

# Knowledge And Practice Regarding Vector Borne Diseases In Selected Rural Community Of Kamrup, Assam

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## Abstract:

Vector borne diseases cause a major public health challenge among people, mainly in rural communities with very limited access to health care facilities. The tropical climate and abundant water bodies of Assam, provides a suitable environment for vectors to transmit disease (malaria, dengue, JE) one of the key districts of Assam is Kamrup district, which has been identified as a very vulnerable to this disease due to various factors such as poor sanitation, stagnant water, lack of awareness about prevention and control of these disease. Vector borne diseases represent a major public health concern, mainly in rural areas, caused by parasites, viruses and bacteria that are transmitted by vectors due to mainly environmental conditions and limited health care facilities. Kamrup district, Assam being the major hotspot for vector borne disease experiences outbreaks of malaria, dengue and JE frequently due to its favorable climate conditions and its favorable environment which supports mosquito breeding. Indeed 80% of the world's human population is at risk of 1 or more vector borne diseases. Currently, approximately 20% of the global tropical infectious disease burden is vector-borne and this accounts for about 1 million human deaths annually, although the mortality rate in sub-Saharan Africa is disproportionately higher. According to WHO, the latest world malaria report, there were 263 million cases of malaria in 2023 compared to 252 million cases in 2022. India represents 3% of the global malaria burden. Despite being the highest malaria burden country of the SEA region, India showed a reduction in reported malaria cases of 49% and deaths of 50.5%. The eastern state of Assam in India reported approximately 567 cases of malaria in 2023. Title of the study: "Knowledge and practice regarding vector borne diseases in selected rural community of Kamrup, Assam". Objectives: The study has been undertaken with the objectives to find out the knowledge regarding vector borne diseases, the practice regarding vector borne diseases among the community people, and to find out the association between knowledge and practice regarding vector borne diseases among the community people with their selected demographic variable viz. age, sex, educational qualification, occupation, marital status, family income per month, number of family member, type of family and housing condition. Methodology: A quantitative descriptive survey was adopted for the study, a total of 194 community people were selected by using non-probability purposive sampling technique, samples were selected from Nij-Sindhurighopa, Changsari, kamrup, Assam. Data was collected using structured interview schedule. Data were analyzed in terms of descriptive and inferential statistic. Results: Result found that majority of the respondents i.e., 156(80%) had moderate knowledge, 23(12%) had high level of knowledge, 15(8%) had low level knowledge and 163(84%) had average level of practice, 19(10%) had poor level of practice and 12(6%) had good level of practice. Significant association found between knowledge regarding vector borne diseases among the community people and sex ( $\chi^2=7.087$ , p value=0.029), occupation ( $\chi^2=29.14$ , p value=0.0466) at 0.05 level of significance. Significant association found between practice regarding vector borne diseases among community people and educational qualification ( $\chi^2=27.54$ , p value=0.0064) at 0.05 level of significance. Conclusion: the study reveals that majority of the participants have moderate level of knowledge on vector borne disease and majority of the participants have an average level of practice regarding vector borne disease. Health education, awareness programme needs to be organized to give education and awareness to the community people.

**Key Word:** Vector Borne, Knowledge, Practice, Community

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## I. Introduction

Vector borne diseases cause a major public health challenge among people, mainly in rural communities with very limited access to health care facilities. The tropical climate and abundant water bodies of Assam, provides a suitable environment for vectors to transmit disease (malaria, dengue, JE) one of the key

districts of Assam is Kamrup district, which has been identified as a very vulnerable to this disease due to various factors such as poor sanitation, stagnant water, lack of awareness about prevention and control of these disease.<sup>1</sup>

To effectively prevent and control the disease, only medical interventions are not reliable but also there is very much importance of community awareness and health practices in the community. This study aims to assess the knowledge and practice regarding vector borne diseases in Nij Sindhurighopa, Kamrup, Assam to identify the challenges and preventive strategies to control the disease

## **II. Material And Methods**

**Study Design:** non-experimental descriptive research design is selected for the study.

**Study Location:** Nij-Sindhurighopa, Changsari, Kamrup, Assam is selected for undergoing the research study.

**Study Duration:** February 2025 to March 2025.

**Population;** the population under study includes community people of Kamrup , Assam.

**Sample size:** 194 people residing in the rural community of Nij Sindhurighopa ,Changsari, Kamrup, Assam.

**Sampling Technique;** Non-Probability purposive sampling technique was used for selection of sample.

### **Inclusion criteria:**

- Adults age above 19-60 years, residing in Nij-Sindhurighopa, Changsari, Kamrup, Assam.
- Participant who are present on the day of data collection.

### **Exclusion criteria:**

- Adults from different community.
- Adults who are health professionals.

### **Procedure methodology**

#### **Description of the tool**

The tool comprises of three sections:

#### **Section A: Demographic Performa**

It comprises of demographic variables including – age, sex, religion, educational qualification, occupation, marital status, socio economic status, number of family members, type of family, housing condition.

#### **Section B: Self-Structure knowledge questionnaires**

It comprises of multiple-choice question to assess the knowledge of vector borne diseases among the community people.

#### **Section C:**

It comprises of inventory checklist regarding practice of subjects with a scoring of each correct answer scores 1 and wrong answer scores 0.

### **Statistical analysis**

Based on the objectives of the study, collected data were compiled, tabulated and interpretation. Data were coded and organized and master sheet. Descriptive and inferential statistics like frequency table, percentage, mean, median, standard deviation, chi square would be used for analysis of data

#### **Descriptive Statistics**

- Frequency and percentage distribution was used to describe demographic variables.
- Mean standard deviation was used to analyse the level of knowledge and practice regarding vector borne diseases among community people.

#### **Inferential Statistics**

- Chi square test was used to associate the level of knowledge and practice regarding vector borne diseases among community people in their selected demographic variables.

### III. Result

#### SECTION I: Description of demographic characteristic of respondents in frequency and percentage

**Table 1:** Frequency and percentage distribution of subjects according to Socio demographic variables:

SL NO.	DEMOGRAPHIC VARIABLE	FREQUENCY (f)	PERCENTAGE (%)	Total	
				(f)	(%)
1	<b>Age in years</b> 19-29 years 30-40 years 41-51 years 52-60 years	65 69 35 25	33% 36% 18% 13%	194	100%
2	<b>Gender</b> Male Female	76 118	39% 61%	194	100%
3	<b>Educational qualification</b> Professionals Graduate Diploma High school certificate Middle school certificate Primary school certificate Illiterate	4 11 19 58 51 19 32	2% 6% 10% 30% 26% 10% 16%	194	100%
4	<b>Occupation</b> Professionals Technicals & Associate Professionals Clerks Skilled workers and shop and Market sales workers Skilled agricultural and fishery workers Craft and related trade workers Plant & machine operator Elementary occupation Unemployed	6 4 1 36 1 9 1 23 113	3% 2% 1% 19% 0% 5% 1% 12% 58%	194	100%
5.	<b>Marital Status</b> Married Unmarried Widow	145 45 4	75% 23% 2%	194	100%
6.	<b>Family Income</b> 2,13,814 and above 1,06,850-2,13,813 80,110-1,06,849 53,361-80,109 31,978-53,360 10,703-31,977	4 4 4 0 13 71	2% 2% 2% 0% 7% 36%	194	100%

	≤10,702	98	51%		
7.	<b>Family Member</b> 1-2 members 3-4 members 5-6 members 7 and above members	12 120 54 8	6% 62% 28% 4%	194	100%
8.	<b>Type of family</b> Nuclear family Joint family Extended family	155 35 4	80% 18% 2%	194	100%
9.	<b>Housing Condition</b> Pucca House Kutch House	167 27	86% 14%	194	100%

## Section II: Description Of Knowledge On Vector Borne Disease Among The Community People

**Table 2:** Frequency and percentage distribution of knowledge among the community people.

KNOWLEDGE	FREQUENCY	PERCENTAGE	MEAN	SD
LOW	15	8%	13.5	3.19
MODERATE	156	80%		
HIGH	23	12%		

n=194

**Table 2** shows that majority of the respondents i.e. 156(80%) having moderate knowledge, 23(12%) having high knowledge, 15(8%) having low knowledge

## Section III: Description Of Practice On Vector Borne Disease Among The Community People

**Table 3:** Frequency and percentage distribution of practice among the community people.

n = 194

PRACTICE	FREQUENCY	PERCENTAGE	MEAN	SD
POOR	19	10%	7.9	1.1
AVERAGE	163	84%		
GOOD	12	6%		

**Table 3** shows that majority of the respondents i.e. 163(84%) have average practice, 19(10%) have poor practice, 12(6%) have good practice.

## Section IV: Association Between Knowledge On Vector Borne Disease Among The Community People And Their Demographic Variables

This section deals with the association between knowledge on vector borne disease among the community people and their demographic variables such as age, sex, educational qualification, marital status, occupation, family income per month, type of family, numbers of family member, housing condition. The findings related to this section are presented in tables (table 4.1 to 4.9)

Based on the findings of the section, research hypothesis will be tested which is formulated as-

H<sub>1</sub>: There is significant association between knowledge on vector borne disease among community people with selected demographic variables.

**Table 4.1: Association between knowledge on vector borne disease among the community people and age.**

n = 194

variables	Knowledge			Total	Chi - square	df	P value	Significance
	Low	Moderate	High					
<b>Age</b>								
19-29	7	53	5	65	7.4	6	0.28	NS
30-40	5	55	9	69				
41-51		28	7	35				
52-60		20	2	25				
Total	15	156	23	194				

\*NS=Not significant at 0.05 level of significance (p value > 0.05)

Table 4.1 shows that data presented in the table that the obtained chi square value is 7.4(df=6) which is less than tabulated value 12.59 and p value  $0.28 > 0.05$  which is statistically not significant. so, it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and age. Hence the research hypothesis ( $H_1$ ) could not be accepted.

**Table 4.2: Association between knowledge on vector borne disease among community people and sex**  
n = 194

Variables	Knowledge			Total	Chi-square	df	P value	Significance
	Low	Moderate	High					
<b>Sex</b>					7.04	2	0.02	significant
Male	1	64	10	75				
Female	14	92	13	119				
Transgender	0	0	0	0				
Total	15	156	23	194				

\*S=Significant at 0.05 level of significance (p value <0.05)

Table 4.2 shows that the data presented in the table that obtained chi square value is 7.04 (df=2) which is more than tabulated value 5.99 and p value 0.02 which is statistically significant .so, it can be summarized that there is significant association between knowledge on vector borne disease among the community people and their sex. Hence the research hypothesis ( $H_1$ ) is accepted.

**Table 4.3: Association between knowledge on vector borne disease among community people and educational qualification.**  
n = 194

Variables	knowledge			Total	Chi-square	df	P Value	Significance
	Low	Moderate	High					
<b>Educational qualification</b>					12.12	12	0.43	NS
Professional	0	3	1	4				
Graduate	0	10	1	11				
Diploma	0	15	4	19				
High school certificate	6	46	6	58				
Middle school certificate	2	44	5	51				
Primary school certificate	2	13	4	19				
Illiterate	5	25	2	32				
Total	15	156	23	194				

\*NS = Not significant at 0.05 level of significance ( P Value > 0.05)

Table 4.3 shows that data presented in the table that the obtained chi square value is 12.12 (df=12) which is less than tabulated value 21.03 and P value  $0.43 > 0.05$  which is statistically not significant so it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and educational qualification. Hence the research hypothesis ( $H_1$ ) could not be accepted.

**Table 4.4: Association between knowledge on vector borne disease among the community people and occupation.**  
n= 194

Variable	knowledge			Total	Chi Square	df	P value	Significance
	Low	Moderate	High					
<b>Occupation</b>								
Legislators, senior officers and manager	0	0	0	0				
Professionals	0	3	3	6				
Technicians and associate professionals	0	3	1	4				
Clerks	0	0	1	1				

Skilled workers and shop and market sales workers	1	34	1	36	29.71	18	0.04	significant
Skilled agricultural and fishery worker	0	1	0	1				
Craft and related trade worker	0	7	2	9				
Plant and machine operator and assemblers	0	1	0	1				
Elementary occupation	0	21	2	23				
unemployed	14	86	13	113				
Total	15	156	23	194				

\*S= Significant at 0.05 level of significance (P Value< 0.05)

Table 4.4 shows that the data presented in the table that obtained chi square value is 29.71 (df=18) which is more than tabulated value 28.87 and p value 0.04 which is statistically significant. So, it can be summarized that there is significant association between knowledge on vector borne disease among the community people and their occupation. Hence the research hypothesis ( $H_1$ ) is accepted.

**Table 4.5: Association between knowledge on vector borne disease among the community people and marital status.**

n=194

Variable	knowledge			Total	Chi Square	df	P Value	Significance
	Low	Moderate	High					
<b>Marital status</b>					1.54	4	0.9	NS
Married	11	116	19	146				
Unmarried	4	36	4	44				
Widow	0	4	0	4				
Total	15	156	23	194				

\*NS= Not significant at 0.05 level of significance (P value> 0.05)

Table 4.5 shows that data presented in the table that the obtained chi square value is 1.54 (df=4) which is less than tabulated value 9.49 and P value 0.9>0.05 which is statistically not significant so it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and marital status. Hence the research hypothesis ( $H_1$ ) could not be accepted

**Table 4.6: Association between knowledge on vector borne disease among the community people and family income**

n = 194

Variable	knowledge			Total	Chi Square	df	P Value	Significance
	Low	Moderate	High					
<b>Family income</b>					11.25	12	0.52	NS
2,13,814 and above	0	4	0	4				
1,06,850-2,13,813	0	3	1	4				
80,110-1,06,849	0	2	2	4				
53,361-80,109	0	0	0	0				
31,978-53,360	1	9	3	13				
10,703-31,977	4	58	9	71				
≤10,702	10	80	8	98				
total	15	156	23	194				

\*NS=Not significant at 0.05 level of significance ( P value>0.05)

Table 4.6 shows that data presented in the table that the obtained chi square value is 11.25 (df=12) which is less than tabulated value 21.03 and P value  $0.52 > 0.05$  which statistically not significant .so, it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and family income. Hence the research hypothesis ( $H_1$ ) could not be accepted

**Table 4.7: Association between knowledge on vector borne disease among the community people and numbers of family members**

n=194

Variables	knowledge			Total	Chi square	df	P value	Significance
	Low	Moderate	High					
<b>No. of family member</b>								
1-2 members	0	12	0	12	5.62	6	0.54	NS
3-4 members	8	97	15	120				
5-6 members	7	41	7	55				
7 and above members	0	6	1	7				
Total	15	156	23	194				

\*NS= Not significant at 0.05 level of significance (P value>0.05).

Table 4.7: shows that data presented in the table that the obtained chi square value is 5.62(df=6) which is less than tabulated value 12.59 and P value  $0.54 > 0.05$  which is statistically not significant. so, it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and family member. Hence the research hypothesis ( $H_1$ ) could not be accepted.

**Table 4.8: Association between knowledge on vector borne disease among the community people and types of family**

n=194

Variable	knowledge			Total	Chi square	df	P value	Significance
	Low	Moderate	High					
<b>Type of family</b>								
Nuclear family	11	126	18	155	2.43	4	0.65	NS
Joint family	3	27	5	35				
Extended family	1	3	0	4				
Total	15	156	23	194				

\*NS=Not significant at 0.05 level of significance (P value >0.05) .

Table 4.8 shows that data presented in the table that the obtained chi square value is 2.43 (df=4) which is less than tabulated value 9.49 and P value  $0.65 > 0.05$  which is statistically not significant. So, it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and type of family. Hence the research hypothesis ( $H_1$ ) could not be accepted

**Table 4.9: Association between knowledge on vector borne disease among the community people and Housing condition**

n =194

Variable	Practice			Total	Chi square	df	P value	Significance
	Poor	Average	Good					
<b>Housing Condition</b>								
Pucca house	14	133	20	167	0.73	2	0.69	NS
Kutch house	1	23	3	27				
Total	15	156	23	194				

\*NS=Not significant at 0.05 level of significance (P value>0.05) .

Table 4.9 Shows that data presented in the table that the obtained chi square value is 0.73(df=2) which is less than tabulated value 5.99 and P value  $0.69 > 0.05$  which is statistically not significant. So, it can be summarized that there is no significant association between knowledge on vector borne disease among the community people and housing condition. Hence the research hypothesis( $H_1$ ) could not be accepted.

### Section V: Association Between Practice On Vector Borne Disease Among The Community People And Selected Demographic Variables

This section deals with the association between level of practice on vector borne disease among the community people and selected demographic variables such as age, sex, educational qualification, marital status, occupation, family income per month, type of family, numbers of family member, housing condition. The findings related to this section are presented in tables (table 5.1 to 5.9)

Based on the findings of the section, research hypothesis will be tested which is formulated as-

$H_2$ : There is significant association between practice on vector borne disease among community people with selected demographic variables.

**Table 5.1: Association between practice on vector borne disease among the community people and age.**  
n = 194

VARIABLES	practice			total	Chi square	df	P value	significance
	Poor	Average	Good					
Age	10	49	6	65	7.522	6	0.2754	NS
19-29 Years								
30-40 Years								
41-51 years								
52-60 Years	2	23	0	25				
Total	19	163	12	194				

\*NS=Not significant at 0.05 level of significance (P value $>0.05$ ).

Table 5.1 shows that data presented in the table that the obtained chi square value is 7.522 (df=6) which is less than tabulated value 12.59 and P value  $0.2754 > 0.05$  which is statistically not significant. So, it can be summarized that there is no significant association between practice on vector borne disease among the community people and age. Hence the research hypothesis ( $H_2$ ) could not be accepted.

**Table 5.2: Association between practice on vector borne disease among the community people and sex.**  
n = 194

Variable	Practice			Total	Chi square	df	P value	Significance
	Poor	Average	Good					
Sex	8	59	8	75	4.47	2	0.106	NS
Male								
Female								
Transgender								
Total	19	163	12	194				

\*NS=Not significant at 0.05 level of significance (P value $>0.05$ )

Table 5.2: shows that data presented in the table that the obtained chi square value is 4.47 (df=2) which is less than tabulated value 5.99  $> 0.05$  which is statistically not significant. So, it can be summarized that there is no significant association between practice on vector borne disease among the community people and sex. Hence the research hypothesis ( $H_2$ ) could not be accepted.



**Table 5.3: Association between practice on vector borne disease among the community people and educational qualification**

n = 194

Variables	practice			Total	Chi square	df	P value	Significance
	Poor	Average	Good					
<b>Educational Qualification</b>					27.542	12	0.0065	S
Professionals	0	4	0	4				
Graduate	0	9	2	11				
Diploma	0	16	3	19				
Highschool Certificate	2	51	5	58				
Middle school certificate	6	43	2	51				
Primary school certificate	2	17	0	19				
Illiterate	9	23	0	32				
Total	19	163	12	194				

\*S=significant at 0.05 level of significance (P value <0.05)

Table 5.3 shows that the data presented in the table that obtained chi square value is 27.542 (df=12) which is more than tabulated value 21.03 and P value 0.0065 which is statistically significant. So, it can be summarized that there is significant association between practice on vector borne disease among the community people and their education and the research hypothesis (H<sub>2</sub>) is accepted.

**Table 5.4: Association between practice on vector borne disease among the community people and Occupation**

n=194

Variables	Practice			Total	Chi square	df	P value	Significance
	Poor	Average	Good					
<b>Occupation</b>					26.34	18	0.0922	NS
Legislators, Senior Officers and Manager	0	0	0	0				
Professionals	0	5	1	6				
Technicians and Associate professionals	0	3	1	4				
Clerks	0	1	0	1				
Skilled workers and Shop and Market sales workers	3	33	0	36				
Skilled Agricultural and Fishery workers	0	1	0	1				
Craft and Related Trade workers	1	7	1	9				
Plant and Machin Operator and assemblers	0	0	1	1				
Elementary occupation	3	17	3	23				
Unemployed	12	96	5	113				
Total	19	163	12	194				

\*NS=Not significant at 0.05 level of significance ( P value>0.05)

Table 5.4 shows that data presented in the table the obtained chi square is 26.34 (df=18) which is less than tabulated value 28.87 and P value 0.0922 >0.05 which is statistically not significant. So, it can be summarized that there is no significant association between practice on vector borne disease among the community people and occupation. Hence the research hypothesis (H<sub>2</sub>) could not be accepted

**Table 5.5: Association between practice on vector borne disease among the community people and Types of family**  
n =194

Variables	Practice			Total	Chi square	df	P value	Significance
	Poor	Average	Good					
<b>Types of Family</b>								
Nuclear Family	17	127	11	155	4.49	4	0.3437	NS
Joint Family	1	33	1	35				
Extended Family	1	3	0	4				
Total	19	163	12	194				

\*NS=Not significant at 0.05 level of significance (P value>0.05)

Table 5.8 shows that data presented in the table that the obtained chi square value is 4.49 (df=4) which is less than tabulated value 9.49 and P value 0.3437>0.05 which is statistically not significant. So, it can be summarized that there is no significant association between practice on vector borne disease among the community people and type of family. Hence the research hypothesis(H<sub>2</sub>) could not be accepted.

From the above table(4.1 to 4.9), it shows that Hypothesis (H<sub>1</sub>) ‘There is a significant association between knowledge on vector borne disease among the community people and selected demographic variable’ is accepted for the demographic variables sex and occupation and for the variables age, educational qualification , marital status, family income, numbers of family members, types of family, housing condition the hypothesis could not be accepted.

From the above table (5.1 to 5.5), it shows that hypothesis(H<sub>2</sub>) ‘There is a significant association between practice on vector borne disease among the community people and selected demographic variable’ is accepted for the demographic variables educational qualification and for the variables age, sex, occupation, marital status, family income, numbers of family members, types of family, housing condition the hypothesis could not be accepted.

## IV. Conclusion

Vector borne disease continue to pose a major public health threat, particularly in regions with high transmission rates. This descriptive study assessed the knowledge and practice level among the community people, revealing critical insight into their awareness and preventive behaviors. The findings emphasize on need of targeted health education campaigns to bridge knowledge gaps and promote effective vector control measures. Strengthening community engagement and implementing sustainable preventive strategies will be essential in reducing the burden of these diseases. Future efforts should focus on enhancing public awareness and fostering collaboration between health authority and local communities to achieve long-term disease control.

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