



# A Study on Knowledge, Attitude and Practices Regarding Dengue Fever Among Parents from a Tertiary care Center in Mangalore, India

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## Article History

Received on - 2023 Jun 29

Accepted on - 2023 Dec 21

## Keywords:

Attitude; education, Dengue, Parents Knowledge; Practices

## Online Access



DOI: <https://doi.org/10.60086/jnps90>

## Abstract

**Introduction:** Dengue fever has emerged as an endemic threat in many parts of South India. Therefore, awareness among parents regarding the preventive measures and early identification of symptoms of the disease in children is of prime importance. The present study was conducted to assess the level of awareness among parents regarding various aspects of dengue.

**Methods:** Questionnaire based descriptive study was conducted in both out-patient and in-patient basis in a Medical College Hospital in Mangalore, Karnataka. Data analysis was done by calculation of the percentage of correct responses and p value to determine the correlation between knowledge, attitude and practice score.

**Results:** Total of 94 parents were interviewed. Majority were below 30 years of age (45.7%) and had a family income of 10,000 to 50,000 per month (62.8%). Majority of parents (89.4%) had good knowledge about dengue fever. 90.4% of parents had a positive attitude and 89.4% received a good score in practice assessment. Statistically significant association was observed between knowledge and the attitude (p value = 0.005) and between the knowledge and dengue preventive practices (p value = 0.002). Demographic factors like age, sex, family income did not show any significant association with knowledge, attitude and practices while health education had.

**Conclusion:** Significant association was noted between knowledge and dengue preventive practices. Education had significant association with dengue knowledge, attitude and practices.

## Introduction

Dengue fever has become one of the biggest threats among other vector borne diseases claiming lives despite improvement in disease management. About 30 times increase in dengue cases have been reported globally since the past 50 years.<sup>1</sup> About half of the world's population is now at risk of dengue with an estimated 100 – 400 million infections occurring each year and it still continues to prevail despite various measures taken.<sup>2</sup> In such a scenario, improving the knowledge, attitude and practices of parents is of prime importance to be able to prevent and identify dengue early and with this objective, the study was conducted. We intended to study the knowledge, attitude and practices regarding dengue fever among parents.

## Methods

A questionnaire based descriptive study was conducted in both out-patient and in-patient basis to assess the level of awareness among parents regarding various aspects of dengue in a Medical College Hospital in Mangalore, Karnataka. Sample size was calculated as 94 (Sample size =  $Z_{\alpha}^2 * p * (1-p) / d^2$ , where  $Z_{\alpha} = 1.96$  at

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5% level of significance,  $P = \text{prevalence} = 57.9 = 0.579$ ,  $D = 10\% = 0.1$  and therefore,  $x = 94$ ). Institutional ethical clearance was obtained. Written informed consent was obtained and the parents were given an elaborate set of questions to evaluate their current knowledge about dengue. Details of the respondents including their name, age, monthly income, etc were collected. The questionnaire was based on available literature and was divided into the following parts – Knowledge regarding signs and symptoms and transmission of the disease, Practices used in prevention and attitude towards disease. The assessment was done using a scoring system based on the current literature. In knowledge assessment, each correct response was given a score of 1, while the wrong response or 'Don't know' was scored 0. In attitude assessment, positive attitude was scored 1 while negative attitude was given 0. In the practice assessment, each 'Yes' was scored

as 1, while 'No' was given 0. The knowledge, attitude and practice of respondents were categorized as adequate if the score was  $> 50\%$  and categorized as inadequate if  $< 50\%$ . The data was entered in MS Excel and the analysis of the data was done by calculation of the percentage of correct response and p value to determine the correlation between knowledge, attitude and practice score.

## Results

A total of 94 parents were interviewed out of which 45.7% were below 30 years of age and 36.2% were between 31 - 40 years of age. 62.8% had a family income of 10,000 to 50,000 per month, while 5.3% of the parents earned above one lac per month. Their demographic characteristics with knowledge, attitude and practices are shown in table 1.

**Table 1:** Demography and Knowledge, attitude and practices.

		N	Knowledge assessment		Attitude assessment		Practice assessment	
			Poor	Good	Poor	Good	Poor	Good
Age	30 and below	43	14.0%	86.0%	16.3%	83.7%	4.7%	95.3%
	31 - 40	34	8.8%	91.2%	2.9%	97.1%	20.6%	79.4%
	Above 40	17	5.9%	94.1%	5.9%	94.1%	5.9%	94.1%
Family income (INR)	Upto 10,000	11	9.1%	90.9%	9.1%	90.9%	18.2%	81.8%
	10,000 - 50,000	59	15.3%	84.7%	11.9%	88.1%	11.9%	88.1%
	50,000 - 1,00,000	19	0.0%	100.0%	5.3%	94.7%	5.3%	94.7%
	Above 1,00,000	5	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%

There were nine questions in the questionnaire to assess knowledge. A score of  $\leq 4$  and  $> 4$  was considered as having poor and good knowledge regarding dengue awareness, respectively.

**Table 2:** Knowledge assessment

Responses	Correctly answered (%)
Knows dengue vector	94.7%
Knows mosquito species causing dengue	19.1%
Type of water acting as breeding place	95.7%
Time of day for mosquito bite	20.2%
Practice to prevent-mosquito repellents	81.9%
Identifies symptom - Fever	95.7%
Identifies symptom - Skin rash	23.4%
Identifies symptom - Joint pain	54.3%
Identifies symptom - Headache	77.7%

Parents with correct knowledge about dengue vector were 94.7% while only 20.2% of parents knew about the right time of mosquito bite for dengue transmission. Parents who identified fever as a symptom of dengue were 95.7% while only 23.4% of parents could identify skin rash as a symptom (Table 2). 94.1% of the parents above 40 years of age had good knowledge about dengue (Table 1). Attitude towards dengue fever was considered good or poor based on seven questions asked. A score of  $\leq 4$  and  $> 4$  was considered as having a poor and good attitude, respectively.

**Table 3:** Attitude and practice assessment

Attitude	Fully agree (%)
Serious illness	69.1%
Required to consult	93.6%
Preventable	91.5%
Individual prevention	68.1%
Difficult to diagnose	71.3%
Fatal	69.1%
Govt responsibility	85.1%
Practices	Followed (%)
Repellent equipment usage	80.9%
Repellent cream usage	52.1%
Rid of stagnant water	88.3%
Covering body	75.5%
Proper waste disposal	85.1%
Cover container	88.5%
Smoke usage	41.5%

Parents who agreed that dengue fever is a serious illness were

69.1% while 71.3% thought it was difficult to diagnose (Table 3). Out of the parents interviewed between 31 - 40 years of age, 97.1% had a good attitude towards dengue prevention and management while only 2.9% had a poor attitude (Table 1). Practices regarding dengue fever were considered good or poor based on questions asked. A score of  $\leq 4$  and  $< 4$  were considered poor and good respectively. Parents who practiced proper waste disposal to prevent dengue were 85.1% while only 52.1% of parents used repellent creams (Table 3). Among the parents interviewed with a family income below 10,000 rupees, only 18.2% had a poor score while 81.8% had a good score (Table 1).

Statistically significant association was observed between knowledge and the attitude of the parents towards dengue ( $p$  value = 0.005). Similarly, there was a significant association between knowledge and the attitude of the parents regarding dengue ( $p$  value = 0.002). No significant association was observed between the age of the parents and knowledge of the dengue fever with  $p$  value = 0.601 (Table 4).

**Table 4:** Association of knowledge and demographic characteristics with attitude and practices

		Attitude		Practices
Knowledge assessment	P	.005		.002
	P	sig		sig
		Knowledge assessment	Attitude	Practices
Age	P	.601	.121	.062
Family income	P	.240	.730	.588
Anyone in family has had Dengue	P	.029	.416	.485
Education about dengue	P	.002	.942	.612

## Discussion

Our study showed that the majority of parents (89.4%) had good knowledge about dengue fever. In comparison, study by Shuaib et al<sup>3</sup> showed only 54.4% of parents had adequate knowledge of dengue fever. Most of the parents identified fever as a symptom of dengue fever in our study (95.7%) and 85.5% respondents identified fever in a study by Nguyen HV et al.<sup>4</sup> More than three fourth of the parents rejected skin rash as a symptom (Table 2). Skin rash was also one of the least identified symptoms (5.5%) in the study conducted by Hossain Md I et al.<sup>5</sup> This could be because participants had not been infected with dengue fever or had seen a close relative suffer from dengue. Lack of adequate knowledge about the symptoms of dengue fever can lead to late diagnosis of the disease, making it prone for complications. It was observed that only 69.1% of the parents agreed to the fact that dengue is a serious illness (Table 3) showing a positive attitude which is much lower than studies by Alyousefi et al<sup>6</sup> where 97.7% of the participants showed a positive attitude. This could be attributed to the better health care facilities available to our study population leading to lesser morbidity and mortality

due to dengue, mistaking it for the less serious nature of the course of dengue fever. Another difference in attitudes seen in different study populations could be due to different cultural beliefs and educational backgrounds.

Among the practices used to prevent dengue fever by parents, the most popularly used was covering water containers (88.5%) and proper waste disposal (85.1%) while the least commonly used was smoke (41.5%) to drive away mosquitoes (Table 3). But in the study conducted by Alyousefi et al, using creams and fans for repelling mosquitoes were the least used practices by the participants, being reported by 31.3% and 16.2 % of participants respectively.<sup>6</sup>

Certain limitations of our study that are noteworthy include the small sample size which may have missed out on smaller associations and lead to a decrease in precision of the results. It can also be a possibility that while answering the questionnaire, several participants gave socially acceptable answers for a better score. Being a single centre study with concentrated local population, our results may be difficult to be generalized to the entire population. Hence, it is recommended that our results need to be substantiated by

more elaborate, multi centric studies to pave the pathway in the eradication of this communicable disease. Increasing the knowledge of the community regarding vital information about transmission and symptoms of dengue fever can result in a positive attitude towards the disease and more adoption of practices to reduce the incidence of dengue fever. This can be done by focusing on health education through various channels like mass media, social media, etc.

## Conclusion

The findings conclude that the majority of parents (89.4%) had good knowledge and positive attitude about dengue fever. Dengue preventive practices was significantly associated with knowledge. Health education had positive correlation with dengue knowledge, attitude and practices whereas demographic factors like age, sex, family income did not show any significant association. Good level of knowledge translates to better attitude and practices for prevention of dengue which could be crucial for reducing the prevalence this disease in the future.

## Funding Sources

None

**Acknowledgement** We would like to thank all the respondents who took part in our research.

## Conflict of Interest

None

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