, positive attitude and healthy behavior. About 67.5% of population of Pakistan lives in rural areas and Pakistan had literacy rate of 56% in 2014 which is very low [8]. Most of people in rural areas have poor life style and economic condition, less access to medical services along with less literacy rate which are important factors in decreased community awareness regarding DF and leading to negligible preventive measures for spread of DF. This is a point of concern as it may lead to increased mortality in rural population and there is no documented evidence regarding awareness and practices of dengue fever among rural population. Thus this study was aimed at accessing the frequency of knowledge of rural population regarding mode of spread, prevention and outcome of DF.

METHODOLOGY:

A descriptive cross sectional observational study was conducted among 100 individuals from rural population. Different rural areas of Lahore were visited by a team of medical students and doctors for the purpose of data collection and probability cluster

sampling was done from selected communities and localities visited for the survey. Knowledge attitude and practices among rural population are assessed by questionnaire. All consenting individuals aged above 18 years and above encountered in selected rural areas were interviewed using a structured, pre-tested questionnaire. Informed consent was taken from all the respondents and confidentiality was ensured throughout the study. The questionnaire and consent forms were translated into Urdu for the ease of respondents. Every individual was given a total score based on this variable in order to categorize them into age, gender, education, occupation, mode of spread, vector, prevention, management and outcomes. Any scoring with higher percentage gave us information about the knowledge, attitude and practices of dengue fever among rural population of Lahore. We have to choose a number of variables. This strategy was used because a single variable cannot accurately illustrate an individual's knowledge attitude and practices of dengue fever. Data was analyzed using SPSS version 20.0. Results are expressed as mean±SD for continuous variables such as age and number (percentage) for categorical data such as gender.

A total of 100 individuals were selected to participate in this survey from different localities in rural suburbs of district Lahore. The response rate was 100% and all respondents were cooperative and successfully interviewed. Mean age of respondents was 30.24±16.57 years. Percentage of respondents according to age group; 16-30 years in 68%, 30-45 years in 16%, 40-60 years in 9% and 61-75 years in 7% of respondents. Majority respondents were male; 63% of total while female respondents were 37%. Respondents belonged to different occupations with top of list students (36%) followed by laborers (32%), businessmen (12%), housewives (9%), farmers (7%) and landlords (4%). 33% did not have any formal education, 14% had education till primary, 7% till secondary, 31% till matriculation, 8% till intermediate and 7% were graduation and above as depicted in Table I.

Majority of people had good knowledge of the mode spread of dengue fever that is by biting of *Aedes* mosquito (81%) while others suggested air droplet (10%), physical contacts (6%) and uncooked food (3%) can spread dengue fever. 63% respondents claimed clean stagnant water as place of growth, 23% dirty stagnant water, 8% clean flowing water, 5% dirty flowing water and 1% had no idea of place of growth of vector. About 44% respondents suggested dengue spread was common in months of June to August while others suggested March to May (35%), September to November (11%) and December

February (10%) were common seasons for spread. Biting time of Aedes mosquitoes according to respondents was early morning (35%), night (28%), evening (25%) and 12 o'clock at noon (12%). Based on the scoring of the knowledge section regarding symptoms of dengue fever most of respondents selected high grade fever(40%), rash (20%), bleeding(11%), pain(3%), all of above(16%) however 10% had no idea of symptoms. Respondents reported that treatment strategy if they contacted DF will be allopathic (74%), homeopathic (9%), hakeem (9%) and no treatment at all (8%). When asked about management for dengue fever 41% did not have any idea while others responded that blood transfusion (21%), antipyretic (17%), fluid intake (13%) and all

of above (8%) were included. Regarding outcomes of dengue 58% responded that recovery is common, 33% responded death will occur, 4% lifelong progression and 5% had no idea about outcome. With regard to the practices of preventive measures 55% had no awareness while others responded with wearing full sleeves and use of repellents (17%), covering water container (16%), insecticide spray (10%) and by not staying outdoors in evening (2%). According to respondents they considered television as better source of information (58%) followed by news paper (19%), friends and relatives (12%) internet (11%). Knowledge, attitude and practices are summarized in Table II.

TABLE I: DEMOGRAPHIC CHARACTERISTICS

Total Number of Respondents (n)	100
Gender	
Male	63%
Female	37%
Mean Age	30.24±16.57 years
Age Group	
16-30 years	68%
30-45 years	16%
40-60 years	9%
61-75 years	7%
Occupation	
Students	36%
Laborers	32%
Businessmen	12%
Housewives	9%
Farmers	7%
Landlords	4%
Education	
None	33%
Primary	14%
Secondary	7%
Matric	31%
Intermediate	8%
Graduation & Above	7%

**TABLE II:
KNOWLEDGE, ATTITUDE AND PRACTICES**

Mode of Spread		Treating Person	
Biting of Aedes mosquito	81%	Allopathic	74%
Air droplet	10%	Homeopathic	9%
Physical contacts	6%	Hakeem	9%
Uncooked food	3%	No treatment	8%
Place of Growth		Management	
Clean Stagnant Water	63%	Blood Transfusion	21%
Dirty Stagnant Water	23%	Antipyretic	17%
Clean Flowing Water	8%	Fluid intake	13%
Dirty Flowing Water	5%	All of above	8%
No Idea	1%	No Idea	41%
Season of Spread		Outcome of Disease	
June-August	44%	Recovery	58%
March-May	35%	Death	33%
September-November	11%	Lifelong Progression	4%
December-February	10%	No Idea	5%
Biting Time of Mosquitoes		Preventive Measures	
Early Morning	35%	No awareness	55%
Night	28%	Wearing full sleeves and use of repellents	17%

Evening	25%	Covering water container	16%
12 o'clock at Noon	12%	Insecticide Spray	10%
		Not staying outdoors in evening	2%
Symptoms Of Dengue Fever		Source Of Information	
Fever	40%	Television	58%
Rash	20%	Newspaper	19%
Bleeding	11%	Relatives and friends	12%
Retero-orbital Pain (3%)	3%	Internet	11%
All of above	16%		
No Idea	10%		

DISCUSSION:

This study demonstrates that there is lack of awareness among masses regarding dengue fever, its

mode of spread, its symptoms, preventive measures and outcome of disease. Majority of our respondents were young adult male having an outdoor job and

lived in rural areas. They showed that dengue fever is more prevalent in rural areas, in low socioeconomic groups, having potential breeding places around their homes and those having at outdoor nature of job. Respondents showed a good knowledge regarding vector of dengue fever (81%) which is comparable to other studies conducted in Pakistan and clean stagnant water as its breeding sites (63%). Stagnant water is major cause of spread of dengue fever in Pakistan as depicted by one study conducted in Faisalabad and in another study conducted in Lahore [9]. Respondents had poor knowledge regarding season of spread of dengue fever and only 11% reported that its common in September to November contrary to study conducted by Suleman M et al. who concluded that maximum number of confirmed cases are reported but they did have a good knowledge of biting time of mosquitoes that is day time which is also concluded by other studies [10][11]. Only 10% of respondents had no idea about the symptoms of dengue fever while others had a considerably good knowledge of symptoms and recognized fever as most common symptoms. Adequate knowledge of symptoms has been depicted among common population in other studies from Pakistan [12]. Most of respondents showed that they will approach a physicians in case of dengue fever but 26% respondents had alternative options like hakeem, homeopathic or no treatment which quite alarming as it may increase mortality among patients and many cases will go unidentified. This relates to knowledge about management of dengue fever as most of them had no idea about it although some of them did identify anti-pyretics as treatment option showing similar results to other studies in Pakistan [13]. Most of respondents perceived that recovery is possible from dengue fever(58%) while others recognized dengue as deadly disease although knowledge of outcome is less as compared to another study[14] . Respondents had poor awareness regarding preventive measures of dengue fever. 55% had no awareness regarding any preventive measure which is contrary to studies by Qadir S 2015 and Itrat A et al but coincides with results of Syed M et al. which showed that awareness is less among low socioeconomic groups [15]. Awareness regarding prevention was also very poor as compared to studies in other population groups. Electronic media was reported as most effective source of awareness by our study population which is reported by other studies in a similar way but contrary to study which shows relatives and friends as most common sources of awareness [16]. This study shows that rural population has overall poor knowledge, attitudes and practices regarding dengue fever and there is need to further enhance the awareness programs by

governments as they have proven to less effective[4,18]. Other studies in Pakistan have shown similar results [18][19]. There is need for integrated community approach via social, political mediums and through electronic media and the areas endemic should be focused in awareness programs. Emergency facilities along with medicines, mosquito repellents, chemical and mosquito nets should be provided free of cost or with controlled enhancing their use and thus dengue fever prevention.

CONCLUSION:

The rural population of Lahore has good knowledge regarding mode of spread, symptoms of dengue fever and where to get treatment however they lacked knowledge in management, outcome and prevention of dengue fever.

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