

ASSESSMENT OF KNOWLEDGE, AWARENESS AND COUNSELLING ON DENGUE CONTROL MEASURES IN URBAN POPULATION OF HYDERABAD.

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ABSTRACT:

Dengue virus (DENV) is endemic in India, and DF has been a serious public health issue in the country for the past 50 years. According to WHO estimates, 500000 cases of DHF occur worldwide each year, with 22000 cases resulting in death. With recent spikes in dengue cases, the importance of educating the people on dengue fever is at an all-time high. A specially designed pre-tested questionnaire of 20 questions including socio-demographic profile of respondents such as age, sex, marital status, education and socio-economic status etc., was used. Their knowledge, awareness regarding dengue was assessed by asking questions related to dengue fever, its mode of transmission, preventive measures etc. Behavior Change Communication (BCC) interventions was done by counselling the people on various dengue control practices and distribution of information leaflets. 70 households were enrolled in this study based on inclusion and exclusion criteria. Out of 70 participants. 37 (52.9%) were male and 33(47.1%) were female. Most participants age was in the range 18-30 years, 33(47.1%) and least response was recorded from the age group above 60 years. And 84.3% (59) and 82.9% (58) identified malaria and dengue as diseases that can be transmitted through mosquitoes, while others were not able to identify. And most of the people don't have the awareness on dengue and its control practices. This has resulted in the increasing dengue cases recently. The knowledge of the respondents about dengue fever, its mode of transmission and preventive and control measures is good. However, it is important to conduct education and awareness programmes in communities for protection against transmissible diseases like dengue.

Key words: Dengue virus, Behavior Change Communication (BCC), Malaria.

INTRODUCTION

Dengue fever is a mosquito-borne infectious disease spread by the *Aedes aegypti* and *Aedes albopictus* mosquito species that affects nearly half of the world's population. Dengue fever and dengue haemorrhagic fever are caused by four different serotypes of the dengue virus (DENV 1, DENV 2, DENV 3, and DENV 4). Dengue fever is usually a short-term infection. Dengue fever currently does not have a specific antiviral treatment. Analgesics, fluid replenishment, and bed rest are usually enough for supportive treatment.¹ Dengue fever incidence has surged eightfold in the last two decades, according to the World Health Organization, from 505,430 cases in 2000 to over 2.4 million in 2010, and 5.2 million in 2019.²

According to ECDC reports from April 2022, there were 293 332 cases and 407 deaths reported, with the majority of cases (167 602) and deaths (407) coming from Brazil and Indonesia, respectively (229).³ According to the Directorate of National Vector Borne Disease Control Programme (NVBDCP), 123 cases of dengue fever were reported in India from October 2021 to October 2022.⁴

The World Health Organization (WHO) announced their new five-year brilliant plan, "the Thirteenth General Program of Work 2019–2023," in January 2019, in which dengue fever was identified as one of the four key illnesses threatening global health.⁵

Rapid urbanisation and poor water management, particularly water storage practises in urban, peri-urban, and rural regions, have raised the danger of dengue fever in recent years, resulting in an increase in mosquito breeding sites.⁶ A successful and long-term vector control programme requires the participation of the community. To achieve this aim, empowering and equipping individuals with the necessary scientific knowledge and skills, as well as instilling a socially responsible mindset, are required. In order to take further action, such as raising awareness and changing behaviour, it is necessary to assess the community's degree of knowledge and preventive behaviour.⁷

MATERIALS AND METHODS:

A prospective observational study was conducted for a period of 6 months with the sample size of 70 households in the peerancheru village, Hyderabad. At the household level after obtaining informed written consent from the participant a single member of each household aged 18 years and above was included in the study. Residents who are unavailable on two consecutive visits was excluded in the study.

A specially designed pre-tested questionnaire of 20 questions including socio-demographic profile of respondents such as age, sex, marital status, education and socio-economic status etc. was used. The types of questions included in the above questionnaires are open-ended, close-ended, dichotomous, and multiple-choice questions. Their knowledge, awareness regarding dengue was assessed by asking questions related to dengue fever, its mode of transmission, preventive measures etc.

Behavior Change Communication (BCC) interventions was done by counseling the people on various dengue control practices and distribution of information leaflets.

RESULTS: Out of 70 participants. 37 (52.9%) were male and 33(47.1%) were female. Most participants age was in the range 18-30 years, 33(47.1%) and least response was recorded from the age group above 60 years. And 84.3% (59) and 82.9% (58) identified malaria and dengue as diseases that can be transmitted through mosquitoes, while others were not able to identify. And most of the people don't have the awareness on dengue and its control practices. This has resulted in the increasing dengue cases recently.

Table 1: Socio-demographic data.

S.NO	SOCIO-DEMOGRAPHIC PROFILE		NUMBER(%)
1	SEX	MALE	37 (52.9)
		FEMALE	33 (47.1)
2	AGE	18-30 YEARS	33(47.1)
		31-45 YEARS	29 (41.5)
		46-60 YEARS	07 (10)
		>60 YEARS	01 (1.4)
3	EDUCATION	ILLITTERATE	0 (0)
		PRIMARY	04 (5.7)
		MIDDLE	10 (14.3)
		HIGHER SECONDARY	11 (15.7)
		GRADUATE AND ABOVE	45 (45.01)

Table 2: Knowledge of the participants.

S.NO	KNOWLEDGE REGARDING DENGUE		NUMBER (%)
1	Diseases transmitted by mosquitoes	malaria	59 (84.3)
		Chikungunya	11(15.7)
		Dengue	58(82.9)
		Filariasis	0 (0)
		Typhoid	5(7.1)

		Don't know	5(7.1)
2	Symptoms of mosquito borne diseases	Tiredness	20 (28.6)
		Skin rashes	5(7.1)
		Joint pain	20(28.6)
		Headache	18 (25.7)
		Fever	38(54.3)
		Muscle ache	10(14.3)
		Don't know	21 (30)
3	Complications of dengue infection	Shock	3 (4.3)
		Low platelet count	18(25.7)
		Dehydration	2(2.9)
		Death	6(8.6)
		Don't know	46 (65.7)
4	Which of the following is/are not a mode of spread of dengue	Flies	3 (4.3)
		Mosquitoe bites	14 (20)
		Standing water	41 (58.6)
		Unhygeinic food and water	44 (62.9)
		Don't know	6(8.6)
5	Can dengue be transmitted by person to person	Yes	2 (2.9)
		No	66 (94.3)
		Don't know	2 (2.9)
6	Species of mosquito that transmits dengue	Aedes	2(2.9)

		Anopheles	5(7.1)
		Culex	0 (0)
		Don't know	63 (90)
7	Most frequent dengue mosquito biting period	Day time/morning	8 (11.4)
		Nighttime/evening	59 (84.3)
		Don't know	7 (10)
8	Typical mosquito breeding places	Water	59 (84.3)
		Mud	20 (28.6)
		Plant pots	10(14.3)
		Sand	8 (11.4)
		Garbage	57 (81.4)
		Broken bottles	1 (1.4)
		Don't know	1 (1.4)
9	Do mosquitoes breed in standing water	Yes	59 (84.3)
		No	2 (2.9)
		Don't know	9 (12.8)
10	Dengue is most prevalent in	Summer (April-June)	16 (22.9)
		Rainy (July-Aug)	48(68.6)
		Autumn(Sept-Nov)	8 (11.4)
		Winter (Dec-Feb)	11 (15.7)
		Don't know	2 (2.9)

Table 3: Awareness of participants regarding dengue control measures.

S.NO	Awareness of respondents		Number (%)
1	Do you cover water containers	Yes	70(100)
		No	0 (0)
2	Do you use mosquito screen/mesh	Yes	65 (92.9)
		No	05 (7.1)
3	Mosquito control aids	Mosquito repellent	45(64.3)
		Insecticide spray	14 (20)
		Other	06 (8.6)
		No	08 (11.4)
4	Do you use any larvicidal	Yes	6(8.6)
		No	64 (91.4)
5	Do you clean flowerpots regularly	Yes	59 (84.3)
		No	11(15.7)
6	Do you turn containers upside down to prevent water collection	Yes	69 (98.6)
		No	01 (1.4)
7		Always	14 (20)

	How frequently do you clean or empty water-filled containers and ditches	Once a week	30 (42.9)
		Once a month	26 (37.1)
		Never	1 (1.5)
8	Do you cut down bushes regularly in your yard	Yes	66 (94.3)
		No	04 (5.7)
9	Do you apply mosquito repellent at night	Yes	60(85.7)
		No	10 (14.3)
10	Do you wear long sleeved shirts and long trousers	Yes	56 (80)
		No	14 (20)

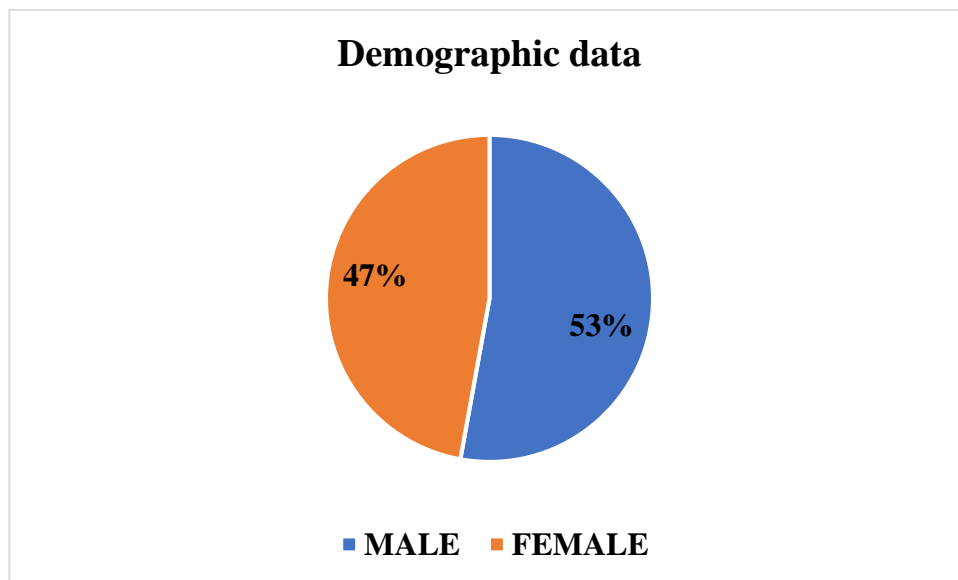


Figure 1: Pie diagram showing the ratio of responses of the genders. Of the respondents 47% were female and 53% were male.

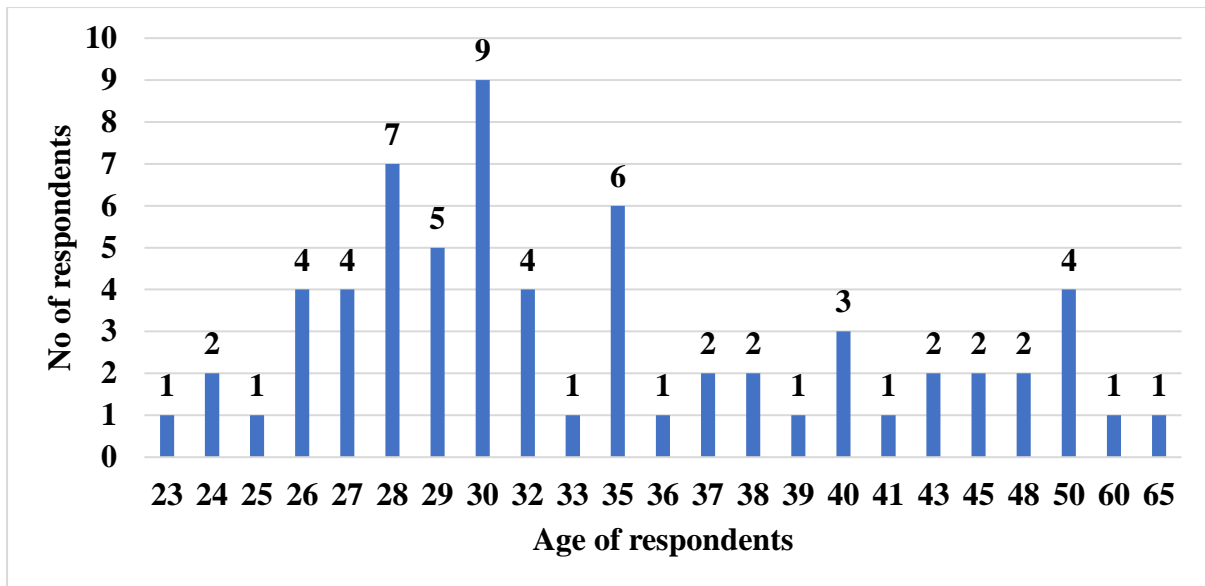


Figure 2: Bar diagram showing number and percentage of responses of different age groups. Most of the respondents were in 18-30 yrs (47.1%), followed by 31-45yrs (41.5%).

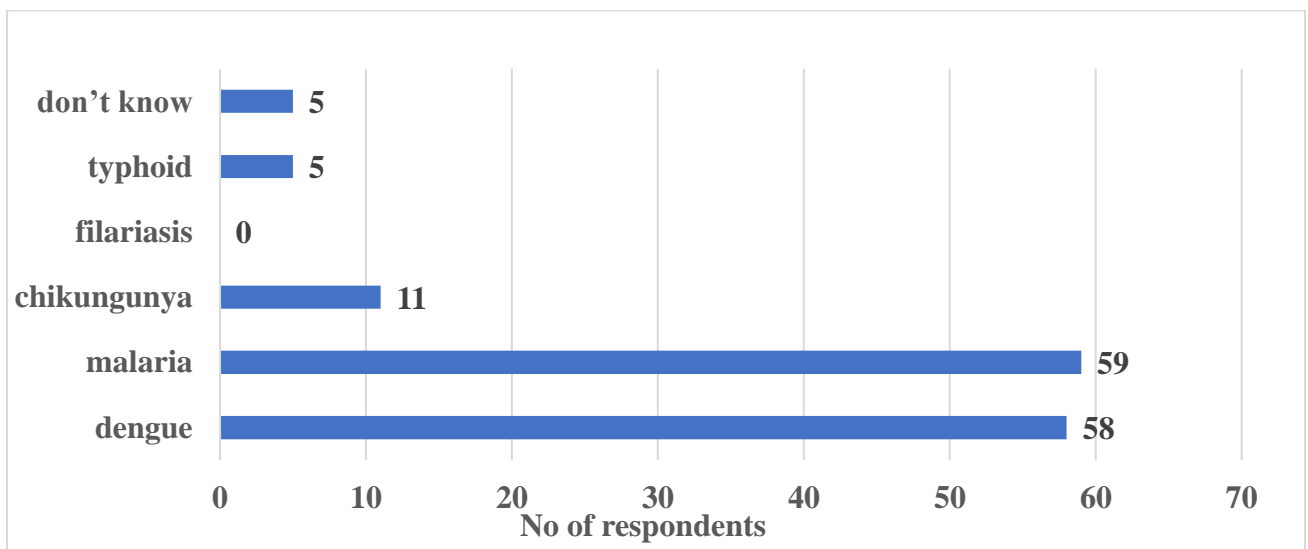


Figure 3: Bar diagram showing that 84.3% (59) and 82.9% (58) identified malaria and dengue as diseases that can be transmitted through mosquitoes, while others were not able to identify.

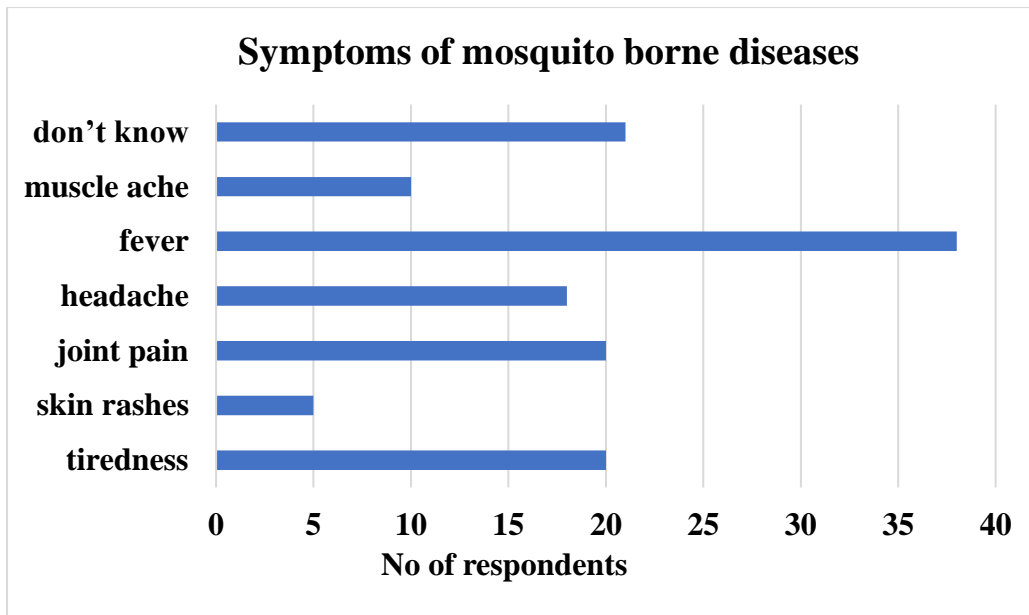


Figure 4: Bar diagram showing fever as the most common symptom identified by 54.3%(38) while 30%(21) participants were not able to identify any of the symptoms.

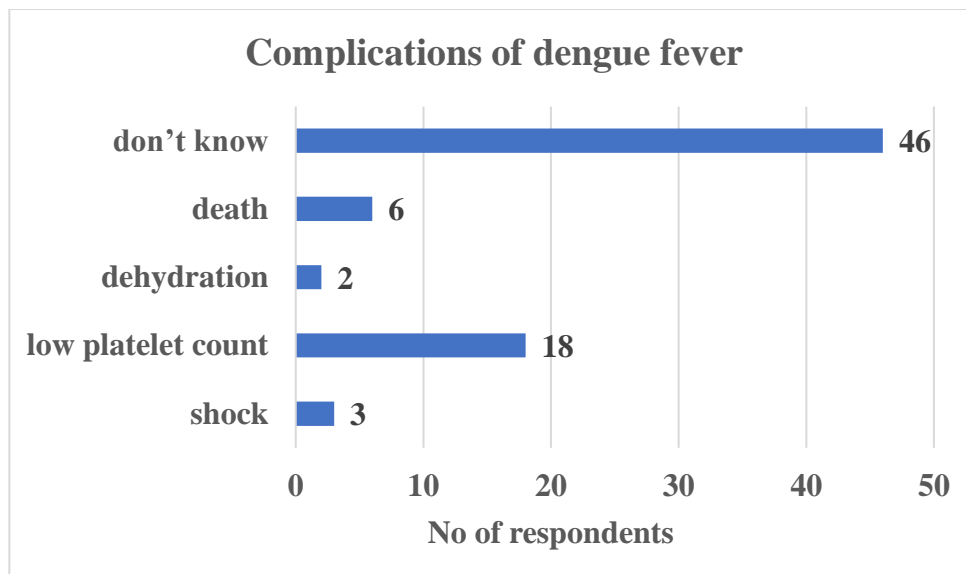


Figure 5: Bar diagram showing the complications of dengue fever. Most of the participants (65.7%) were not aware of the complications.

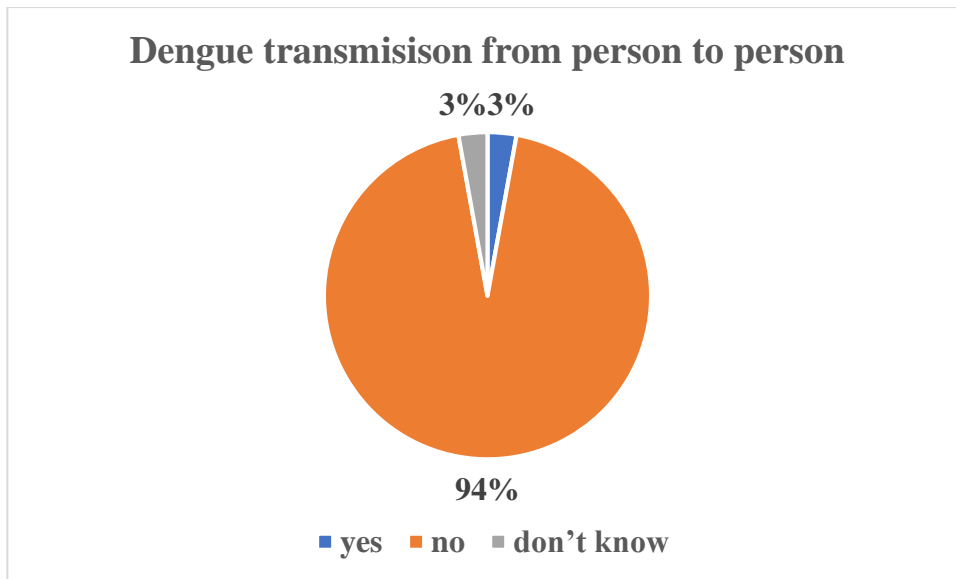


Figure 6: Showing that 94% (66) participants were aware that dengue is not transmitted from person to person.

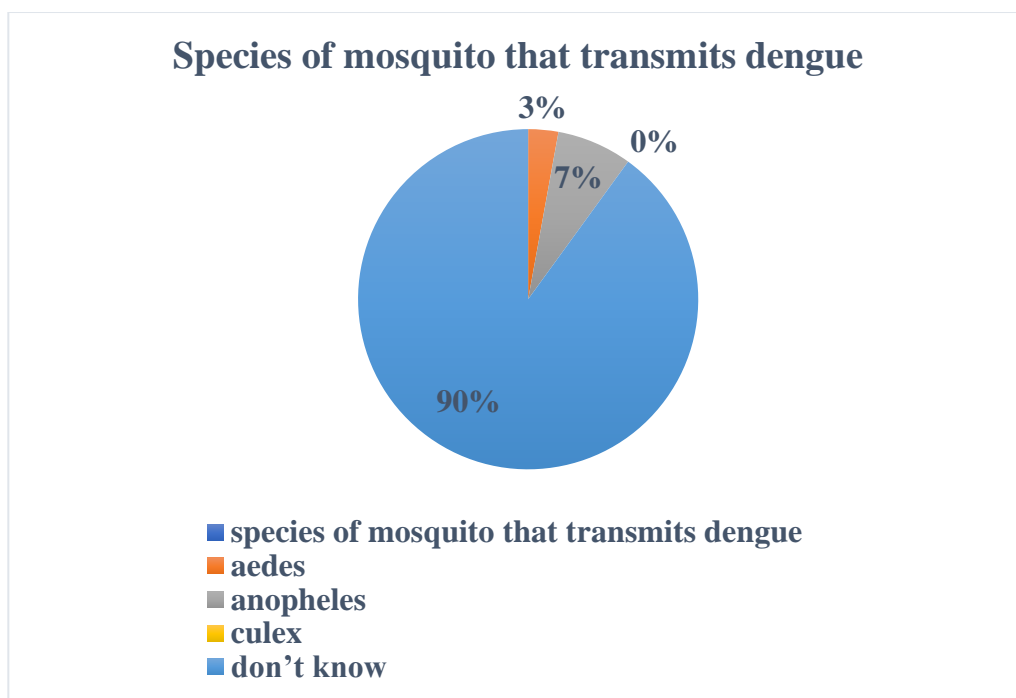


Figure 7: Showing that majority of participants were unable to identify the species of mosquito responsible for dengue transmission.

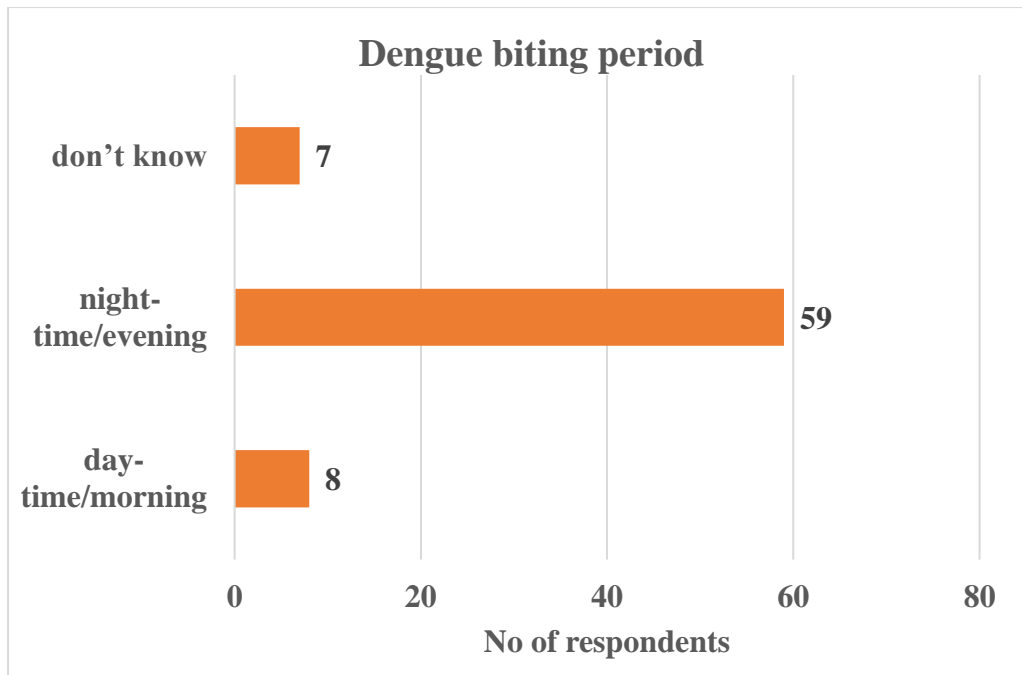


Figure 8: Showing that 84.3% (59) participants believed that night-time/evening was the most frequent mosquito biting period.

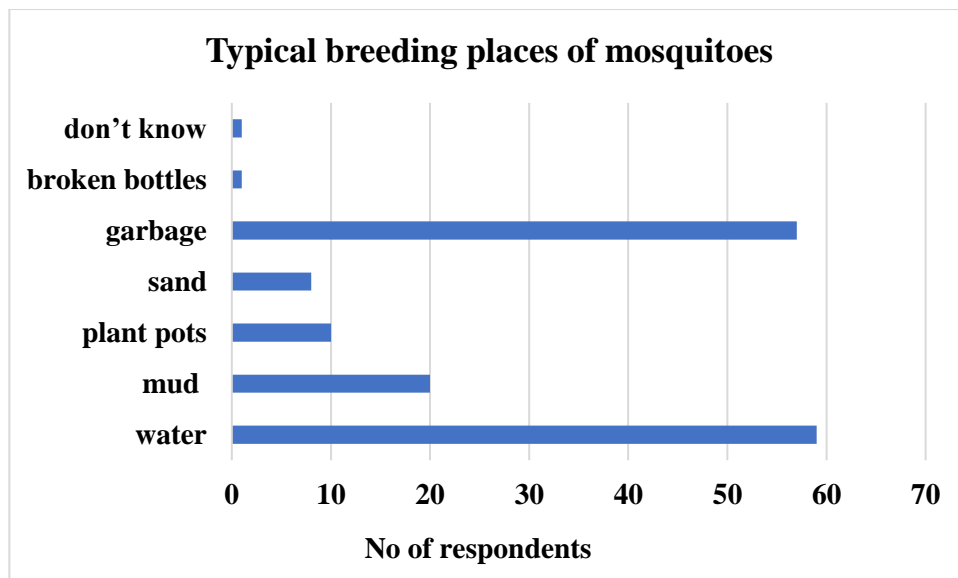


Figure 9: Showing that 84.3% (59) and 81.4% (57) identified water and garbage as the major breeding sites for mosquitoes.

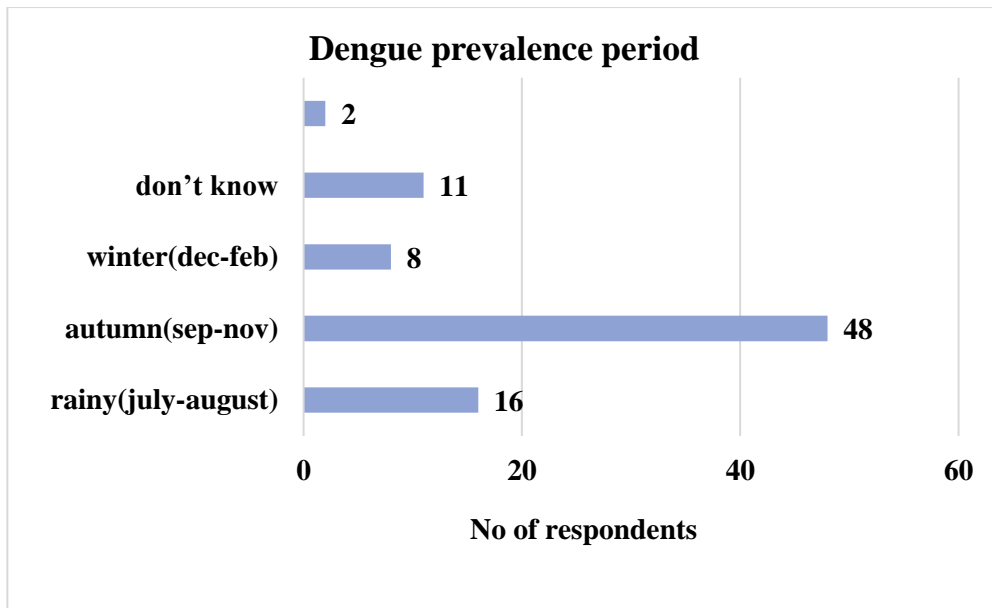


Figure 10: Showing that dengue is believed to be more prevalent in rainy season and least prevalent in autumn.

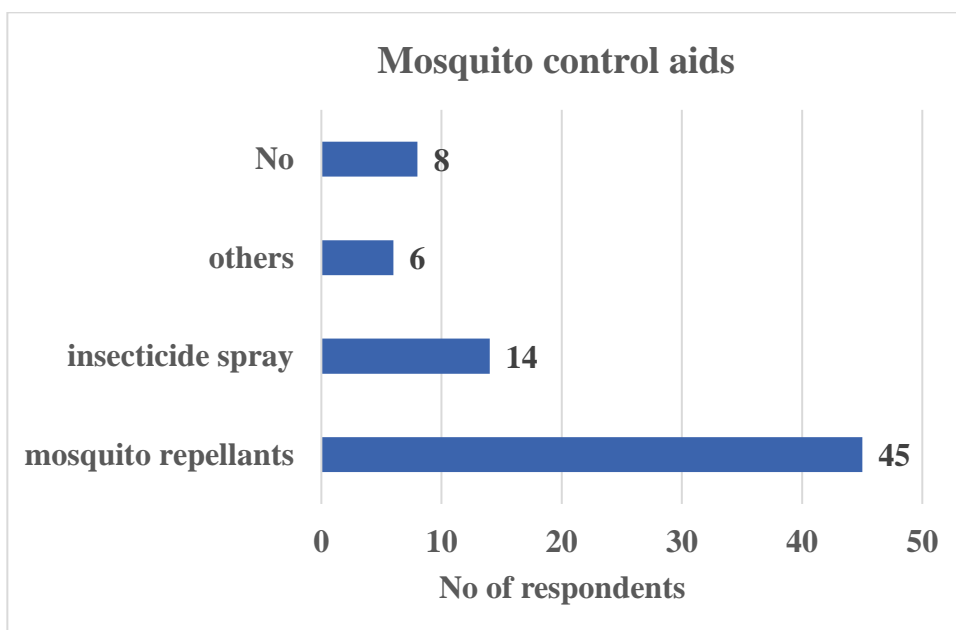


Figure 11: Showing that mosquito repellants were the most commonly used (64.3%) mosquito control aids during sleep at night followed by insecticidal spray (20%).

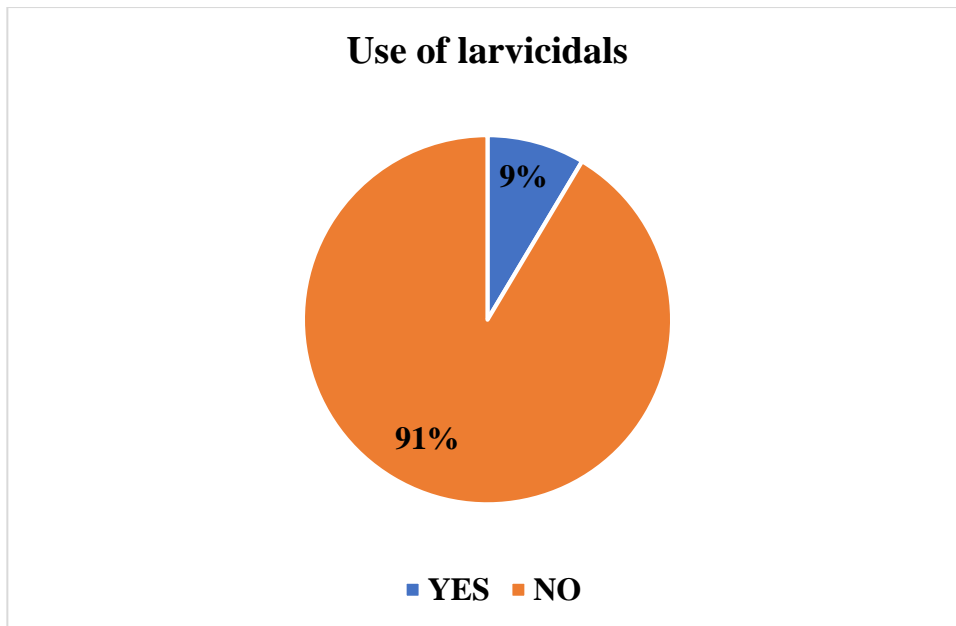


Figure 12: Showing that majority of people do not make use of kerosene/ larvicidals. The respondents were unaware of larvicidals and hesitant to use them citing the risk of any possible harmful effect from coming in contact with larvicidals.

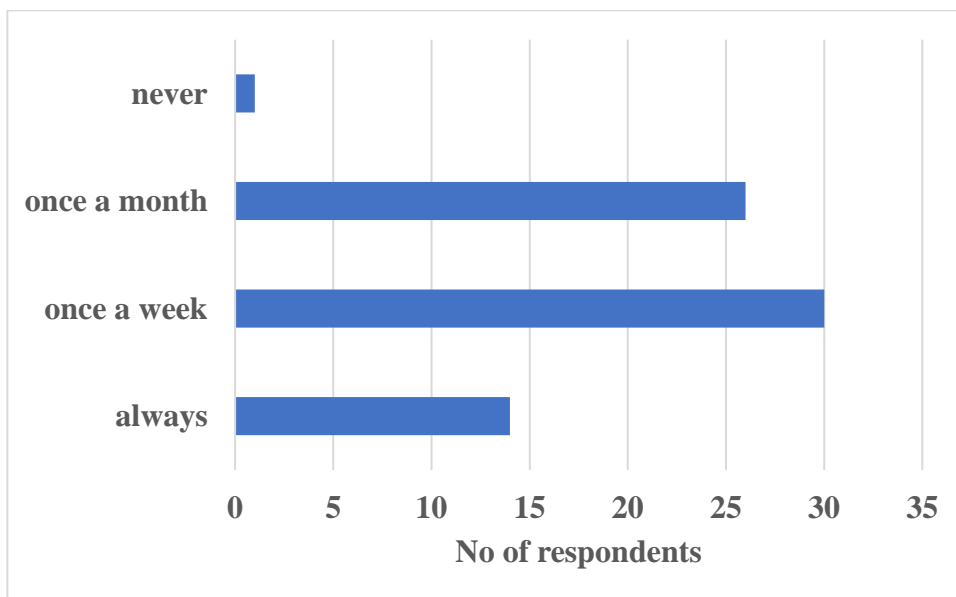


Figure 13: Showing that 42.9% of participants cleaned water filled containers at least once a week.

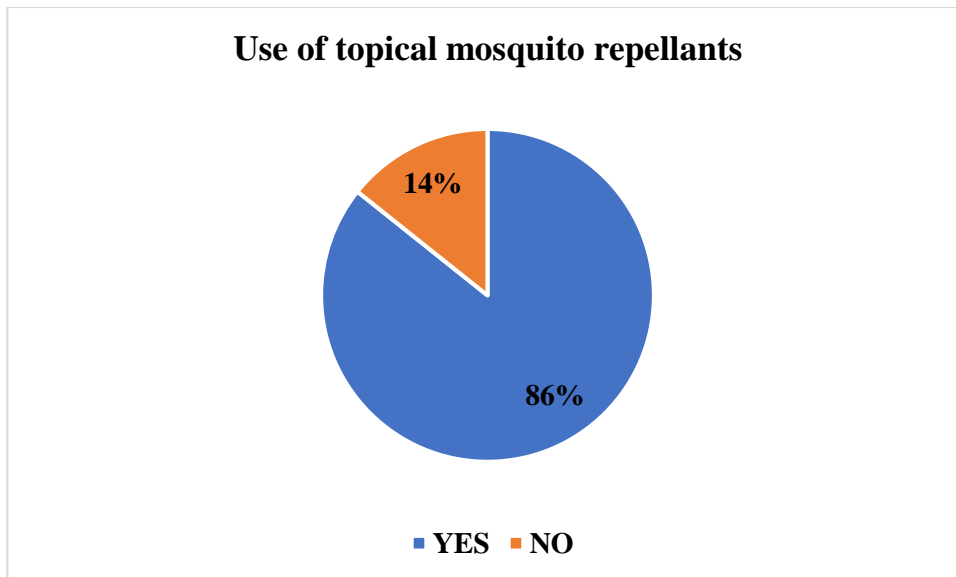


Figure 14: Showing that majority of the people (86%) did not apply any topical mosquito repellents to exposed parts of body.

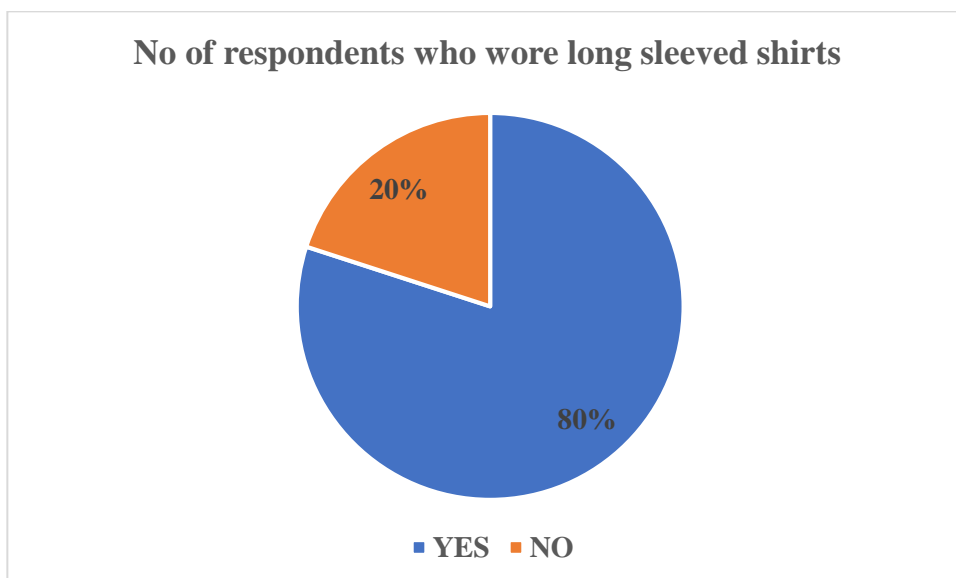


Figure 15: Showing that 80% people wear long sleeved shirts and long trousers to avoid mosquito bites.

DISCUSSION:

According to the findings of our study, the residents of Peerancheru village have a lack of information about dengue fever. Our findings show that mosquito breeding sites, such as plant pots (10%) and mud (28.8%), are similar to a study conducted in Palakkad by Sridevi Chakkanmattil *et al.*,⁷ where mosquito breeding sites in plant pots were 10%, and a study correlated to the results of our study regarding breeding sites, such as mud at 28.6% and 38.6% in KhadervaliNagoor *et al.*,⁶ which was conducted in an urban area.

In our research, mosquito repellents (64.3%), insecticide spray (20%), and other (11.4%) preventive strategies were shown to be effective in our research. These findings are similar to those of a study conducted on urban populations in Tamil Nadu by Varun *et al.*,⁸ which found that 55.2 percent of mosquito repellents were used, as well as a study conducted on urban slums in South India by KhadervaliNagoor *et al.*,⁶ which found that 11 percent of people did not use any method. Also, in a study of two rural areas and two slums in Chandigarh by Geethu Malhotra *et al.*,⁹ the use of mosquito repellents was 63.75 percent, which is almost identical to our study's 64.3 percent.

The research was carried out at the Pondicherry Institute of Medical Science, which is located on the east coast road. BershicValantine *et al.*,¹⁰ found that 43 percent of people use insect repellents, SAVW.

In a study conducted in the urban slums of Shaikpet by Pavani Verma *et al.*,¹¹ in 2020, comparable preventive measures were found, with creams 87 percent and 85.7 percent in our study and nets 97 percent and 92.9 percent in our study, which is nearly identical.

A study in northern India by Pankaj Pk *et al.*,¹² found practically identical results in terms of mosquito repellent usage (63.6 percent vs. 64.3 percent in our current study).

And do not use any method. 14.4 percent in the study conducted by Pankaj *et al.*,¹² whereas 11.4 percent in our study.

A study conducted in rural areas of Kancheepuram district by A. Johnpaul *et al.*,¹³ found that 78.5 percent of people use mosquito repellent, and 76.2 percent use window mesh, which is similar to our findings of 64.3 percent and 92.9 percent, and also to a study conducted in wardha districts of Maharashtra by Amar Taksande *et al.*,¹⁴ which found that mosquito repellents are used 57.8 percent and 64.3 percent in our recent study.

In our study, the biting time of dengue mosquitos was found to be 11.4 percent during the day, 84.3 percent during the night, and 10% unknown, which is similar to a study conducted in urban slums of Tamil Nadu by KhadervaliNagoor *et al.*,⁶ which found that the biting time of dengue mosquitos was 74 percent during the night. Also, according to a study conducted by Geethu Malhotra *et al.*,⁹ in two slums and two rural areas of Chandigarh, nighttime is 56.62 percent and any time is 27.37 percent, which is very identical to our study data.

Malaria 84.3 percent, chikungunya 15.7 percent, dengue 82.9 percent, filariasis 0 percent, typhoid 7.1 percent, and don't know 7.1 percent were the outcomes of our knowledge of diseases spread by mosquitoes in our survey. This is in line with KhadervaliNagoor *et al.*'s,⁶ study of dengue fever (68%) and malaria (91%) in urban slums in South India. Also, according to Js Meena *et al.*'s,¹⁵ study, the knowledge regarding diseases transmitted by mosquitoes, i.e., dengue fever, is 58 percent and malaria, 56 percent, which is very comparable to our current findings.

The results of our study's knowledge of dengue symptoms were tiredness at 28.6%, skin rashes at 7.1 percent, joint pain at 28.6%, headache at 25.7 percent, muscle aches at 14.3%, fever at 54.3 percent, and don't know at 3 percent, which was more similar to the study conducted by S. Matta *et al.*,¹⁶ which found fever at 59 percent.

Always 20%, once a week 42.9 percent, once a month 37.1 percent, and never 1.5 percent are our results for clean or empty water filled containers and ditches. Which is almost identical to the results of Pankaj *et al's.*,¹² study, which found that once a week 62 percent and never 24 percent.

Our study results on the use of long-sleeved shirts and trousers are yes 80% and no 20%, which is slightly higher than Pankaj *et al's.*,¹² study, which found yes 84.7 percent.

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The completion of this research, that represents a simple footstep in the stepladder of the dengue. "ASSESSMENT OF KNOWLEDGE, AWARENESS AND COUNSELLING ON DENGUE CONTROL MEASURES IN URBAN POPULATION OF HYDERABAD" is definitely not achieved by the attempt and effort of one individual person and would not be possible without the collaboration of all members of Department of pharmacy practice, Shadan college of pharmacy.

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