

## Knowledge today, protection tomorrow: Understanding vector-borne diseases

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### Abstract

Vector-borne diseases (VBDs) remain a major public health concern, particularly in regions with mixed rural and urban populations. Assessing community knowledge and awareness is essential for effective prevention and control strategies.

This study aimed to assess the level of knowledge regarding vector-borne diseases among residents of the Pathanamthitta and Alappuzha districts. A prospective study was conducted among 200 participants from rural and urban areas. Data were collected using a structured questionnaire to evaluate knowledge of disease causes, symptoms, and transmission modes. The findings revealed that the majority of participants had good knowledge of VBDs, while only a few demonstrated poor knowledge. More than half of the respondents were aware of the causes of these diseases, and about half were familiar with the symptoms. Over half of the participants understood the principal mode of transmission. Most respondents recognised VBDs as a major public health threat. In terms of personal concern, the majority were somewhat or very concerned about contracting such diseases, while only a small portion expressed little or no concern. In conclusion, most participants demonstrated satisfactory knowledge and awareness of vector-borne diseases, though knowledge gaps persist regarding disease causes and transmission. Strengthening community-based education and awareness programs is recommended to enhance preventive strategies and reduce disease burden.

**Keywords:** Dengue; Malaria; Chikungunya; Knowledge; Vector Borne Diseases

### 1. Introduction

Vector-borne diseases (VBDs) are illnesses transmitted to humans and animals through the bites of infected arthropods such as mosquitoes, ticks, sandflies, and fleas. These diseases remain a major public health concern worldwide, particularly in tropical and subtropical regions. According to the World Health Organisation (WHO), vector-borne diseases account for more than 17% of all infectious diseases globally and cause over 700,000 deaths each year.<sup>1</sup>

Common vector-borne diseases include Malaria, Dengue fever, Chikungunya, Zika fever, Yellow fever, and Lyme disease. These diseases are primarily transmitted by vectors such as mosquitoes (e.g., *Aedes* and *Anopheles* species) and ticks. Environmental factors such as climate change, urbanisation, poor sanitation, and inadequate waste management contribute significantly to the spread of vectors and the diseases they transmit.<sup>2</sup>

Despite various national and international control programs, vector-borne diseases continue to pose significant health, social, and economic burdens. Prevention and control largely depend on community participation, awareness, and proper preventive practices such as the use of insecticide-treated nets, environmental sanitation, vaccination (where available), and early treatment-seeking behaviour.<sup>3</sup>

Assessing knowledge regarding vector-borne diseases is essential to identify gaps in awareness, misconceptions, and risky behaviours among the population. Understanding the level of knowledge helps healthcare professionals and

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policymakers design targeted health education programs and effective intervention strategies to reduce morbidity and mortality associated with these diseases.

Therefore, this study aims to assess the knowledge regarding vector-borne diseases among the selected population and to identify factors influencing their awareness and preventive practices.

## 2. Materials and methods

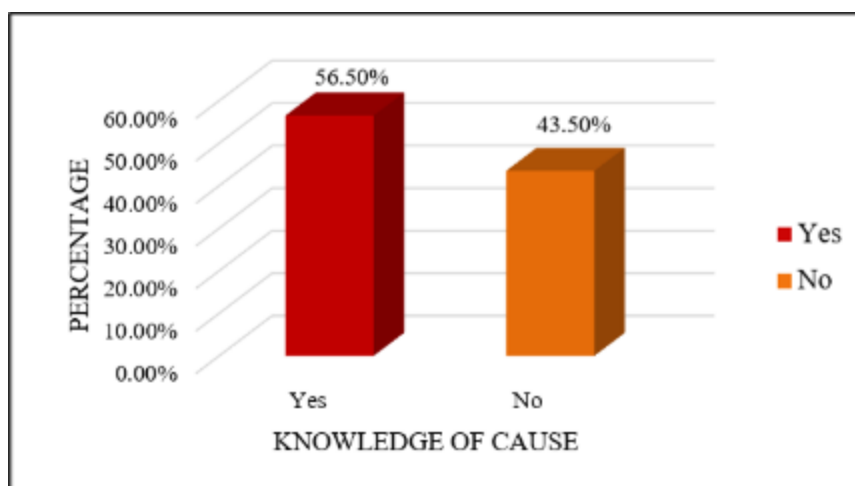
This study was conducted using a prospective design over a six-month period, from December to May, in the Pathanamthitta and Alappuzha districts. A total sample size of 200 participants was included in the study.

The study included patients who were diagnosed between 2016 and 2025. Individuals who were unwilling to provide details and those with cognitive impairments or dementia were excluded from participation. Relevant data were collected through a community survey using a pre-designed data collection form and an informed consent form. A validated semi-structured questionnaire was used as the data collection tool.

The objective of this prospective-retrospective study was to assess the level of knowledge regarding vector-borne diseases among residents of the Pathanamthitta and Alappuzha districts. Data collection forms were distributed to gather sufficient information, and awareness was provided to improve knowledge and attitudes regarding vector-borne diseases. The socio-demographic variables collected included age, gender, education, employment status, socio-economic status, and place of residence. The collected data were entered into MS Excel and analysed statistically. The results were presented in tabular form as frequencies and percentages, and the overall of the level of knowledge regarding vector-borne diseases was calculated accordingly.

## 3. Results

### 3.1. Knowledge of cause of vector-borne disease

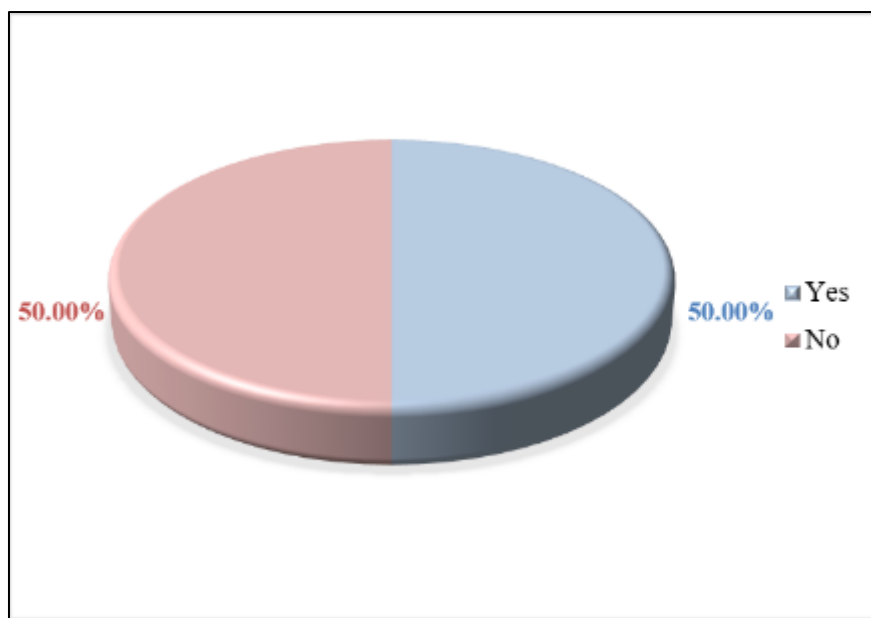


**Figure 1** Distribution of knowledge of the cause of vector-borne disease among subjects

The distribution of knowledge of cause of vector-borne disease is shown in Figure No. 1, the data is categorized into two groups. Those who have the knowledge of cause and those who did not. (56.50%) have knowledge of the cause of VBD, and (43.50%) did not have knowledge of the cause of VBD.

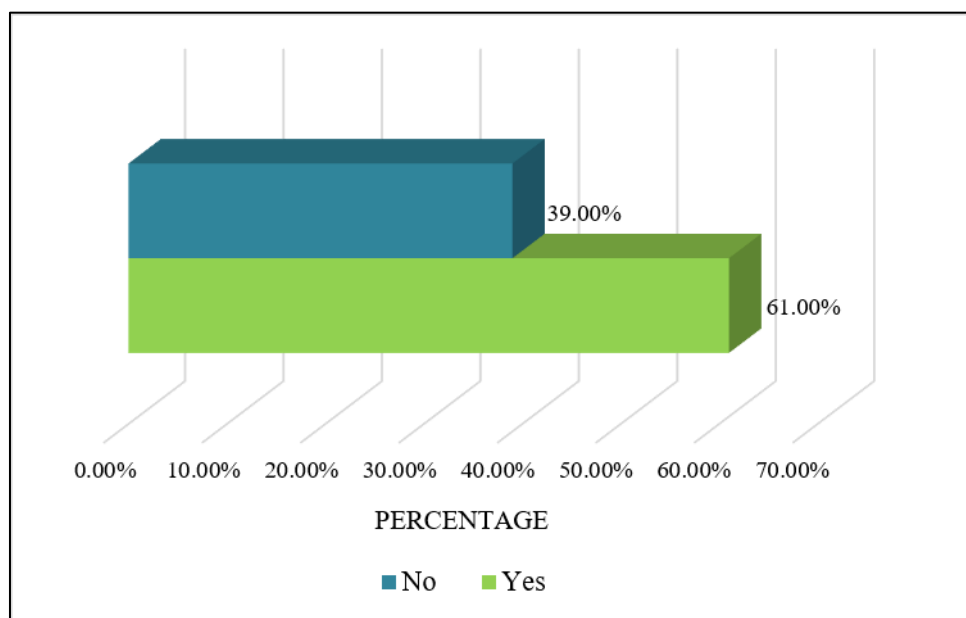
### 3.2. Knowledge of symptoms of vector-borne disease

The distribution of knowledge of the symptoms of vector-borne disease is shown in Figure No. 2: half (50.00%) of the population knows VBD symptoms, and half (50.00%) do not. This suggests a balanced distribution of knowledge of symptoms of VBD among study subjects



**Figure 2** Distribution of knowledge of symptoms of vector-borne disease

### 3.3. Knowledge of the mode of transmission of vector-borne disease

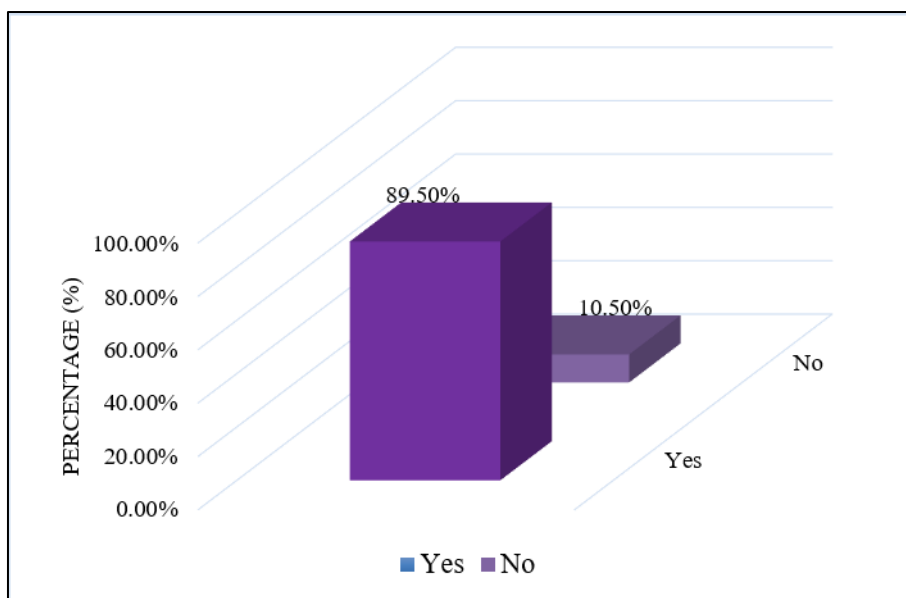


**Figure 3** Distribution of knowledge of the mode of transmission of vector-borne disease

The distribution of knowledge of the mode of transmission of vector-borne disease displayed in Figure No. 3, (61%) were aware of the primary mode of illness transmission, whereas (39%) were not.

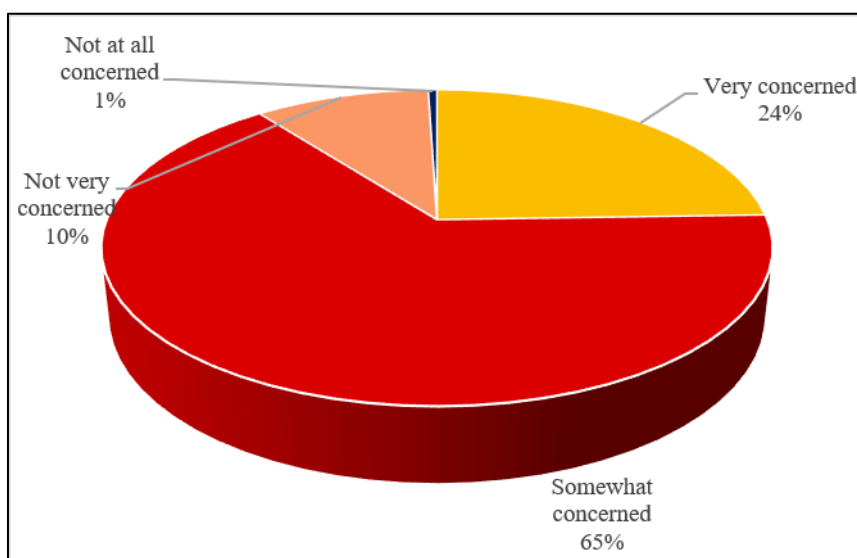
### 3.4. Vector-borne disease as a threat to public health

The distribution of considering vector-borne disease as a threat to public health displayed in Figure No. 4, the majority of subjects (89.50%) consider VBD as a threat to public health, whereas (10.50%) not. This suggests that the overwhelming majority of subjects perceive VBD as a significant threat to public health.



**Figure 4** Distribution of considering vector-borne disease as a threat to public health

### 3.5. Concern about contracting vector-borne disease

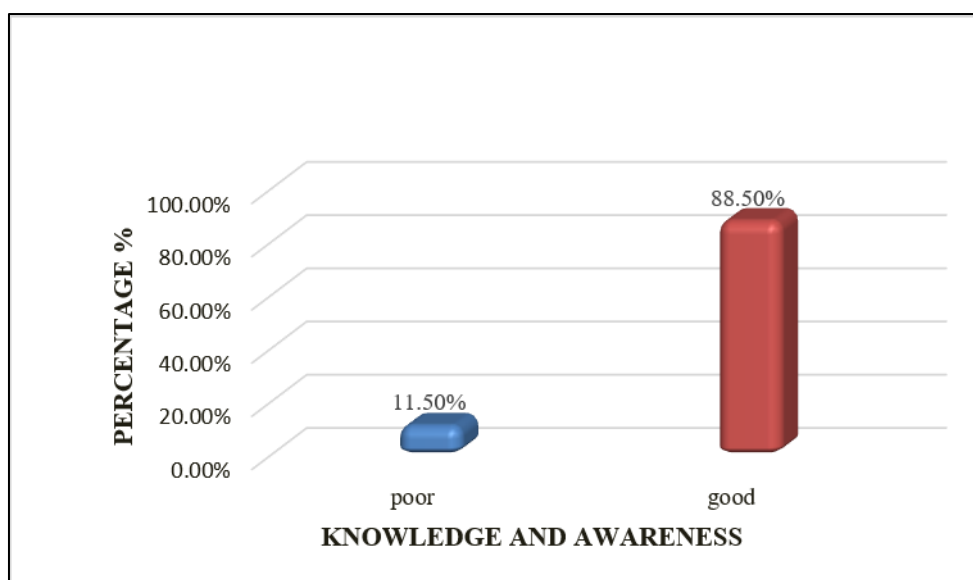


**Figure 5** Distribution of concern about contracting vector-borne disease

The distribution of concern about contracting VBD represents in Figure No. 5, it is divided into 4 sections, each representing a different level of concern (24%) were very concerned, (65%) were somewhat concerned, (10%) were not very concerned and (1%) were not at all concerned about contracting VBD. The majority of people (65%) are somewhat concerned about contracting VBD.

### 3.6. Scoring for knowledge regarding vector borne disease

The distribution of scoring for knowledge regarding vector-borne disease is shown in Figure No. 6; it categorises the knowledge into 2 groups: poor and good. (88.50%) have good knowledge and (11.50%) have poor knowledge regarding VBD. The significant majority of subjects (88.50%) demonstrate good knowledge.



**Figure 6** Distribution of scoring for knowledge regarding vector-borne disease

#### 4. Discussion

In our study, 88.50% had good knowledge regarding vector-borne disease, and 11.50% had poor knowledge. 56.50% know the cause of VBD, and 43.50% did not know the cause of VBD. Half of the population knew the symptoms of VBD, and half did not know the symptoms of VBD. 61% were aware of the principal mode of illness transmission, whereas 39% were not. 89.50% have VBD, which is a threat to public health, and 10.50% do not. 65% were somewhat concerned, 24.50% were very concerned, 10% were not very concerned, and 0.50% were not concerned about contracting VBD. The subjects' good knowledge about VBDs can be attributed to a combination of factors, including awareness campaigns, education, personal experience, access to information, and community-based initiatives. Understanding these factors can help inform public health strategies to further improve knowledge and prevention efforts. This was contrasted in the study conducted by **Chidri Srusti et al.**, 93.8% of the participants had obtained average and poor knowledge scores, respectively. The health education helped to improve significantly in the knowledge score.<sup>5</sup>

#### Abbreviations

- WHO : World Health Organization
- VBDs: Vector Borne Diseases

#### 5. Conclusion

This study provides valuable insights into the knowledge regarding VBD. The findings revealed that 200 participants took part in the study. A greater proportion of participants had good knowledge regarding VBDs, while a small proportion had poor knowledge.

Our study used a structured questionnaire including an awareness section. We finally conclude that our study demonstrated a significant improvement in knowledge and awareness about vector-borne diseases among the participants.

#### Compliance with ethical standards

#### Acknowledgments

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*Disclosure of conflict of interest*

No conflict of interest to be disclosed.

*Statement of informed consent*

The authors certify that they have obtained all appropriate patient consent forms from the participants in this study and their details will be concealed with due effort.

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**References**

- [1] World Health Organization. Vector-borne Diseases [Internet]. Who.int. World Health Organization: WHO; 2024. Available from: <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>
- [2] Alobuia WM, Missikpode C, Aung M, Jolly PE. Knowledge, attitude, and practices regarding vector-borne diseases in Western Jamaica. *Annals of global health*. 2015 Sep 1;81(5):654-63.
- [3] Paz S. Climate change: a driver of increasing vector-borne disease transmission in non-endemic areas. *PLoS Medicine*. 2024 Apr 4;21(4):e1004382.
- [4] Gopalan RB, Babu BV, Sugunan AP, Murali A, Ma MS, Balasubramanian R, Philip S. Community engagement to control dengue and other vector-borne diseases in Alappuzha municipality, Kerala, India. *Pathogens and global health*. 2021 May 19;115(4):258-66.
- [5] Srusti C, Vinay J, Thejaswini P, Raghavendra SK. A Study on Knowledge and Attitude on Vector-Borne Diseases among Secondary School Students in Rural Setup. *Journal of Medical Sciences*. 2022 May;8(2):127.