

**A STUDY TO ASSESS THE EFFECTIVENESS OF HEALTH EDUCATION  
REGARDING VECTOR CONTROL MEASURES AMONG PEOPLE IN SELECTED  
RURAL AREAS OF KANPUR, UTTAR PRADESH.**

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**ABSTARCT**

*This study assessed the effectiveness of health education on vector control measures among adults in selected rural areas of Kanpur, Uttar Pradesh, where vector-borne diseases such as malaria, dengue, chikungunya, and Japanese encephalitis remain major public health concerns due to poor sanitation, lack of awareness, and limited healthcare access. A one-group pre-test and post-test design using quantitative pre-experimental methods was used, involving 60 participants selected through non-probability purposive sampling. Baseline findings revealed that most participants had inadequate knowledge regarding vector-borne diseases and their prevention. Following a structured health education intervention, there was a significant improvement in knowledge levels, with the majority shifting from inadequate to categories of adequate and mediocre expertise. The idea that health education successfully raises awareness is supported by the fact that the mean post-test score (16.86) was significantly higher than the mean pre-test score (9.45). Additionally, the study discovered a strong correlation between some demographic factors, such as schooling, and knowledge levels. These findings highlight the critical role of health education in promoting preventive practices like eliminating stagnant water, using mosquito nets, and maintaining environmental hygiene. The study concludes that community-based educational interventions are effective, low-cost strategies for improving knowledge and supporting the control of vector-borne diseases, though broader studies are recommended for long-term impact assessment and generalization.<sup>1</sup>*

Keywords: Health education, Japanese encephalitis, chikungunya, dengue, malaria

## **INTRODUCTION**

Arboviral diseases are caused by viruses that can be transmitted to humans by arthropods, including several species of mosquito. Spreads across the world, these diseases cause a high level of morbidity and mortality, creating a large impact on the global disease burden. All arboviral diseases, some of the most high-impact include dengue, West Nile fever, chikungunya, yellow fever, Zika, and Japanese encephalitis. In the last decades, there has been an increase in epidemics by arboviral diseases and in their geographic reach. There are no human vaccines available for most of the arboviral diseases. Present

control interventions heavily rely on vector control methods, such as the use of insecticide, which have had a moderate level of success. The increasing environmental awareness, the impact on human and animal health, and emerging levels of insecticide resistance have led to an increasing concern over the dependence on chemical solutions to achieve said control. Similarly, the widespread use of biological methods has also raised issues over the disruption of wildlife cycles and habitats. Official recommendations are that removal of potential breeding sites should be the preferred method of performing vector control in these diseases, with chemical solutions as a complement in specific

situations. Because many of the arthropod breeding sites are located on private property, the cooperation of people in the local community is crucial for vector control to be effective. Changing the public's knowledge and their behavior is thought to be the most appropriate measure to ensure more ecological and sustainable vector control policies, while also ensuring disease control through higher literacy. The latter could be achieved by an increased awareness of symptoms and preventive methods available.<sup>2</sup>

Two systematic reviews were found looking at educational interventions and reported weak but suggestive evidence. However, these reviews only focused on dengue, and their inclusion criteria defined entomological parameters as the main outcome. Because there has been no review analyzing educational interventions on arboviral diseases and the consequent impact on the knowledge of disease and protective behaviors, this review aimed to summarize the evidence to fill this gap.<sup>3</sup>

### **NEED OF THE STUDY**

In rural Uttar Pradesh, vector-borne illnesses like malaria, dengue, chikungunya, and Japanese encephalitis continue to be serious public health issues, especially in regions like Kanpur. These diseases are primarily transmitted by vectors such as mosquitoes, which breed in stagnant water and unhygienic environmental conditions.

In rural communities, lack of awareness, poor sanitation, inadequate waste management, and limited access to healthcare services contribute to the high

prevalence of these diseases. Many people are unaware of simple and cost-effective vector control measures such as eliminating stagnant water, using mosquito nets, and maintaining environmental hygiene.

Health education plays a vital role in improving knowledge, shaping attitudes, and promoting preventive practices among the community. By educating individuals on vector control strategies, we can greatly decrease the frequency of vector-borne diseases. Consequently, this research is essential to assess the effectiveness of health education in enhancing awareness and practices regarding vector control among rural communities.

The findings of the study can help in planning community-based interventions and strengthening public health programs aimed at disease prevention.<sup>4</sup>

### **STATEMENT OF THE PROBLEM**

**A study to assess the effectiveness of health education regarding vector control measures among people in selected rural areas of Kanpur, Uttar Pradesh.**

### **OBJECTIVES**

1. To assess the pre-existing knowledge regarding vector-borne diseases and their control measures among rural residents.
2. To evaluate the effectiveness of health education regarding vector control measures among people in selected rural areas.
3. To find the association between knowledge levels regarding vector-borne

diseases and their control measures with their selected demographic variables.

**HYPOTHESIS**

H1.The mean post-test knowledge score is significantly higher than the mean pre-test knowledge score. among people in selected rural areas regarding vector-borne diseases and their control measures

H2: there is a significant association between the pre test level of knowledge regarding vector-borne diseases and their control measures among rural residents with their selected demographic variables.

**METHODOLOGY**

**1.Research Methodology**

- The use of quantitative research methods

**2. Design of Research**

- Pre-experimental design (pre-test and post-test for a single group)

**3. Study Setting•**

A few Kanpur rural areas.

**4. Population**

- Every adult living in specific rural communities

**5. Sample**

- Adults residing in rural areas, both male and female

**6. Size of Sample**

60

**7. Method of Sampling**

**SECTION- A**

**Tab -1 FREQUENCY AND PERCENTAGE DISTRIBUTION OF RURAL RESIDENTS BASED ON THEIR DEMOGRAPHIC VARIABLES (n=60).**

- The sample was chosen using a non-probability purposive sampling technique.

**CRITERIA FOR SAMPLE SELECTION**

**Criteria for Inclusion •**

The parent who will take part in the research.

- Parents who know Hindi.
- A parent is present during the study period.

**Exclusion Standards**

- Individuals who are unavailable when gathering data.
- Those who reside in rural areas are excluded.

**THE TOOLS' DESCRIPTION**

**Section A:**Sociodemographic variables are included in

**Section B:** Self-structured knowledge assessment.

**Section A:** It includes sociodemographic information about the resident's gender and level of education. prior understanding of the significance of vector control methods among residents of particular rural locations.

**Section B:** Self-structured knowledge and questionnaire about the significance of vector control measures among residents of specific rural areas.

S.NO	DEMOGRAPHIC VARIABLES.	CLASS	N=60	
			F	%
<b>1.</b>	<b>Age in Year</b>	22-27	24	40.00%
		28-32	27	45.00%
		33 to Above	09	15.00%
		Total	60	100%
<b>2.</b>	<b>Gender</b>	Male	20	33.33%
		Female	40	66%
		Total	60	100%
<b>3.</b>	<b>Education</b>	Illiterate	4	6.66%
		Primary School	16	20.00%
		Secondary School	19	31.67%
		Higher Secondary	13	21.66%
		Graduation and Above	12	20.00%
		Total	60	100%
		<b>4.</b>	<b>Occupation</b>	Home maker
Farmer	15			25.00%
House wife	37			61.67%
Privet Job	08			13.33%
Total	60			100%

<b>5.</b>	<b>Religion</b>	Hindu	59	98.34%
		Muslim	01	1.66%
		Christian	00	0.00%
		Other	00	0.00%
		Total	60	100%
<b>6.</b>	<b>Family Income</b>	Less then 500	10	16.67%
		500-10000	39	65.00%
		10000-15000	06	10.00%
		Above 15000	05	8.33%
		Total	60	100%
<b>7.</b>	<b>Previous Knowledge</b>	Yes	32	53.33%
		No	28	46.67%
		Total	60	100.0%
<b>8.</b>	<b>Source of Information</b>	New Paper	03	6.69%
		Multi Media	05	11.63%
		Television	10	23.26%
		Health care Personal	25	58.14%
		Other	00	0.00%
		Total	601	100%

**SECTION -B**

**Tan -2 Distribution of resident according to Pre – test and post-test level of knowledge regarding vector control measures among rural residents(n=60).**

Level of knowledge	Pre-Test		Post-Test	
	F	%	F	%
<b>Inadequate Knowledge (0-10)</b>	40	66.66%	00	0.00%
<b>Moderate Knowledge (11-20)</b>	20	33.33%	56	93.33%
<b>Adequate Knowledge (21-29)</b>	00	0.00%	04	6.67

**SECTION-C**

**Tab 3. Comparison of Pre -Test and Post -test level of Knowledge regarding vector control measures among rural residents in selected rural area. (n=60)**

Sr. No	Knowledge level	Mean	Mean Difference	Mean Percentage	Standard Deviation
1	Pre-Test	9.45	7.41	15.75%	2.07
2	Post -Test	16.86		28.1%	2.15

**RESULTS;-**

According to the participants' demographic profile, most of them were between the ages

of 22 and 27. The majority of responders had completed elementary or secondary school and a large proportion were housewives. The sample predominantly belonged to a low socioeconomic background.

Assessment of knowledge regarding vector control measures revealed that 30% of participants had good knowledge, 45% demonstrated an average level, and 25% had poor knowledge.

Key observations showed that while most participants were aware of general vector control measures, there was limited understanding of the broader benefits related to disease prevention. Although some participants reported practicing measures learned through health education, the adoption was not uniform across the group.

Inferential analysis demonstrated a statistically significant association between educational status and knowledge levels, as well as between parity and knowledge. However, no significant association was observed between age and knowledge.

## Discussion

This study evaluated the effectiveness of a health education intervention on vector control among rural populations in Kanpur, Uttar Pradesh. Baseline findings showed that many participants had inadequate knowledge about vector-borne diseases, including their transmission, breeding sites, and prevention, likely due to low literacy

levels and limited access to reliable health information.<sup>5</sup>

Following the intervention, participants' knowledge and practices significantly improved, as evidenced by higher post-test scores. Participants showed improved comprehension of preventive measures such as eliminating stagnant water, using mosquito nets, maintaining proper waste disposal, and adopting personal protective behaviors. These findings support existing evidence that structured health education enhances awareness and promotes preventive practices against diseases like malaria and dengue.

Despite improvements, some gaps between knowledge and practice remained, suggesting that socioeconomic and environmental factors may limit the adoption of preventive measures. The study highlights the importance of community-based education programs and the role of healthcare workers in promoting vector control.

However, the study is limited by its small sample size and focus on selected rural areas, which may affect generalizability. Additionally, it assessed only short-term outcomes, and long-term retention of knowledge and sustained behavior change were not examined.<sup>6</sup>

## Implications

### Nursing Practice

- Nurses should provide health education to community people
- Emphasis on practical demonstration on vector born diseases

### Nursing Education

- Include education modules in vector disease
- Promote community-based learning

#### **Nursing Administration**

- Organize health camps and awareness programs
- Strengthen Anganwadi and ASHA worker training

#### **Nursing Research**

- Further studies can explore:

Attitude and practices

Intervention effectiveness

#### **References**

1. Mahanthappa SC, Padma Shali B, Bikemaker SAR, Raghavendra B. A study to assess the impact of health education on larval indices in rural areas of Ballari district. *International Journal of Community Medicine and Public Health*. 2020.
2. Sureshbabu J, Vasudevan S, Raj P. Effectiveness of school health education programs on mosquito-borne diseases. *International Journal of Research in Medical Sciences*. 2017.
3. Roselin V, Sri SanthanaKrishnan V. Knowledge and perception of vector-borne diseases among rural and urban populations. *International Journal of Community Medicine and Public Health*. 2019.
4. Nandha B, Krishnamoorthy K. Impact of education campaign on community-based vector control in Tamil Nadu, India. *Health Education Research*. 2012;27Kumar G, Baharia R, Singh K, et al. Addressing challenges in vector control in India: current strategies and need for novel tools. *BMJ Public Health*. 2024.
5. Stephen LC, Jahnvi G, Thakar PV, et al. Vector control methods adopted in a village in Andaman& Nicobar Islands. *National Journal of Community Medicine*. 2018.
6. Deepthi R, Naresh Kumar SJ, Kamath BTP, Rajeshwari H. Participatory school health education on vector-borne diseases. *International Journal of Health Promotion and Education*. 2014.