

# AWARENESS AMONG BARI IMAM COMMUNITY REGARDING MOSQUITO BORNE DISEASES

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## ABSTRACT

**BACKGROUND:** Mosquito Borne Diseases (MBDs) are one of the most serious problems in Pakistan especially in slum areas. Many studies' results showed that lack of awareness and practices to prevent from mosquito borne diseases has increased the death rate. This research study aims to illuminate the awareness of Bari Imam Community, Islamabad regarding Mosquito Borne Diseases.

**OBJECTIVE:** To determine the awareness level of the community of Bari Imam, Islamabad regarding mosquito borne diseases.

**METHODOLOGY:** Quantitative cross sectional study design was used. Data was collected from 300 participants from Nurpur Shahan area of Bari Imam Community, Islamabad. Convenient sampling technique was used.

**RESULTS:** The findings from the research show that 41.3% people were aware about Malaria, 48.3% were aware about Dengue, 3.7% were aware of both and 6.7% had no idea about the disease. 75% people were not aware about the diet pattern during the disease. 69.7% people had answered that fever is the most common sign of MBDs. 9% reported muscle pain, 4.3% reported nausea and vomiting, 5.7% reported allergy and 3.3% reported severe headache.

**CONCLUSION:** Analysis of the quantitative study showed that most of the participants were not aware of Dengue and Malaria.

**KEYWORDS:** Mosquito Borne Diseases (MBDs), Bari Imam Community, Awareness.

## INTRODUCTION

Mosquito-Borne diseases (MBDs) are dangerous, especially in slum areas of Pakistan. MBD's victims are found in and around Islamabad and other places. Those Mosquito-borne diseases are the most threatening health challenge as it affects 40% of total world's population. <sup>1</sup> To prevent MBDs multiple and advanced mosquito control measures are under development. MBDs were found in rural as well as sub-urban areas because of the accessibility of favorable conditions for the breeding of mosquitos. According to WHO each year there are almost 50-100 million infections of dengue worldwide.

The majority of emergent illnesses in the world are caused by mosquitoes, yet there is no vaccine to prevent them; instead, we must manage the vector. <sup>2</sup> By performing a thorough cleaning, getting rid of stagnant water, covering open drains, and removing plants from around our homes, we can control vectors. Government should take the lead on this matter. Studies have revealed that inadequate understanding and practice of mosquito-borne disease prevention has increased the number of deaths. It is estimated that almost 50% population of the world is susceptible to mosquito-borne diseases by 2050. A study was conducted in the Cambodian province of Kampong Cham; the purpose of their survey was to know about the preventive measures which were taken by the people and where they utilize them critically. The result shows that people were aware but they were not utilizing the preventive measures. <sup>3</sup> A systematic review

was conducted, consisting of 23 articles including the studies of developing countries. 8 of them were about the participation programs among the community for the control of dengue. Results of these studies show that most people don't know that mosquitoes are the cause of dengue and it can cause death. <sup>4</sup>

Dengue cases in Pakistan were prevalent from August to December. Information about confirmed cases and deaths was collected in different departments during the outbreak of dengue fever. Overall cases reported in Pakistan on 5th December 2019 were 52,877 but most cases were from Rawalpindi and Islamabad which were 20,988. People who died due to Dengue fever were 92. Many actions were taken by the Government for the survival of people which includes spreading awareness among community people, observation of vectors, eradicating larva sources, isolating the patients, and enhancing in sanitation system <sup>5</sup>

Every year 400,000 deaths are recorded due to malaria; dengue and yellow fever are also the major diseases of this world. <sup>6</sup> In Bari Imam Community, there are many mosquitos breeding sites. It is a slum area with greenery and open drains which are the main places for mosquito breeding. There is a need to assess the awareness level of community people regarding mosquito-borne diseases. If mosquito-borne diseases are left untreated, then they would be fatal. As prevention is a priority, awareness about preventive measures and diet patterns during mosquito-borne diseases is of special concern. Our study will contribute to in-depth awareness of mosquito-borne diseases through posters,

interactive sessions, pamphlets, and video sessions. The purpose of conducting research is, "To find awareness among Bari Imam Community regarding Mosquito-Borne Diseases". We choose Bari imam community for our research because participants were easily available due to convenient sampling.

Our study will find the awareness of mosquito-borne diseases and will also contribute to assessing the knowledge of the community about the mosquito-borne disease. Our study will help the stakeholders to take necessary steps regarding the prevention of mosquito-borne diseases. It will also educate the community in taking precautions regarding mosquito borne disease.

#### METHODOLOGY:

The study design was cross-sectional and quantitative. A survey was conducted in the Nurpur Shahan area from Bari Imam Community, Islamabad from 16 to 18 August 2022.

A cross-sectional survey was used in the study to obtain demographic data and ascertain the participants' awareness of mosquito-borne diseases. The total population of this area is almost 25000. According to WHO sample size formula we have calculated the sample size of 300 participants for our research study. We used the convenience sampling technique. The participants with age 15 to 73 were included in our study. The rights of the participants were considered. The rights to voluntarily participate, to refuse, to withdraw, confidentiality, and to ask questions were given to the participants.

A close-ended questionnaire was used for data collection. We used a questionnaire from a study by Nguyen-Tien et.al, (2021) with their permission to use it in our study. After which the tool was modified. The questionnaire was divided into two parts. The first part was about the demographic characteristics of participants and the second part was about awareness of participants regarding MBDs. The questionnaire was researcher administered.

**Exclusion criteria:** People who refused to give information were not forced to participate and were kept safe from any pressure, physical harm, or monetary incentives. An informed Consent form was given to the participants so that they may know about the purpose, benefits, and risks behind the study before they agree or decline to join.

**Inclusion criteria:**

All participants were included who wanted to participate in this survey

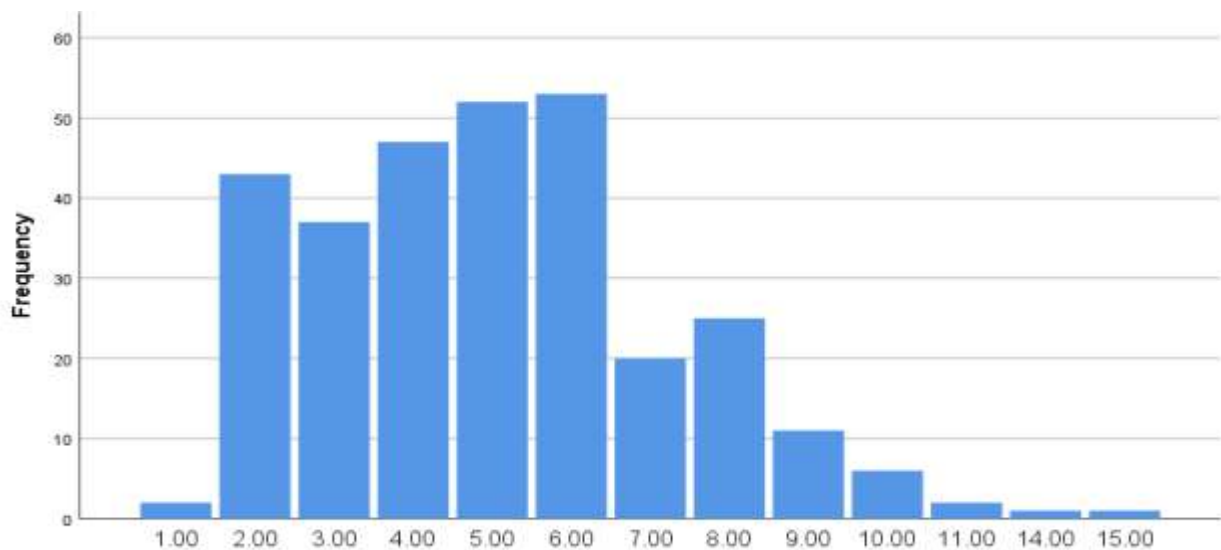
**Data Analysis** For the quantitative data analysis, SPSS version 25 was used. Data were analyzed by using frequencies and percentages of categorical variables. For cross tabulation we had computed means of all the items of awareness.

Every question was analyzed individually.

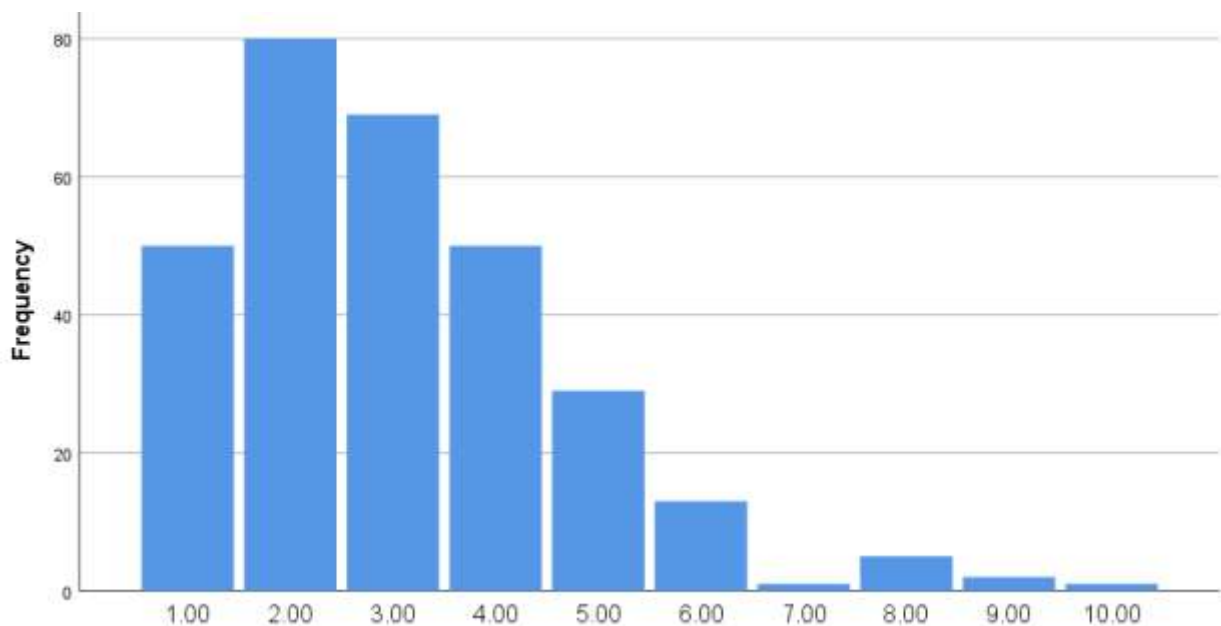
**RESULTS**

**Table 1: Demographic data:**

	Frequency	Percent
<b>Gender of participants</b>		
Male	66	22
Female	234	78
<b>Education level of participants</b>		
Primary	75	25.0
Middle	38	12.7
Metric	66	22.0
Inter	20	6.7
Graduate	1	0.3
Uneducated	100	33.3
<b>Profession of participants</b>		
On service	79	26.3
House wife	216	72
Students	5	1.7
<b>Ethnicity of the participant</b>		
Punjabi	141	47.0
Kashmiri	21	7.0
Pakhtoon	110	36.7
Sindhi	14	4.7
Balochi	9	3.0
Gilgati	5	1.7
<b>Marital status of participants</b>		
Married	238	94.3
Single	17	5.7



**Figure 1: No. of adults living in household**



**Figure 2:No. of children living in household**

Two questions were asked to participants which were the number of adults and children living in their homes. Their responses were highly variable. 14.4 %are 2 people, 12.3 % were 3 people ,15.7% were 4 people, 17.3% were 5 people and these number of people range from 1 to 15.

**Table 2: Frequency and percentages of various variables**

Are you familiar with the illnesses that mosquitoes can spread?		
	frequency	percentage
Malaria	124	41.3
Dengue	145	48.3
Grouping of above	11	3.7
Not known	20	6.7
Has anyone in your family ever experienced a sickness carried by a mosquito?		
Yes	153	51
No	147	49
How long does it typically take to recover from mosquito-borne diseases?		
Less than 4 days	63	21.0
More than 4 days	137	45.7
Not known	100	33.3
Are you familiar with the diet during malaria and dengue fever?		
Yes	75	25
No	225	75

<b>What is the timing when mosquito usually bites?</b>		
Morning	58	19.3
Night	232	77.3
Don't know	10	3.3
<b>Which place is most suitable for mosquito breeding?</b>		
No idea	20	6.7
Gutters	43	14.3
Standing water	134	44.7
Trash	57	19
Greenery	45	15
Grouping of above	1	0.3
<b>What are signs and symptoms of mosquitoes borne diseases?</b>		
No idea	25	8.3
Fever	208	69.3
Muscle pain	27	9.0
Nausea ,vomiting	13	4.3
Allergy	17	5.7
<b>What safeguards are there against mosquitoes?</b>		
No idea	35	11.7
keep environment clean	176	58.7
Keep surrounding clean and proper drainage	64	21.3
Grouping of above	6	2.0
Proper drainage	19	6.3
<b>What personal safety precautions do you take?</b>		
Mosquito coil	99	33.0
Bed net	88	29.3
Applying smoke	13	4.3
Applying lotion	70	23.3
Spray	20	6.7
Grouping of above	8	2.7
Nothing	2	.7

<b>What medical sources do you use?</b>		
Private hospitals	75	25.0
Government hospitals	183	61.0
Primary healthcare centers	30	10.0
Over the counter drugs	12	4.0
<b>What are the communication media in the respondent's home?</b>		
Television	197	65.7
Newspaper	48	16.0
Internet	25	8.3
None	26	8.7
Other	4	1.3
<b>What steps the government was taking to decrease mosquitoes?</b>		
Don't know	17	5.7
Don't know	248	82.7
Doing	35	11.7

## DISCUSSION

Comparing the demographics of our study with other studies, people who participated in our study were of ages ranging from 15 to 73. A study was conducted regarding dengue knowledge, attitudes, and practices; they also have taken participants between the ages of 15 to 88.<sup>3</sup> Above 15 years of age, group participants were taken in all studies because they have more exposure and knowledge than smaller age groups. In our study one-fourth of the participants had a primary level of education, some had a middle level of education, less than one-fourth had education till matric, one of them was graduated and one-third of the participants were uneducated. In the study, participants who had 1 to 6 years of education were in greater number, almost one-fourth of them had above 6 years of education and twenty percent were illiterate.<sup>3</sup> Female respondents were in greater number including housewives, some do jobs and almost one-fourth of the respondents were male including drivers, shopkeepers, salesman, stakeholders and few of them were students. The reason for the high ratio of females in our study is that we had collected data during day time and males were on their jobs at that time.

In one of the study, most of the respondents were also farmers. Sample findings in the community show that almost half of the people were familiar with Dengue and Malaria, few were familiar with both, and few were unfamiliar with the mosquito-borne disease.<sup>2</sup> That's why we have pasted pamphlets on doors of their homes and also conducted a session for their awareness in Bari Imam.

Most people said that mosquitos bite at night; few said that mosquitos bite in the morning but some people were not sure about the times. In one of the study, most people responded that Dengue bites during day time, some responded night time, and few of them were unaware.<sup>3</sup> In our study, most of the people responded that mosquitoes bite at night but in other study, people said that Dengue bites during the day, so there is a contradiction between the two.<sup>3</sup> This shows that they need more information because the timings of a mosquito bite are different for each mosquito and we explained the bite timings of different mosquitos in the Bari Imam Community. Most of the people in Bari Imam said that the common mosquito breeding site is standing water, some people responded to greenery; some responded that Gutters are a source of mosquito breeding, some

said that trash is the source of mosquito breeding and few of them responded to all. In the study, people responded to mosquito breeding sites which include water storage jars and coconut shells/cans in greater numbers, tiers, water around houses, cement baths, and ant traps, and most of them know about 1 or more breeding sites and few of them don't know<sup>4</sup> Most of the people in Bari Imam were aware of the common sign of mosquito-borne diseases which was fever, some responded to nausea and vomiting, some people responded to muscle pain, some responded to allergy and some did not know the signs/symptoms of the disease. In the study, most people were aware of fever and many had knowledge about other symptoms including somnolence, rash, headache, nausea/vomiting, bleeding, shock, aches and pain and muscular pain, some of them knew 3 or more symptoms<sup>(3)</sup>. Most people use mosquito repellent coils and lotions, some use bed nets, some use smoke, some use spray, some use multiple things and some don't use anything as a preventive measure. In the study, most people use bed nets during the day, wear long sleeves, use mosquito coils, keep the household environment clean, use a fan, cut bushes near the houses, keep clothes tidy, and children play far from breeding sites and use mosquito repellents, some of them are aware of 1 or more preventive measures.<sup>5</sup> Most people of Bari Imam avail government hospital facilities, some avail of private hospital opportunities, some go to primary health care centers and few of them use over-the-counter drugs. In the study<sup>6</sup>, when people get a fever most of them use a cold compress, some go to a health facility, some get medications from a pharmacy, some go to private facilities and some have other options. Almost all people said that the government is doing nothing to decrease mosquito-borne diseases but few of them said that before the covid government visited our area and sprayed it.

#### Limitations of the Study:

As data were collected from participants through a non-random convenience sampling method, so this study's findings lack generalizability. Our study is not conducted on a vast level due to a shortage of time and limited resources. Due to a lack of education about the consequences of diseases, the people were not interested to participate in the research.

The strength of our study is that it is cost-effective and easy to conduct because we have to collect data at one point in time. It takes less time and the results of our study can be used for further research.

The government should be aware of people through communication channels such as television because almost all people have televisions in their homes. If the government will take this issue seriously then many lives could be saved.

#### CONCLUSION

Analysis of the quantitative study showed that most of the participants were not aware of Dengue and Malaria. More than half of the participants responded that the government is not taking any action to reduce MBDs. So, it is suggested that both

community residents and government should take different measures to save the lives of people from MBDs.

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