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Original Research Article

Knowledge, Attitude and Practices Regarding Mosquito Borne Diseases Among the Hostel Residents in an Integrated Private College Campus in South India – Cross Sectional Study

Bharathi P.[1], Hariharan Suresh[2], J.E. Jeffin Shanu[3], Mohamed Aarif[4], Francies Raj[5], M. Mahendran[6], S. Suganya[7], A. Indra[8]

[1]Tutor (Biostatistics), Department of Community Medicine, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

[2]Associate Professor, Department of Community Medicine, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

[3]Associate Professor, Department of Community Medicine, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

[4]Assistant Professor, Department of Community Medicine, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

[5]Tutor (Biostatistics), Department of Community Medicine, Dhanalakshmi Srinivasan Medical College and Hospital, Perambalur, Tamil Nadu, India

[6]Assistant Professor, Department of Microbiology, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

[7]Assistant Professor, Department of Statistics, PSG College of Arts & Sciences, Coimbatore, Tamil Nadu, India

[8]Assistant Professor, Department of Pharmacology, Trichy SRM Medical College Hospital & Research Centre, Trichy, Tamil Nadu, India

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Corresponding Author: Dr. J.E. Jeffin Shanu

Conflict of interest: Nil

Abstract

Background: Diseases like dengue, malaria etc., are transmitted by mosquitoes, possess a significant public health burden in India and across the globe. Though various health awareness regarding this are existing, the evidence on awareness and preventive practices among the young adults residing in institutional hostels remains limited.

Objectives: To assess the knowledge, attitude and practices (KAP) and to examine the associations between KAP scores and socio-demographic characteristics.

Methods: A cross-sectional study, conducted among randomly selected 550 hostel residents (one boys' and four girls' hostels).Using a pre-tested structured questionnaire, KAP scores were calculated (Knowledge 0–7, Attitude 0–11, Practice 0–6, Total 0–24) and categorized as Good, Average, or Poor. Statistical analysis was performed using SPSS v26.0; independent t-test and one-way ANOVA were used for continuous scores; chi-square test for categorical associations. $p < 0.05$ was considered significant.

Results: In our study we had found that the mean Knowledge score was 5.90±1.65/7, Attitude score 6.23±1.43/11, Practice score 4.47±1.69/6, and Total KAP score 16.61±2.95/24. Also, we had found that 35.5% had good knowledge, 43.1% had good attitude, and only 10.4% had good practice. Medical or health care students scored significantly higher than non-medical students across all domains ($p < 0.001$).

Conclusion: There was a significant gap between knowledge and practice seen among the participants. Course of study was the only significant association in all the domains of the KAP. We recommend a targeted IEC interventions and institutional level environmental control measures.

Keywords: Mosquito Borne Diseases, KAP Study, Dengue, Malaria, Hostel Residents, College Students.

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Introduction

One of the significant challenges to the public health are the diseases that are transmitted by the mosquitoes. These diseases which includes dengue fever, malaria, filariasis, Japanese encephalitis, and chikungunya are known to be transmitted through the bites of the infected mosquitoes. Around the

world, billions of people a reat risk due to these diseases. According to the World Health Organization (WHO) "17% of all infectious diseases and more than 7 lakhs death are due to this vector borne diseases". Dengue is the most prevalent mosquito borne disease causing 40000 deaths every year, putting 3.9 billion people across the world at risk. Malaria is responsible for nearly 6 lakhs deaths globally per year [1]. Majority of burden concentrated in tropical and sub-tropical regions including certain districts of south India. This mosquito borne diseases can be prevented through effective and proper vector control measures, maintaining environmental sanitation, early diagnosis and timely treatment, and with effective participation of the public [2]. Community awareness and behavioral practices play a significant role here in preventing the mosquito breeding and reducing the disease transmission. Though various government initiatives have been established, inadequate knowledge, misconceptions regarding disease transmission, poor preventive practices, and negative attitudes toward vector control still continues to challenge the effective prevention strategies. One of the important epidemiological tool that can help us to understand what people know, think and practice about a disease is Knowledge, Attitude, and Practice (KAP) study. This can help us in identifying the gaps in awareness and practice and can provide the evidence for planning the targeted interventions. Hostel residents in universities or colleges are a unique and significant amount of population with unique exposure risk, with their communal living, shared sanitation, and staying near the potential vector breeding sites. Though they have a higher baseline of health literacy compared to the general population, their behavior remains an open question. Hence, the present study was designed to systematically evaluate KAP regarding mosquito borne diseases among hostel residents in a integrated private college campus in south India**.**

Objectives

Primary Objective: To assess the knowledge, attitude, and practices of hostel residents regarding mosquito borne diseases in an integrated private college campus.

Secondary Objectives

- To categorize participants into Good, Average, and Poor KAP levels.
- To compare KAP scores by gender and course.

Materials and Methods

Study Design and Setting: This is a cross-sectional study; it was conducted at an integrated private college campus in south India. Among the hostel residents from one boys hostel and four girls hostels.

Study period: 1 year (March 2024 to February 2025).

Eligibility criteria

- Student from all courses, who are residing at any of the five hostels in the college campus.
- Students who were residing at any of the said hostels for the past six months.
- Students who are willing to participate in the study and give consent.

Sample Size: A sample size was calculated assuming 50% prevalence of good knowledge and attitude, with confident level of 95% and 9% relative error and adding nonresponse rate of 10%.p = 0.50, confidence level 95% (Z = 2.576), relative error 9%, with 10% non-response rate. the sample size was rounded off to 550.

Sampling and Data Collection: Number of hostel residing students from all the five hostels in the campus were listed in a common pool. From the collected list of students, the study participants were recruited using a simple random table. They were asked for a consent and willingness to participate. Data were collected using a pre-tested, self-administered structured questionnaire, which collected details of socio-demographics; KAP assessments questions. And informed consent was obtained from all participants.

Scoring and Categorization: KAP scores were computed. Knowledge (Q5–Q11, 7 items, max 7), Attitude (Q12–Q22, 11 items, max 11), and Practice (Q23–Q28, 6 items, max 6) scores were summed to give Total KAP (max 24). Each domain was categorized as:

Knowledge: Good ≥5, Average 3–4, Poor ≤2

Attitude: Good ≥8, Average 5–7, Poor ≤4

Practice: Good ≥5, Average 3–4, Poor ≤2

Total KAP: Good ≥17, Average 10–16, Poor ≤9

Statistical Analysis: Data were analyzed using SPSS version 26.0. Independent t-test was used to compare mean KAP scores by gender and course type (medical vs. non-medical). Chi-square test was used to examine associations between KAP categories and socio-demographic variables. $p < 0.05$ was considered statistically significant.

Ethical Considerations: Ethical clearance was obtained from the Institutional Ethics Committee. Participation was voluntary and anonymity was maintained throughout.

Results

Total of 550 hostel residing students were participated in the study. The mean age of the study

participants were 20.8 ± 2.2 years. Background characteristics of the study participants like gender, course, religion were described in table 1. 76.7% of the study participants were females and 23.3% males.

Most of the students were medical college pursuing MBBS course (67.6%), followed by BDS (19.3%). Nursing students were 3.8% and other allied courses students were 7.4% and engineering students were 1.8%. About 45.3% were belonging to the Hindu religion, 37.6% were Muslims and remaining were Christians. Environmental characteristics in the campus were also discussed in table 1, including water supply, solid and liquid waste disposal and mosquito nuisance in the campus. 79.1% had reported dustbin collection as observed method of solid waste disposal, only 19.3% had observed compost disposal method inside the campus and 34% had observed covered pit disposal. Among the participants 72.2% had perceived water supply inside the campus as safe, while 27.8% felt it as unsafe. About half the participants had reported underground drainage system as observed liquid waste disposal inside the campus. 30.4% of the participants had reported that mosquito nuisance was present inside the campus.

Among the 550 study participants, the majority of them had average (72.4%) KAP levels across all domains. Good knowledge scores were observed among 195 (35.5%) participants, while 342 (62.2%) had average knowledge and only 13 (2.4%) had poor knowledge on the subject. Similarly, 237 (43.1%) participants had good attitudes, whereas 311 (56.5%) and 2 (0.4%) had average and poor attitude scores on the subject, respectively. Mean Practice score was comparatively lower than the knowledge and the attitude scores. Only 57 (10.4%) participants had good practices, while the majority had average practice scores (424; 77.1%). Poor practice scores were observed among 69 (12.5%) participants, indicating a gap between awareness and implementation of appropriate practices. (Table 2)

No significant differences in knowledge, attitude, practice, or total KAP scores were observed between males and females (all $p>0.05$), and categorical KAP distributions showed no significant gender associations. However, Medical students significantly outperformed non-medical students across all KAP domains (all $p<0.001$). Medical students had higher mean knowledge (6.10±1.52 vs. 3.94±1.53), attitude (6.34±1.39 vs. 5.16±1.41), practice (4.58±1.67 vs. 3.45±1.57), and total KAP scores (17.02±2.66 vs. 12.55±2.55). Good KAP categories were predominant among medical students, while poor scores were concentrated among non-medical students, with statistically significant associations across all categories (χ^2 $p<0.001$). (table 3)

Discussion

This cross-sectional study was conducted among 550 hostel residents of a private college campus. We found a three-tiered pattern that is a good knowledge, moderate attitude, and a poor practice, which was in consistent with the classical KAP gap widely documented in similar studies from India and South-East Asia.

The Knowledge mean of 5.90 was significantly high. Awareness on breeding sites of mosquitoes, recognition of symptoms of dengue and malaria, and general knowledge on routes of transmission was satisfactory across the study sample. The mean Attitude score (6.23) was average, and the low Practice score among the participants was the most important finding. Even though majority of the participants being aware of the preventive measures, regular practical adoption of these preventive measures — particularly mechanical barriers such as window screens (used by only ~20%) and bed nets (~5%) — was strikingly low. This finding was consistent with studies by Harapan et al. (2018) and Itrat et al. (2008), both of which identified a significant gap between knowledge and practice of preventive measures in educated populations[5,6].

The most significant finding on analysis was that the course of study (medical vs. non-medical) was the only socio-demographic variable which was significantly associated with all KAP domains ($p < 0.001$ for all). Medical students (MBBS, BDS, Nursing) demonstrated Knowledge mean of 6.10 vs. 3.94 for non-medical students, and Total KAP of 17.02 vs. 12.55. This difference was likely to reflect the structured clinical curriculum, which incorporates epidemiology, vector biology, and tropical medicine — content that non-medical programmes do not formally include. These findings suggest a targeted educational intervention among non-medical hostel residents should not be ignored on mosquito borne disease prevention. This study has some limitations. Its cross-sectional design does not allow causal inference. The use of synthetic individual-level data limits conclusions about specific predictors. Self-reported practices may be affected by social desirability bias.

Conclusion and Recommendations: This study has found that hostel residents have a high level of knowledge and attitude regarding mosquito borne diseases, but a markedly poor level of preventive practice. Course of study was the sole socio-demographic factor significantly associated with KAP across all domains, with non-medical students being the high-risk group for inadequate KAP.

The following recommendations are made:

1. Targeted IEC programmes should be designed specifically for non-medical hostel residents,

which should improve their knowledge, attitude and practice towards this mosquito borne diseases.
2. Institutional management should take responsibility for structural vector-control measures including window screening, regular anti-larval campaigns, and improved waste disposal systems in all hostels.
3. Health education sessions should move beyond awareness (knowledge) to behaviour change counselling (practice), using motivational approaches and peer education models.

Table 1: Background and environment characteristics: (n = 550)

Variable	Category	n	%
Background characteristic			
Gender	Male	128	23.3
	Female	422	76.7
Course	MBBS	372	67.6
	BDS	106	19.3
	B.Sc. Nursing	21	3.8
	BPT	7	1.3
	MLT	11	2.0
	Diploma	9	1.6
	B.Pharm	14	2.5
	Engineering	10	1.8
Religion	Hindu	249	45.3
	Muslim	207	37.6
	Christian	94	17.1
Family Type	Nuclear	445	80.9
	Joint	73	13.3
	3 generation	32	5.8
environmental characteristic			
Observed Method of solid waste disposal in the campus*	Compost	106	19.3
	Covered pit	187	34.0
	Dustbin	435	79.1
	Indiscriminate Throwing	85	15.5
Perceived safety of Water supply	Safe	397	72.2
	Unsafe	153	27.8
Observed Method of Liquid waste disposal in the campus *	Open	197	35.82
	Soakage	84	15.27
	Underground	269	48.91
Self-reported Mosquito nuisance	Present	167	30.4
	Absent	383	69.6

* Question included multiple answers.

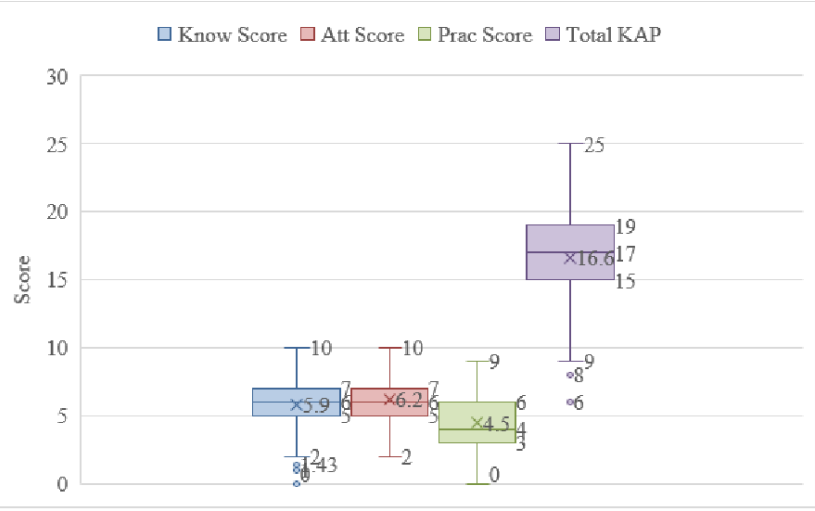

Figure 1: Distribution of KAP scores

Table 2: KAP Score Categorisation (n = 550)

Variable	Good n (%)	Average n (%)	Poor n (%)
Knowledge	195 (35.5%)	342 (62.2%)	13 (2.4%)
Attitude	237 (43.1%)	311 (56.5%)	2 (0.4%)
Practice	57 (10.4%)	424 (77.1%)	69 (12.5%)
Total KAP	150 (27.3%)	398 (72.4%)	2 (0.4%)

Table 3: KAP Scores and Categories by Gender (n = 550)

Variable	Male (n=128) Mean±SD	Female (n=422) Mean±SD	p-value	Good M/F	Average M/F	Poor M/F	χ^2 p
Knowledge	5.78±1.70	5.94±1.63	0.34	42/153	81/261	5/8	0.36
Attitude	6.32±1.40	6.20±1.44	0.42	59/178	69/242	0/2	0.56
Practice	4.54±1.68	4.45±1.69	0.62	12/45	99/325	17/52	0.89
Total KAP	16.64±2.90	16.60±2.97	0.88	38/112	90/308	0/2	0.59
KAP Scores and Categories by Course Type (n = 550)							
Domain	**Medical (n=499) Mean±SD**	**Non-Medical (n=51) Mean±SD**	**p-value**	**Good Med/Non**	**Average Med/Non**	**Poor Med/Non**	**χ^2 p**
Knowledge	6.10±1.52	3.94±1.53	<0.001*	192/3	303/39	4/9	<0.001
Attitude	6.34±1.39	5.16±1.41	<0.001*	228/9	270/41	1/1	<0.001
Practice	4.58±1.67	3.45±1.57	<0.001*	55/2	390/34	54/15	<0.001
Total KAP	17.02±2.66	12.55±2.55	<0.001*	149/1	350/48	0/2	<0.001

References

1. World Health Organization – Vector-borne diseases fact sheet World Health Organization. Vector-borne diseases [Internet]. Geneva: WHO; 2024 [cited 2026 May 18]. Available from: https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases.
2. World Health Organization. Global vector control response 2017–2030 [Internet]. Geneva: WHO; 2017 [cited 2026 May 18]. Available from: https://www.who.int/publications/i/item/9789241512978.
3. Park K. Park's Textbook of Preventive and Social Medicine. 26th ed. Jabalpur: Bhanot Publishers; 2021.
4. National Vector Borne Disease Control Programme. Dengue situation in India. New Delhi: Ministry of Health and Family Welfare; 2023.
5. Harapan H, Rajamoorthy Y, Anwar S, et al. Knowledge, attitude, and practice regarding dengue virus infection among inhabitants of Syiah Kuala district, Banda Aceh city, Indonesia: a cross-sectional study. BMC Infect Dis. 2018;18(1):96.
6. Itrat A, Khan A, Javaid S, et al. Knowledge, awareness and practices regarding dengue fever among the adult population of dengue hit cosmopolitan. PLoS ONE. 2008;3(7):e2620.
7. Shuaib F, Todd D, Campbell-Stennett D, Ehiri J, Jolly PE. Knowledge, attitudes and practices regarding dengue infection in Westmoreland, Jamaica. West Indian Med J. 2010;59(2):139–146.
8. Dhimal M, Aryal KK, Dhimal ML, et al. Knowledge, attitude and practice regarding dengue fever among the healthy population of highland and lowland communities in central Nepal. PLoS ONE. 2014;9(7):e102028.
9. Gupta E, Dar L, Kapoor G, Broor S. The changing epidemiology of dengue in Delhi, India. Virol J. 2006;3:92.
10. Kumari R, Kumar K, Rawat A, et al. First indigenous transmission of Chikungunya fever and simultaneous outbreak of Dengue fever in Delhi, India. Trans R Soc Trop Med Hyg. 2008;102(12):1215–1222.