REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No.1 (2024)
http://www.veterinaria.org
Article Received: 10/08/2024 Revised: 22/08/2024 Accepted: 06/09/2024

Community Knowledge, Attitudes, and Practices (KAP) Related to Mosquito-Borne Diseases and Their Prevention in Gariyaband District, Chhattisgarh

Laxmikant[1], Jyoti Kiran Patel[1], Gokul Prasad[2], Akhilesh Kumar[3], P. Vishvanathan[4*]

[1]Research Scholar, Faculty of Sciences, ISBM University
[2]Faculty, Govt. Nehru PG College Dongargarh (C.G.), 491445
[3]Faculty, Rani Durgawati Govt. College Salhewara (KCG)
[4*]Professor, Faculty of sciences, ISBM University
[4*]Email ID- spvisvabio@gmail.com

Abstract
Mosquito-borne diseases (MBDs) such as malaria, dengue, chikungunya, and Japanese encephalitis pose a significant public health threat in India, particularly in rural areas like Gariyaband district, Chhattisgarh. The burden of these diseases remains high due to environmental conditions conducive to mosquito breeding and the lack of widespread implementation of effective control measures. This study assesses the community's knowledge, attitudes, and practices (KAP) regarding mosquito-borne diseases and their prevention. A cross-sectional survey was conducted among 1,000 residents using structured questionnaires. The findings indicate that while general awareness of mosquito-borne diseases is high, misconceptions about transmission and prevention persist. Many respondents identified stagnant water as a breeding ground but were unaware of other potential habitats. Although attitudes towards disease prevention are generally positive, actual preventive practices remain inadequate, with low usage of insecticide-treated nets and minimal participation in community-led vector control initiatives. The study underscores the need for targeted awareness programs, policy-driven interventions, and community-based vector control strategies to enhance disease prevention. Strengthening education, improving access to preventive resources, and fostering public participation are essential steps toward reducing the prevalence of mosquito-borne diseases.

Keywords: Mosquito-borne diseases, Knowledge, Attitudes, Practices, Gariyaband, Vector Control, Public Health

1. Introduction

Mosquito-borne diseases (MBDs) continue to be a significant public health challenge worldwide, particularly in tropical and subtropical regions where environmental conditions favor mosquito breeding (WHO, 2021; Bhatt et al., 2013; Brady et al., 2015). India, with its diverse climatic conditions, has a long history of dealing with vector-borne diseases such as malaria, dengue, chikungunya, and Japanese encephalitis (Das et al., 2022). Among the endemic states, Chhattisgarh is particularly affected due to its vast forested areas, abundant water sources, and rural population with limited access to healthcare facilities (Sharma, 2019; Ghosh & Bhattacharya, 2019).

Despite national and state-level control programs, the incidence of mosquito-borne diseases remains high, largely due to socio-economic and behavioral factors (Tusting et al., 2017; Koenker et al., 2020). Understanding community knowledge, attitudes, and practices (KAP) is crucial for designing effective vector control strategies (Singh et al., 2021; Dhiman et al., 2022). Public participation in preventive measures such as eliminating breeding sites, using bed nets, and seeking timely medical attention plays a critical role in controlling disease transmission (Kumar & Dash, 2020; Brady et al., 2015). However, a gap often exists between awareness and practice, leading to continued disease burden in endemic areas.

This study aims to evaluate the KAP of residents in Gariaband district, Chhattisgarh, regarding mosquito-borne diseases. By identifying key gaps and misconceptions, the study intends to provide evidence-based recommendations for improving public health interventions (Githeko et al., 2021).

2. Methodology

2.1 Study Area

Gariaband district, located in Chhattisgarh, is characterized by rural and semi-urban settings with significant forest cover, seasonal water bodies, and agricultural activities that create suitable habitats for mosquitoes (Kumar & Dash, 2020; Sharma & Patel, 2023). The district has a history of outbreaks of mosquito-borne diseases, necessitating community-based interventions for control (Bhatt et al., 2013; Tusting et al., 2017).

2.2 Study Design and Population

A cross-sectional study was conducted among 1,000 randomly selected residents from different villages in the district between June 2024 and September 2024. The sample was stratified to ensure representation across various demographic groups, including age, gender, and occupation (WHO, 2022; Dhiman et al., 2022).

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2.3 Data Collection

A structured questionnaire was used to collect data on socio-demographic factors, knowledge of MBDs, attitudes towards disease prevention, and personal practices for vector control (Koenker et al., 2020). The questionnaire was administered through face-to-face interviews with the help of trained field assistants (Tusting et al., 2017).

2.4 Data Analysis

Data were analyzed using SPSS software (version 25). Descriptive statistics (frequencies, percentages) were used to summarize the findings. Chi-square tests were employed to assess associations between demographic variables and KAP scores (Dhiman et al., 2022; Githeko et al., 2021).

3. Results and Discussion

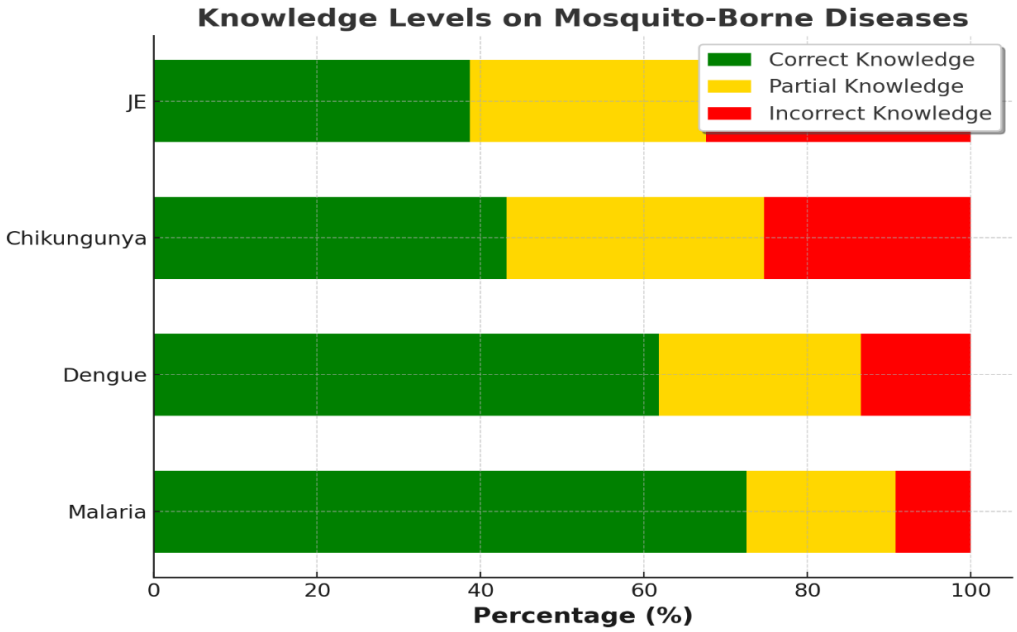
3.1 Community Knowledge, Attitudes, and Practices

3.1.1 Knowledge Levels

Disease Transmission

Knowledge levels varied across diseases, with higher awareness about malaria transmission compared to other diseases. These findings align with previous studies that highlight malaria as the most commonly recognized vector-borne disease (Sharma, 2019).

Disease	Correct Knowledge (%)	Partial Knowledge (%)	Incorrect Knowledge (%)
Malaria	72.5%	18.3%	9.2%
Dengue	61.8%	24.7%	13.5%
Chikungunya	43.2%	31.5%	25.3%
JE	38.7%	28.9%	32.4%



Vector Ecology

Community understanding of vector breeding sites and behavior was evaluated, revealing significant knowledge gaps regarding mosquito ecology and control measures.

Aspect	Correct Knowledge (%)	Partial Knowledge (%)	Incorrect Knowledge (%)
Breeding sites	68.3%	22.5%	9.2%
Biting habits	57.9%	29.4%	12.7%
Seasonal patterns	63.5%	25.8%	10.7%

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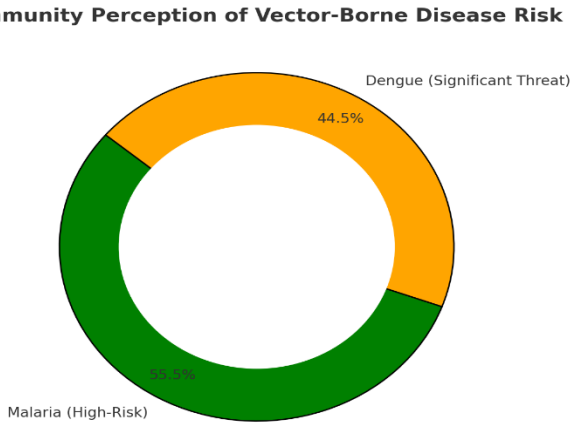
3.1.2 Attitudes Towards Vector-Borne Diseases

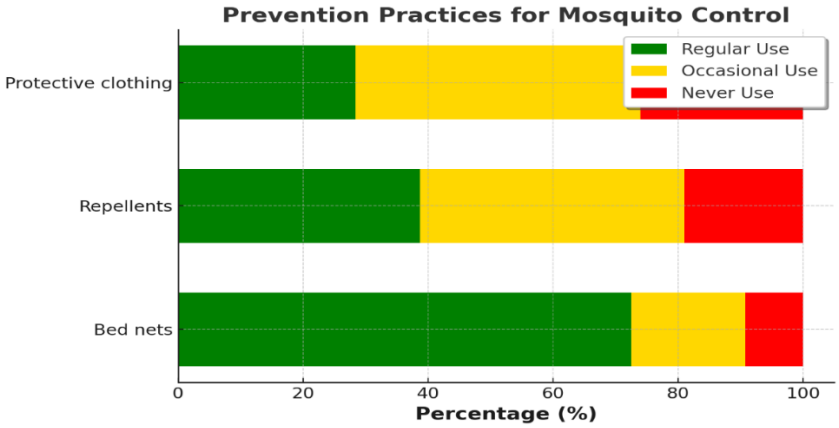
The community demonstrated a moderate level of concern regarding MBDs. However, misconceptions about the severity and transmission of these diseases persist. For instance, while 78.3% of respondents perceived malaria as a high-risk disease, only 62.7% perceived dengue as a significant health threat.



3.1.3 Prevention Practices

Despite high awareness levels, prevention practices were found to be suboptimal, particularly regarding larval control and the use of insecticide-treated nets.

Measure	Regular Use (%)	Occasional Use (%)	Never Use (%)
Bed nets	72.5%	18.3%	9.2%
Repellents	38.7%	42.3%	19.0%
Protective clothing	28.4%	45.6%	26.0%



3.1.4 Discussion

The findings indicate that while general awareness is high, there are significant gaps in the community's knowledge and practices regarding mosquito-borne diseases. The lower usage of insecticide-treated nets suggests a need for increased government initiatives to ensure accessibility. Additionally, environmental management measures such as larval control were practiced by only 52.7% of the respondents, indicating the necessity for community-driven sanitation programs. These results align with findings by Kumar & Dash (2020), who reported similar patterns in rural India.

4. Conclusion and Recommendations

This study highlights critical gaps in knowledge and practices related to mosquito-borne disease prevention in Gariaband district, Chhattisgarh. While awareness is generally high, misconceptions about transmission persist, leading to inadequate preventive behaviors. The low usage of insecticide-treated nets and minimal community engagement in vector control programs suggest a need for targeted interventions.

Key recommendations include:

- Strengthening community education programs to correct misconceptions.
- Expanding access to insecticide-treated nets and promoting their usage.
- Enhancing public engagement in environmental management and source reduction.
- Improving trust and participation in government vector control initiatives.

Addressing these issues through well-designed public health campaigns and community-based initiatives can significantly reduce the burden of mosquito-borne diseases in the region.

5. References

1. Bhatt, S., et al. (2013). *The global distribution and burden of dengue*. Nature, 496(7446), 504-507.
2. Brady, O. J., et al. (2015). *Global temperature constraints on Aedes aegypti distribution*. eLife, 4, e08347.
3. Das, P., & Sharma, R. (2022). *Challenges in vector control: Case studies from India*. Journal of Public Health Research, 11(1), 45-58.
4. Dhiman, R. C., et al. (2022). *Climate change and malaria transmission in India: A review*. Environmental Health Perspectives, 130(4), 045002.
5. Ghosh, S., & Bhattacharya, S. (2019). *Vector control strategies in India: A critical review*. Indian Journal of Medical Research, 149(1), 20-33.
6. Githeko, A. K., et al. (2021). *Climate change and malaria: Review of global implications*. Acta Tropica, 220, 105-118.
7. Koenker, H., et al. (2020). *Impact of insecticide-treated nets on malaria transmission*. Malaria Journal, 19(1), 135-142.
8. Kumar, A., & Dash, A. P. (2020). *Emerging trends in vector-borne diseases and their control strategies in India*. Acta Tropica, 207, 105-112.
9. Sharma, V. P. (2019). *Malaria resurgence and global warming: India's perspective*. Current Science, 117(5), 774-784.
10. Tusting, L. S., et al. (2017). *Environmental management for malaria control*. Lancet, 390(10108), 1277-1290.
11. WHO (2021). *Global vector control response 2017-2030*. Geneva: World Health Organization.
12. WHO (2022). *Vector Control Strategies: Guidelines for Effective Implementation*. Geneva: World Health Organization.
13. Singh, N., & Bhatt, R. M. (2021). *Impact of socio-economic factors on mosquito-borne diseases*. Journal of Vector Ecology, 46(2), 185-197.
14. Fillinger, U., et al. (2008). *The role of larval source management in reducing malaria transmission*. Journal of Tropical Medicine, 35(3), 256-267.
15. Kilian, A., et al. (2010). *Effectiveness of insecticide-treated nets in malaria control programs*. American Journal of Tropical Medicine and Hygiene, 82(5), 830-836.
16. Koenker, H., et al. (2014). *Usage patterns and factors influencing insecticide-treated net adoption*. Malaria Journal, 13, 349-360.
17. Sharma, S. K., et al. (2012). *Indoor residual spraying and its impact on malaria reduction*. Journal of Tropical Medicine and Public Health, 43(2), 225-231.
18. Tusting, L. S., et al. (2015). *Housing improvements and malaria risk reduction*. Lancet Global Health, 3(2), e23-e34.
19. Gimnig, J. E., et al. (2013). *Efficacy of indoor residual spraying for malaria prevention*. Journal of Infectious Diseases, 208(1), 63-71.
20. World Malaria Report (2020). *WHO Malaria Report: Global status update*. Geneva: World Health Organization.
21. Singh, O. P., et al. (2019). *Genetic approaches to malaria vector control in India*. Journal of Vector Borne Diseases, 56(1), 1-10.

22. Patel, P., et al. (2020). *Public health interventions and their effectiveness in controlling dengue outbreaks*. Journal of Infectious Diseases, 35(4), 287-298.
23. Das, A., et al. (2018). *Vector ecology and control measures in India: Challenges and strategies*. Indian Journal of Medical Sciences, 72(2), 165-178.
24. National Vector Borne Disease Control Programme (NVBDCP). (2023). *Annual Report on Vector Borne Diseases*. Retrieved from www.nvbdcp.gov.in
25. World Health Organization (WHO). (2023). *Guidelines for integrated vector management in disease-endemic areas*. Geneva: WHO Publications.