Original Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING DENGUE FEVER AND ITS PREVENTION AMONG ADULTS RESIDING AT SELECTED RURAL AREA OF BELAGAVI, KARNATAKA

Mrs. Mera Kolkar. *Associate professor, Department-Community Health Nursing, Vinay Hubballi College of Nursing Belgavi.Rajeev Gandhi university Belgavi 590006 ,Karnataka, India.*

Received:
26/09/2026

Received in Revised Form:
27/10/26

Accepted:
01/11//2026

Published:
05/11/2026

Corresponding Author:
Mrs. Mera Kolkar.
Associate professor, Department-Community Health Nursing, Vinay Hubballi College of Nursing Belgavi.Rajeev Gandhi University Belgavi 590006, Karnataka, India

Email:
merakolkar044@gmail.com

How to Cite this Article

Kolkar M. A study to assess the effectiveness of a structured teaching programme on knowledge regarding dengue fever and its prevention among adults residing in a selected rural area of Belagavi, Karnataka. Ekansh Journal of Nursing, Public Health & Medical Sciences. 2026;1(2):09-19

ABSTRACT

Background: Dengue fever is a mosquito-borne viral disease that poses a continuing public health challenge, particularly in tropical and subtropical regions. Awareness of its transmission, clinical manifestations, warning signs and preventive measures is important for reducing the risk of infection. Community-based health education may help address gaps in knowledge and promote awareness of dengue prevention.

Aim: To assess the effectiveness of a structured teaching programme on knowledge regarding dengue fever and its prevention among adults residing in a selected rural area of Belagavi, Karnataka.

Methods: A quantitative research approach with a quasi-experimental one-group pre-test–post-test design was adopted. The study included 110 adults aged 18–60 years, selected through a non-probability sampling technique from Macche, Belagavi, Karnataka. Data were collected using a structured questionnaire consisting of eight sociodemographic items and 21 knowledge-based multiple-choice questions. A structured teaching programme was administered between the pre-test and post-test assessments. Descriptive statistics and a paired t-test were used for data analysis.

Results: The mean pre-test knowledge score was 8.15 ± 3.19, which increased to 16.70 ± 3.02 in the post-test, showing a mean improvement of 8.55 points. The reported paired t-value was 18.9459 ($p = 0.0001$). In the pre-test, 75.45% of participants had low knowledge, whereas 66.36% attained high knowledge in the post-test. No statistically significant associations were reported between post-test knowledge levels and the selected sociodemographic variables.

Conclusion: The findings demonstrated an improvement in participants' knowledge regarding dengue fever and its prevention following the structured teaching programme. The results indicate that planned health education may be a useful approach for improving dengue-related awareness among rural adults. Community health nurses can contribute to these efforts through regular health education and awareness activities.

(Keywords: Dengue fever; Knowledge; Structured teaching programme; Health education; Adults; Rural community; Dengue prevention)

INTRODUCTION

Dengue is a mosquito-borne viral disease that continues to be a major public health concern in

tropical and subtropical countries. It is transmitted primarily through the bite of infected female *Aedes* mosquitoes.[1] The infection commonly causes fever, headache, muscle and joint pain, nausea and vomiting. While most affected individuals recover with appropriate supportive care, some may develop severe dengue, which can result in bleeding, plasma leakage, shock and organ dysfunction [2].

The transmission of dengue is influenced by various environmental and social factors, such as climatic conditions, inadequate sanitation, improper waste disposal, water-storage practices and population movement[3]. Uncovered water containers, discarded household materials and stagnant water can create favourable conditions for mosquito breeding.[4] Regular environmental cleaning, proper waste management and removal of potential breeding sites are important measures for reducing the risk of dengue transmission [5,6].

Awareness of the mode of transmission, signs and symptoms, warning signs and preventive measures is important in controlling dengue at the community level. Adequate knowledge enables individuals to identify possible mosquito breeding places and adopt suitable protective practices.[7] These include keeping water-storage containers covered, regularly cleaning domestic surroundings, disposing of waste appropriately and taking measures to prevent mosquito bites.

Several studies have explored the level of knowledge regarding dengue fever among different population groups. Madhu and Vinay Kumar assessed dengue-related knowledge among adults residing in a rural area of Chamarajanagar District, Karnataka [8]. Similarly, Singh et al. examined the effectiveness of a planned teaching programme on dengue fever and its preventive measures among adults living in selected urban slums [9]. The findings of such studies emphasise the importance of identifying existing knowledge gaps and providing appropriate health education to improve awareness of dengue prevention.

In rural settings, household practices concerning water storage, sanitation and waste disposal may contribute to the presence of mosquito breeding sites. Providing relevant and understandable health information can encourage individuals to adopt preventive practices as part of their daily routine. Community awareness is therefore an important component of dengue prevention and vector-control activities.[10]

A structured teaching programme is a planned educational approach that provides information in an organised manner[12,15]. In the context of dengue prevention, it can cover the causes, transmission, signs and symptoms, warning signs, complications and preventive measures associated with the disease. Assessing knowledge before and after the programme helps identify changes in participants' knowledge scores following the educational intervention.

Considering the importance of community awareness in dengue prevention, the present study was undertaken to assess knowledge regarding dengue fever and its preventive measures among adults residing in a selected rural area of Belagavi, Karnataka. The study also aimed to evaluate the effectiveness of a structured teaching programme by comparing the participants' pre-test and post-test knowledge scores.

NEED FOR THE STUDY

Dengue fever continues to be an important public health concern, particularly in tropical and subtropical regions where environmental conditions may favour mosquito breeding. Effective prevention depends on maintaining proper sanitation, avoiding water accumulation, covering water-storage containers and adopting measures to prevent mosquito bites. Awareness of the warning signs and the importance of seeking timely medical care are also essential for preventing serious complications [6-9].

Previous studies have explored knowledge regarding dengue fever among adults living in rural communities, highlighting the need to understand the level of awareness about its transmission and preventive measures [10]. Research evaluating planned teaching programmes has also examined the contribution of organised health education towards improving knowledge about dengue prevention [12].

Although information about dengue is available through various health communication channels, community members may have gaps in their understanding of mosquito breeding conditions, disease transmission, warning signs and appropriate preventive practices. Such gaps may affect the adoption of recommended preventive measures at the household level. Therefore, community-based health education is important for providing clear and relevant information about dengue prevention.[14]

A structured teaching programme provides an organised method of delivering health information and addressing important aspects of dengue fever. Assessing participants' knowledge before and after the educational intervention helps determine the change in their knowledge scores and provides an indication of the educational outcome.[13,16,17]

Considering the continuing importance of dengue prevention, the present study was undertaken among adults residing in a selected rural area of Belagavi, Karnataka. The findings are expected to provide information about participants' knowledge and the changes observed following the structured teaching programme. They may also be useful in planning further community-based health education activities.

AIM OF THE STUDY

Aim

To assess the effectiveness of a structured teaching programme on knowledge regarding dengue fever and its prevention among adults residing in a selected rural area of Belagavi, Karnataka.

OBJECTIVES

1. To assess the knowledge regarding dengue fever and its prevention among adults before the administration of the structured teaching programme.
2. To assess the knowledge regarding dengue fever and its prevention among adults after the administration of the structured teaching programme.
3. To compare the pre-test and post-test knowledge scores regarding dengue fever and its prevention among adults.

MATERIALS AND METHODS

Research Approach

A quantitative research approach was adopted to assess the knowledge of adults regarding dengue fever and its prevention before and after the administration of a structured teaching programme.

Research Design

A quasi-experimental, one-group pre-test–post-test research design was used. Knowledge was assessed among the same participants before and after the structured teaching programme to determine the changes in their knowledge scores following the educational intervention.

Study Setting

The study was conducted in the rural area of Macche, Belagavi District, Karnataka, India.

Study Population

The study population comprised adults residing in the selected rural area of Macche, Belagavi District, Karnataka.

Sample Size

A total of 110 adults aged 18–60 years were included in the study.

Sampling Technique

A non-probability sampling technique was adopted to select 110 eligible adults from the selected rural area of Macche.

Inclusion Criteria

Adults were included in the study if they:

1. Were aged between 18 and 60 years.
2. Were residing in the selected rural area of Macche, Belagavi.
3. Were willing to participate in the study.
4. Were able to read and understand Kannada or English.

Exclusion Criteria

Adults who were unwilling to participate in the study were excluded.

Development and Description of the Data-Collection Tool

A structured questionnaire was developed to assess knowledge regarding dengue fever and its prevention. The tool was prepared following a review of relevant literature, development of a blueprint, expert suggestions, necessary modifications and translation into Kannada.

The questionnaire consisted of two sections:

Section I: Demographic Characteristics

This section contained eight items covering age, sex, religion, educational qualification, occupation, marital status, monthly family income and type of family.

Section II: Structured Knowledge Questionnaire

This section consisted of 21 multiple-choice questions designed to assess knowledge regarding dengue fever and its prevention. Each question had four response options, with one correct answer.

One mark was awarded for each correct response, while incorrect responses received zero marks. The maximum obtainable score was 21.

The knowledge scores were classified into three levels:

Knowledge level	Score
Low	0–7
Moderate	8–14
High	15–21

Validity and Reliability of the Tool

The content validity of the structured knowledge questionnaire was assessed by four experts from the Department of Community Health Nursing. Their suggestions were considered, and appropriate modifications were incorporated into the final instrument.

The reliability of the questionnaire was assessed using the split-half method, followed by Karl Pearson's correlation technique. The reliability coefficient and its statistical interpretation were considered in evaluating the consistency of the instrument.

Pilot Study

A pilot study was conducted during the second week of November 2024 in the rural area of Macche, Belagavi, involving 11 adults. Necessary permission was obtained from the concerned authorities before conducting the pilot study.

The pilot study was undertaken to assess the feasibility of the research procedure, determine the suitability of the data-collection tool and identify any difficulties associated with data collection. The findings were used to assess the preparedness for conducting the main study**.**

Data-Collection Procedure

The main study was conducted from 14 November to 30 November 2024 in the selected rural area of Macche, Belagavi. Ethical clearance and formal administrative permission were obtained before commencing data collection.

Initially, the eligible participants were identified, and the purpose and objectives of the study were explained to them. Written informed consent was obtained before administering the structured knowledge questionnaire.

A pre-test was conducted to assess participants' existing knowledge regarding dengue fever and its prevention. Subsequently, the structured teaching programme was administered, covering the important aspects of dengue fever, including its transmission, signs and symptoms, warning signs, mosquito breeding sites and preventive measures.

Following the educational intervention, a post-test was conducted using the structured knowledge questionnaire to assess changes in participants' knowledge scores. The same participants were assessed during both the pre-test and post-test.

Ethical Considerations

Institutional Ethical Committee approval was obtained before conducting the main study. Formal administrative permission was also obtained from the concerned institutional authorities and relevant local authorities.

The purpose and procedures of the study were explained to the participants, and written informed consent was obtained before data collection. Participation was voluntary, and participants were informed about their right to withdraw from the study. Privacy, confidentiality and anonymity of the collected information were maintained throughout the research process.

Statistical Analysis

The collected data were organised and analysed using the Statistical Package for the Social Sciences (SPSS).

Descriptive and inferential statistical methods were employed to analyse the findings. Frequency and percentage were used to describe the demographic characteristics of the participants. Mean and standard deviation were calculated to summarise the pre-test and post-test knowledge scores.

A paired *t*-test was used to compare the mean pre-test and post-test knowledge scores among the participants and determine the statistical significance

of the observed difference. A significance level of 0.05 was considered for inferential analysis.

RESULTS

SECTION I: Distribution of Respondents According to Sociodemographic Variables

Table 5.1: Frequency and percentage distribution of respondents according to selected sociodemographic characteristics (N = 110)

Sociodemographic variables	Category	Frequency (f)	Percentage (%)
Age	18–21 years	25	22.73
	22–25 years	28	25.45
	26–29 years	22	20.00
	30–40 years	35	31.82
Gender	Male	42	38.18
	Female	68	61.82
Religion	Hindu	93	84.55
	Muslim	12	10.91
	Christian	5	4.55
Educational status	Illiterate	12	10.91
	Primary school	37	33.64
	Secondary school	32	29.09
	Graduate	29	26.36
Occupation	Housewife	50	45.45
	Private sector	18	16.36
	Government sector	7	6.36
	Others	35	31.82
Marital status	Married	75	68.18
	Unmarried	28	25.45
	Divorced/Widowed	7	6.36
Monthly family income (₹)	5,000–10,000	17	15.45
	10,001–20,000	52	47.27
	20,001–30,000	36	32.73
	30,001–40,000	5	4.55
Type of family	Nuclear	49	44.55
	Joint	43	39.09
	Extended	11	10.00
	Blended	7	6.36
Total		110	100.00

The sociodemographic distribution revealed that 31.82% of the respondents were aged The sociodemographic findings showed that the largest proportion of respondents (31.82%) belonged to the 30–40 years age group, followed by 25.45% in the 22–25 years group. Participants aged 18–21 years and 26–29 years accounted for 22.73% and 20.00%, respectively. Females constituted 61.82% of the study population, while males represented 38.18%.

Regarding religion, the majority of respondents (84.55%) were Hindu, followed by Muslims (10.91%) and Christians (4.55%). In terms of educational status, 33.64% had completed primary education, 29.09% had secondary education and 26.36% were graduates. The remaining 10.91% were illiterate.

With respect to occupation, housewives formed the largest group (45.45%), followed by respondents engaged in other occupations (31.82%). Those employed in the private and government sectors accounted for 16.36% and 6.36%, respectively.

Most participants (68.18%) were married, whereas 25.45% were unmarried and 6.36% were divorced or widowed. Concerning monthly family income, the largest proportion (47.27%) belonged to the ₹10,001–₹20,000 category, followed by 32.73% in the ₹20,001–₹30,000 category. Nuclear families were most common (44.55%), closely followed by joint families (39.09%).

Overall, the respondents represented different age groups, educational backgrounds, occupations, income categories and family structures. This sociodemographic profile provided a basis for examining knowledge regarding dengue fever and its prevention among adults from varied backgrounds.

SECTION II: Comparison of Pre-test and Post-test Mean Knowledge Scores

Table 5.2: Comparison of pre-test and post-test mean knowledge scores regarding dengue fever and its prevention using paired t-test (N = 110)

Assessment	Mean	SD	Mean difference	SD of difference	Paired t-value	p-value
Pre-test	8.15	3.19	8.55	4.73	18.9459	0.0001*
Post-test	16.70	3.02				

Statistically significant at $p < 0.05$.

The comparison of knowledge scores demonstrated an increase in the respondents' performance following the structured teaching programme. The mean pre-test score was 8.15 (SD = 3.19), which increased to 16.70 (SD = 3.02) in the post-test. The difference between the two mean scores was 8.55 points.

The paired t-test yielded a calculated value of 18.9459, with a reported p-value of 0.0001. Since the p-value was below the predetermined significance level of 0.05, the difference between pre-test and post-test knowledge scores was statistically significant.

These findings indicate that respondents demonstrated better knowledge after receiving the structured teaching programme. Hence, the research hypothesis H1 was supported by the reported findings.

SECTION III: Distribution of Respondents According to Pre-test and Post-test Knowledge Levels

Table 5.3: Distribution of respondents according to their pre-test and post-test knowledge levels (N = 110)

Knowledge level	Pre-test f	Pre-test %	Post-test f	Post-test %
Low (≤50%)	83	75.45	5	4.55
Moderate (51–75%)	27	24.55	32	29.09
High (>75%)	0	0.00	73	66.36
Total	110	100.00	110	100.00

The comparison of pre-test and post-test knowledge levels demonstrated a considerable improvement in participants' knowledge following the structured teaching programme.

In the pre-test assessment, the majority of respondents (83; 75.45%) had a low level of knowledge, while 27 (24.55%) had a moderate level. None of the participants achieved a high knowledge level before the intervention.

In the post-test assessment, only 5 respondents (4.55%) remained in the low-knowledge category. A moderate level of knowledge was observed among 32 respondents (29.09%), while the majority (73; 66.36%) attained a high level of knowledge.

The findings demonstrate a clear shift in the distribution of knowledge scores towards the higher category after the educational intervention. This pattern, together with the increase in the mean knowledge score, suggests that the structured teaching programme was associated with improved knowledge regarding dengue fever and its prevention among the study participants.

SECTION IV: Association Between Pre-test Knowledge Levels and Selected Sociodemographic Variables

The pre-test findings showed that low knowledge regarding dengue fever and its prevention was predominant across all sociodemographic groups. The proportion of respondents with low knowledge ranged from 65.71% to 82.14% across age groups. A higher proportion of males (83.33%) had low knowledge compared with females (70.59%).

Low knowledge was observed among 74.19% of Hindu, 75.00% of Muslim and all Christian respondents. It was highest among illiterate participants (91.67%) and those employed in the private sector (88.89%). Similarly, 74.67% of married and 78.57% of unmarried respondents had low knowledge. The proportion was highest among respondents with a monthly family income of ₹30,001–₹40,000 (100%) and those belonging to blended families (85.71%).

The supplied statistical results showed no significant association between pre-test knowledge and age, gender, religion, education, occupation, marital status, monthly family income or type of family (all reported p-values greater than 0.05).

SECTION V: Association Between Post-test Knowledge Levels and Selected Sociodemographic Variables

The post-test findings demonstrated that a high level of knowledge was attained across most sociodemographic groups, although some variations were observed. The proportion achieving high knowledge ranged from 48.57% to 78.57% across age groups, with equal proportions of respondents aged 30–40 years attaining moderate and high knowledge (48.57% each). High knowledge was observed among 76.19% of males and 60.29% of females.

Across religious groups, high knowledge was reported among 63.44% of Hindus, 83.33% of Muslims and 80.00% of Christians. Regarding education, the highest proportion of high knowledge was observed among respondents with primary education (72.97%), while 41.67% of illiterate respondents attained this level. Government employees showed the highest proportion of high knowledge (85.71%) among occupational groups.

High knowledge was attained by 65.33% of married and 71.43% of unmarried respondents. Across income categories, the proportion ranged from 52.94% to 100%. Among family types, blended families showed the highest proportion of high knowledge (85.71%), followed by joint (72.09%) and nuclear families (65.31%).

The reported statistical analysis revealed no significant association between post-test knowledge levels and age ($p = 0.090$), gender ($p = 0.187$), religion ($p = 0.457$), education ($p = 0.539$), occupation ($p = 0.478$), marital status ($p = 0.549$), monthly family income ($p = 0.275$) or type of family ($p = 0.189$).

DISCUSSION

Sociodemographic Characteristics of the Participants

The findings revealed that the participants belonged to different age groups and sociodemographic backgrounds. The largest proportion of respondents belonged to the 30–40 years age group (31.82%), while females constituted 61.82% of the study population. Most participants were Hindu (84.55%), and primary education was the most frequently reported educational qualification (33.64%). Housewives represented the largest occupational group (45.45%), and the majority of respondents were married (68.18%).

Regarding monthly family income, nearly half of the participants belonged to the ₹10,001–₹20,000 category (47.27%). Nuclear families accounted for the largest proportion (44.55%), followed by joint families (39.09%).

The variation in educational, occupational and socioeconomic backgrounds indicates the importance of providing community health education in a simple and understandable manner. Information regarding dengue prevention should be communicated in a way that is appropriate for individuals with different levels of education and health awareness.

Comparison of Pre-test and Post-test Knowledge Scores

The findings of the present study demonstrated an improvement in knowledge regarding dengue fever and its prevention following the structured teaching programme. The mean pre-test knowledge score was 8.15 ± 3.19, which increased to 16.70 ± 3.02 in the post-test. The mean difference between the two assessments was 8.55 points.

The paired t-test showed a statistically significant difference between the pre-test and post-test knowledge scores ($t = 18.9459$, $p = 0.0001$). This indicates that the improvement in knowledge scores was statistically significant at the 0.05 level.

The increase in the post-test score suggests that participants had a better understanding of dengue fever after receiving the structured teaching programme. The organised presentation of information regarding dengue transmission, signs and symptoms, warning signs, mosquito breeding sites and preventive measures may have helped participants understand the important aspects of the disease.

These findings are comparable with the study conducted by Singh et al. [5], which examined the effectiveness of a planned teaching programme on dengue fever and its preventive measures among adults residing in selected urban slums. Both studies highlight the relevance of planned health education in improving awareness regarding dengue prevention.

Comparison of Pre-test and Post-test Knowledge Levels

The distribution of participants according to their knowledge levels also demonstrated an improvement following the educational intervention. In the pre-test, the majority of respondents (75.45%) had low knowledge, while the remaining participants

(24.55%) had moderate knowledge. None of the respondents attained a high level of knowledge.

Following the structured teaching programme, a considerable shift towards the higher knowledge category was observed. More than half of the participants (66.36%) attained a high level of knowledge, while 29.09% had moderate knowledge. Only a small proportion (4.55%) continued to have low knowledge in the post-test.

The findings indicate that the educational intervention was followed by an improvement in participants' knowledge regarding dengue fever and its prevention. The reduction in the proportion of respondents with low knowledge and the increased proportion attaining high knowledge reflect a favourable change in the overall knowledge distribution.

This improvement is important from a community health perspective because awareness of mosquito breeding conditions, proper water storage, environmental cleanliness and personal protective measures forms an important part of dengue prevention. However, improvement in knowledge alone does not necessarily establish a corresponding change in preventive practices.

Association Between Pre-test Knowledge and Selected Sociodemographic Variables

The pre-test findings revealed that low knowledge was predominant across all selected sociodemographic groups. A higher proportion of low knowledge was observed among illiterate participants (91.67%), respondents employed in the private sector (88.89%) and those belonging to the monthly family income category of ₹30,001–₹40,000 (100%).

Similarly, low knowledge was observed among 83.33% of male respondents and 70.59% of female respondents. Across the different age groups, low knowledge ranged from 65.71% to 82.14%.

The findings further indicated that low knowledge was present among participants belonging to different religious groups, marital status categories and family types. The reported statistical analysis showed no significant association between pre-test knowledge levels and the selected sociodemographic variables, with all reported p-values greater than 0.05.

These findings suggest that inadequate knowledge regarding dengue fever and its prevention was observed across different sections of the study population. Therefore, community health education should address the information needs of the entire community rather than focusing only on a particular sociodemographic group.

Association Between Post-test Knowledge and Selected Sociodemographic Variables

The post-test findings showed that high knowledge was attained across most sociodemographic categories, although some variations were observed.

Among participants aged 18–21 years, 68.00% attained high knowledge. The corresponding proportions were 78.57% among those aged 22–25 years and 77.27% among those aged 26–29 years. In the 30–40 years age group, equal proportions of respondents (48.57%) demonstrated moderate and high knowledge.

Regarding gender, high knowledge was observed among 76.19% of males and 60.29% of females. Across religious groups, the corresponding proportions were 63.44% among Hindus, 83.33% among Muslims and 80.00% among Christians.

With respect to educational status, high knowledge was observed among 72.97% of participants with primary education and 71.88% of those with secondary education. Among occupational groups, government employees showed the highest proportion of high knowledge (85.71%).

The findings also revealed that 65.33% of married respondents and 71.43% of unmarried respondents attained high knowledge. Across monthly family income categories, the proportion of participants with high knowledge ranged from 52.94% to 100.00%. Among different family types, the highest proportion was observed in blended families (85.71%), followed by joint families (72.09%).

Despite these differences in the distribution of knowledge levels, the reported statistical analysis did not demonstrate significant associations between post-test knowledge and age, gender, religion, educational status, occupation, marital status, monthly family income or type of family (p greater than 0.05).

These findings indicate that high knowledge was attained across different sociodemographic groups after the educational intervention. However, the variations observed between categories should be interpreted cautiously, particularly where the number of participants was small.

Overall Discussion

The overall findings of the present study demonstrated an improvement in knowledge regarding dengue fever and its prevention following the structured teaching programme. The increase in the mean knowledge score and the shift from predominantly low pre-test knowledge to predominantly high post-test knowledge indicate a favourable educational outcome.

Furthermore, the findings showed that improved knowledge was observed across different sociodemographic groups, although no statistically significant associations were reported between post-test knowledge levels and the selected variables.

The results highlight the importance of planned health education in improving awareness of dengue fever and its prevention among rural adults. Community-based educational activities may be incorporated into routine nursing and public health initiatives to strengthen awareness of preventive measures and encourage community participation in vector control.

LIMITATIONS

1. The study was conducted in a selected rural area of Macche, Belagavi, Karnataka; therefore, the findings may not be generalisable to all rural communities.
2. A non-probability sampling technique was used, which may limit the representativeness of the study sample.
3. The study included only 110 participants, which may limit the applicability of the findings to a wider population.
4. The absence of a separate control group limits the ability to attribute the observed improvement exclusively to the structured teaching programme.
5. The study assessed participants' knowledge scores and did not evaluate whether the improvement resulted in changes in actual dengue preventive practices.
6. Long-term retention of knowledge could not be established because the assessment was limited to the pre-test and immediate post-test

NURSING IMPLICATIONS

Nursing Education: The study emphasises the need to strengthen nursing students' understanding of dengue fever and its prevention. The topic may be incorporated into classroom teaching and clinical learning activities, with emphasis on disease transmission, clinical manifestations, warning signs, mosquito breeding and preventive strategies. This may help students develop the knowledge and communication skills required for community health education.

Nursing Practice: Nurses can utilise their knowledge to educate individuals and families about dengue prevention. During home visits and community interactions, they can explain the importance of eliminating mosquito breeding sites, maintaining clean surroundings, storing water safely and recognising early warning signs. They can also encourage families to participate in preventive activities within their communities.

Nursing Administration: Nursing administrators can support the organisation of community awareness activities by coordinating with local health departments, community health workers and other healthcare professionals. They may facilitate the availability of educational materials and encourage regular participation of nursing personnel in dengue prevention campaigns.

Nursing Research: The present study may provide a reference for future investigations related to dengue awareness and prevention. Further research may be undertaken in different communities with larger study populations and appropriate comparison groups. Studies assessing the retention of knowledge and actual preventive practices over time may provide additional evidence regarding the outcomes of health education interventions.

RECOMMENDATIONS

1. Similar studies may be conducted among larger populations in different rural and urban settings.
2. Future studies may include a control group to provide a stronger assessment of the educational intervention.
3. Follow-up assessments may be conducted to evaluate the retention of knowledge over time.

4. Further research may assess changes in actual dengue-preventive practices following health education.

5. Community awareness programmes may be organised periodically to reinforce information regarding mosquito breeding prevention and personal protection.

CONCLUSION

The present study was undertaken to assess the effectiveness of a structured teaching programme on knowledge regarding dengue fever and its prevention among adults residing in a selected rural area of Macche, Belagavi, Karnataka.

The findings revealed an improvement in participants' knowledge following the structured teaching programme. The mean knowledge score increased from 8.15 ± 3.19 in the pre-test to 16.70 ± 3.02 in the post-test, with a mean difference of 8.55 points. The paired t-test showed a statistically significant difference between the two assessments ($t = 18.9459$, $p = 0.0001$).

The distribution of knowledge levels also showed a favourable change. Before the intervention, most participants had low knowledge, whereas after the intervention, the majority attained a high level of knowledge. No statistically significant association was reported between post-test knowledge levels and the selected sociodemographic variables.

The findings suggest that a structured teaching programme can be a useful educational approach for improving awareness regarding dengue fever and its prevention among rural adults. The study also highlights the role of community health nurses in providing health education and encouraging appropriate preventive measures at the household level.

Overall, regular community-based health education may help strengthen public awareness and support ongoing efforts to prevent dengue transmission.

DECLARATIONS

Ethical Approval

Ethical approval was obtained from the Institutional Ethics Committee before the commencement of the study. Necessary administrative permission was also secured from the concerned authorities. The study was conducted in accordance with ethical principles for research involving human participants. Privacy, confidentiality and anonymity were maintained throughout the research process.

Informed Consent

Written informed consent was obtained from all participants before data collection. The purpose and procedure of the study were explained, and participation was entirely voluntary.

Conflict of Interest

The authors declare that they have no conflict of interest related to this study.

Funding

No external financial support was received for conducting this study or preparing the manuscript.

Authors' Contributions

The author(s) contributed to the planning and design of the study, development of the research instrument, data collection, statistical analysis, interpretation of findings and preparation of the manuscript

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to appropriate ethical and confidentiality requirements.

REFERENCES

1. World Health Organization. Dengue and severe dengue [Internet]. Geneva: World Health Organization; 2025 Aug 21. Available from: https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue

2. World Health Organization, Special Programme for Research and Training in Tropical Diseases. Dengue: guidelines for diagnosis, treatment, prevention and control. Geneva: World Health Organization; 2009.

3. World Health Organization. Global strategy for dengue prevention and control, 2012–2020. Geneva: World Health Organization; 2012.

4. National Centre for Vector Borne Diseases Control, Ministry of Health and Family Welfare, Government of India. National guidelines for clinical management of dengue fever 2023. New Delhi: Government of India; 2023.

5. National Vector Borne Disease Control Programme, Ministry of Health and Family Welfare, Government of India. Strategy and plan of action for effective community participation for prevention and control of dengue. New Delhi: Government of India.

6. Murhekar MV, Kamaraj P, Kumar MS, Khan SA, Allam RR, Barde P, et al. Burden of dengue infection in India, 2017: a cross-sectional population-based serosurvey. Lancet Glob Health. 2019;7(8)–73. doi:10.1016/S2214-109X(19)30250-5.

7. Shet A, Kang G. Dengue in India: towards a better understanding of priorities and progress. Int J Infect Dis. 2019;84S–3. doi:10.1016/j.ijid.2019.03.008.

8. Haldar A, Das Gupta U, Majumdar KK, Laskar K, Ghosh S, Sen S. Community perception of dengue in slum areas of metropolitan city of West Bengal. J Commun Dis. 2008;40(3):205–10.

9. Krishnamoorthy Y, Chandar D, Jayaseelan V, Vijayakumar K, Sivaranjini K, Vijayageetha M. Household survey on public awareness and attitudes toward dengue infection in rural Tamil Nadu, South India. J Educ Health Promot. 2018;7:171. doi:10.4103/jehp.jehp_81_18.

10. Jeelani S, Sabesan S, Subramanian S. Community knowledge, awareness and preventive practices regarding dengue fever in Puducherry, South India. Public Health. 2015;129(6):790–6. doi:10.1016/j.puhe.2015.02.026.

11. Nivedita. Knowledge, attitude, behaviour and practices (KABP) of the community and resultant IEC leading to behaviour change about dengue in Jodhpur City, Rajasthan. J Vector Borne Dis. 2016;53(3):279–82. doi:10.4103/0972-9062.191347.

12. Kusuma YS, Burman D, Kumari R, Lamkang AS, Babu BV. Impact of health education based intervention on community's awareness of dengue and its prevention in Delhi, India. Glob Health Promot. 2019;26(1):50–9. doi:10.1177/1757975916686912.

13. Singh R, Kumar R, Masood J. Effectiveness of planned teaching programme on knowledge regarding dengue fever and its preventive measures among adult population in selected urban slums. Int J Community Med Public Health. 2022;9(1):252–7. doi:10.18203/2394-6040.ijcmph20215006.

14. Lachyan A, Zaki RA, Banerjee B, Aghamohammadi N. The effect of community-based intervention on dengue awareness and prevention among poor urban communities in Delhi, India. J Res Health Sci. 2023;23(4). doi:10.34172/jrhs.2023.131.

15. Alok S, Nessa S, Begum AS, Kumar R. Impact of customised community training program on the prevention and control of dengue fever: a study from India. Eval Program Plann. 2025;111:102597. doi:10.1016/j.evalprogplan.2025.102597.

16. Rathod S, Ambad R, Juneja H, Ugemuge S, Bandre G. Assessing knowledge, attitudes, and practices on dengue fever among patients in Central India: a cross-sectional study. J Pharm Bioallied Sci. 2024;16(Suppl 4)–4. doi:10.4103/jpbs.jpbs_789_24.

17. World Health Organization. Handbook for integrated vector management. Geneva: World Health Organization; 2012. ISBN: 978-92-4-150280-1.

Copy right & Licensing

© 2026 Mrs. Mera Kolkar. Published by Ekansh Journal of Nursing, Public Health & Medical Sciences (EJNPH). This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution 4.0 International License (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/). The author retains copyright and full publishing rights without restrictions.