

“A Study To Assess Knowledge Regarding Dengue Fever Among Adults Residing In Rural Populations.”

Mrs. Anagha Katti¹, Mrs. Sushama Shete² Jeslin Jose⁴ Jeena John K.S⁵ Jerry Elsa Jacob⁶, Jemi Sara Shaji⁷ Jadhav Nandini Jaywant⁸

¹Assistant Professor, Department of Community Health Nursing Krishna Institute of Nursing Sciences, Karad

²Department of Child Health Nursing Lecturer, Krishna Institute of Nursing Sciences, Karad
^{4,5,6,7,8}Krishna Institute of Nursing Sciences, Karad, Maharashtra, India.

Cite this paper as: Mrs. Anagha Katti, Mrs. Sushama Shete, Jeslin Jose, Jeena John K.S, Jerry Elsa Jacob, Jemi Sara Shaji, Jadhav Nandini Jaywant (2024). “A study to assess knowledge regarding dengue fever among adults residing in rural populations.”. *Frontiers in Health Informatics*, 13 (8) 2788-2792

Abstract:

Introduction: Dengue, often referred to as “break-bone fever,” is a viral infection to humans through the bites of Aedes Mosquitoes, particularly Aedes Aegypti and Aedes albopictus .

Dengue fever is an emerging disease of the tropical and sub-tropical regions affecting urban and peri-urban areas. Most of the people living in close proximity can facilitate the rapid spread of the virus. High population growth strains existing water supply systems, leading to inadequate water distribution and increased reliance on stored water. Inefficient or poorly maintained drainage systems can lead to the accumulation of water, providing breeding sites for mosquitoes. Inadequately managed waste disposal can lead to litter accumulating in public areas. Items like discarded tires, and buckets, can collect rainwater and become breeding grounds for mosquitoes.

Aim: To assess the level of knowledge regarding dengue fever among adults residing in rural populations.

Materials and Methods: A non-experimental descriptive research design was used. 100 adults were selected by using a non-probability Convenient sampling technique from the rural population.

Result: Findings of the study revealed that 70 (70%) adults were average, 21 (21%) good whereas 9 (9 %) poor level of knowledge regarding Dengue fever.

Conclusion: The study concluded that adults had an average level of knowledge regarding dengue fever so there is a need to improve knowledge and positive practice to prevent dengue fever. This can be achieved by providing motivational and educational activities to promote health.

Keywords: Assess, Knowledge, Adults, dengue fever, Rural Population.

Introduction:

The dengue virus is transmitted to humans through the bites of infected female mosquitoes, primarily the *Aedes aegypti* mosquito. Dengue fever is an emerging disease of the tropical and sub-tropical regions affecting urban and peri-urban areas.

Various environmental and socio-economic factors contribute to the proliferation of mosquito vectors that transmit the dengue virus. In many areas, residents often store water in containers (buckets, plastic barrels, cement cisterns, tanks) to secure daily needs. If these containers are uncovered or not properly managed, they

create ideal breeding habitats for Aedes mosquitoes. As urban areas expand, higher population densities present increased opportunities for dengue transmission.

Most of the people living in close proximity can facilitate the rapid spread of the virus. Many dengue infections are asymptomatic or produce only mild illness, the virus can increase more severe cases and even death. Community risks to dengue also depend on a population's knowledge of dengue, as the exposure is closely related to behaviors such as water storage, plant keeping, and self-protection against mosquito bites. Crowded living conditions can lead to limited awareness and access to preventive resources, hindering effective dengue control. Through multiple social and environmental factors: population density, human mobility, access to reliable water sources, water storage practices, etc.¹

Surveillance helps to identify areas with high breeding potential. This includes assessing environmental conditions conducive to mosquito breeding, monitoring larval indices, and adult mosquito trapping.

In the period from January to May this year, a total of 1,755 dengue cases have been reported. This figure represents approximately one and a half of the total number of cases in the same period last year, which was 1,237 cases².

Severe dengue can cause life-threatening problems such as plasma leakage, fluid buildup, breathing difficulties, significant bleeding, or organ dysfunction. Timely identification and medical management can reduce the death rate. Effective management and prevention of dengue rely on successful measures to control the vectors.³

Objectives: To assess the level of knowledge on dengue fever among adults residing in rural populations.

Materials and Methods: An evaluative approach by using a one-group pre-test design to conduct the study in selected rural areas. The study was conducted on 100 subjects from the rural population by using a convenient sampling technique. Semi-structured questionnaires were used to assess the pre-test level of knowledge among adults on Dengue fever.

Result:

SECTION I- Table No. I- Distribution of subjects according to socio-demographic variables.

N=100

Sr . No	Socio-Demographic Variables	Frequency (F)	Percentage %
1.	Age in years		
	a) 19 -25	15	15
	b) 26-35	25	25
	c) 36-45	20	20
	d) 46 & above	40	40
2.	Gender		
	a) Male	43	43
	b) Female	57	57
3.	Religion		
	a) Hindu	94	94
	b) Muslim	06	06
	c) Christian	00	00
	d) Others	00	00
4.	Education		
	a) Illiterate	11	11

	b) Primary	31	31
	c) Secondary	32	3
	d) HSc / Graduate/ Post Graduate	26	26
5.	Occupation		
	a) Skilled worker	12	12
	b) Self-employed	21	21
	c) Farmer	29	29
	d) Housewife	38	38
6.	The monthly income of the family		
	a) 3000 & less than 3000	12	12
	b) 3001-6000	22	22
	c) 6001-9000	47	47
	d) 9001& more	19	19
7.	Type of family		
	a) Nuclear	26	26
	b) Joint	74	74
8.	Source of Education		
	a) Healthcare worker	64	64
	b) Neighbors	10	10
	c) Friends circle	02	02
	d) TV/Newspaper	24	24

Table I : indicates that 40 (40 %) samples belong to the age group of 46 and above years in terms of gender, 57 (57%) were females, 94 (94%) were Hindu religion, educational status 32 (32%) were from secondary education, 38 (38%) are housewives and 47 (47%) had a monthly income up to Rs. 6001 – 9000/- also 74 (74%) subjects belonged to a joint family while 26 (26%) were from a nuclear family.

Section II – PART A

Knowledge of subjects regarding Dengue fever and its prevention and control.

Table: II Area-wise knowledge of subjects according to pretest and post-test scores regarding dengue fever.

Area of Analysis	Knowledge Regarding Dengue Fever	No of Subjects	%
(Pre-Test)	GOOD	21	21 %
	AVERAGE	70	70 %
	POOR	9	9 %
	TOTAL	100	100%

Table II -depicts that in the pre-test 70 (70%) subjects had average, 21 (21%) good whereas 9 (9 %) were poor knowledge regarding Dengue fever.

Discussion:

Dengue virus (DENV) is a significant global health concern, primarily due to Aedes mosquitoes, especially Aedes aegypti and Aedes albopictus. The virus is prevalent in tropical and subtropical regions with urban and semi-urban areas being particularly vulnerable to population density and favorable breeding conditions for

mosquitoes. The management of dengue primarily revolves around supportive care and monitoring for the development of severe dengue. Timely diagnosis and recognition of warning signs are critical to improving patient outcomes and preventing complications. When there is a risk of human-vector contacts, such as in residences, workplaces, schools, and hospitals vector control activities should be conducted⁴.

Mahadik Pratik, Nangare Deepali, Patahade Shrikawarv and Sharmila Waghmode (2018) The mean score of knowledge regarding home care about dengue fever was 18.135 with 0.97858 standard deviation which shows average knowledge and the 'p' value was more than the level of significance 0.05 so there is an association between age with knowledge. There is no association between gender, education, or occupation with knowledge.⁵

Study by Mrs. Madhu S^{1*}, Mr. Vinay Kumar G² (2020) 38.7% of adults have moderate, and 61.3% of adults have less knowledge about Dengue fever. In this study, in 70 (70%) subjects had average, 21 (21%) good whereas 9 (9 %) were poor knowledge about Dengue fever.⁶

Study by Renita Priya Dsouza¹ Devina E Rodrigues² Prakash M Saldanha³ (2022) The mean score was 23.58 +_7.08 in the pretest and the posttest mean score was 53.01 3.90. In pre-test, the minimum score was 13 and in the post-test, it was 44 with a score of 60. The intervention was effective and led to a 49.05% gain in knowledge of children from the pretest to the posttest and the difference in the mean value was significant ($t = 36.58$, $p < 0.001$)⁷. In the present study knowledge regarding Dengue fever mean was 7.47 ± 1.439

Study supported by **Rupali Singh^{1*}, Rohit ash Kumar², Jamal Masood³ (2022)**

The results indicate that the mean post-test knowledge score was higher than the pre-test mean with a standard deviation of 20.15 ± 4.02 and 7.67 ± 3.11 respectively. At present the mean score with a standard deviation is 7.47 ± 1.439 . There was a change in the knowledge level of the adult population⁸.

A study supported by **Veena Rajput (2022)** study results that higher secondary students 81.66% had poor knowledge before and after the intervention, 100% improvement and they gained knowledge about dengue and its prevention. The findings reveal that in the pre-test knowledge scores were average⁹.

Ms. Sangeeta Gajanan Pardeshi¹, Mr. Vilas T. Rathod², (2023) study the mean post-test score obtained by the subjects ($x_2 = 17.16$) was higher than the mean pre-test knowledge score ($x_1 = 11.13$). The calculated 't' value ($t_{29} = 9.57$) was significant ($t_{29} = 2.04$)¹⁰.

Conclusion: The study concluded that adults had an average level of knowledge regarding dengue fever so there is a need to improve knowledge and positive practice to prevent dengue fever.

The implication of the study :

- Health care providers can increase awareness and understanding of dengue fever within community settings. They can effectively contribute to dengue prevention and control, along with the role of health education programs in reinforcing that knowledge about dengue fever.
- Creating different types of Audio-visual aids including pamphlets, posters, and flashcards for teaching about dengue fever is to enhance awareness and understanding.
- Conducting in-service and continuing education programs for students is a great way to enhance their understanding of dengue fever. These programs can equip them with essential knowledge about the disease, its prevention, and the importance of community health.

Recommendation:

Based on the study findings :

- A similar study may be conducted on a large scale to make a more valid generalization.
- A comparative study may be conducted between urban and rural subjects.

- The study can be conducted with a structured teaching program on the prevention and control of dengue in rural as well as urban settings.
- A similar study may be conducted in high schools to increase the knowledge of students.
- A similar study can be conducted to check the effectiveness of the self-instructional module.

Acknowledgement:

I would like to express my heartfelt appreciation to the officials of Karad, Krishna Vishwa Vidyapeeth (Deemed to be University), and Krishna Institute of Nursing Sciences, Karad. We would like to thank all the study participants for their cooperation and valuable time during the study.

Ethical approval: The study was approved by the Institutional Ethical Committee of Krishna Vishwa Vidyapeeth (Deemed to be University), Karad.

References:

- 1) <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>
- 2) <https://indianexpress.com/article/cities/pune/maharashtra-1755-dengue-cases-may-state-surveillance-monsoon-9386172/>
- 3) Dr. Indira. S, Mrs. B. Vanaja Kumari, Mrs. B. Kalpana “Effectiveness of structured teaching program on the level of knowledge regarding dengue fever among women at selected rural areas, Nellore.”2017 <https://www.bibliomed.org/?mno=278928>
- 4) <https://www.who.int/emergencies/disease-outbreak-news/item/2023-DON498>
- 5) Mahadik Pratik, Nangare Deepali, Patahade Shrikawarv and Sharmila Waghmode A study to assess the knowledge regarding home care about dengue fever among adults residing in selected areas of Pune city January 2018 International Journal of Midwifery and Nursing Practice 1(1):12-15
- 6) DOI:10.33545/26630427.2018.v1.i1a.5
- 7) Mrs. Madhu S1*, Mr. Vinay Kumar G2 A study to assess knowledge about dengue fever among the adults at rural area of Chamarajanagar District <https://ijneronline.com/AbstractView.aspx?PID=2020-8-4-20>
- 8) Renita Priya Dsouza1 Devina E Rodrigues2 Prakash M Saldanha3 Effectiveness of School-Based Video-Assisted Health Education Program on Mosquito-Borne Disease among Upper Primary Children. <https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0042-1749181>
- 9) Rupali Singh1*, Rohit ash Kumar2, Jamal Masood3 Effectiveness of planned teaching program on knowledge regarding dengue fever and its preventive measures among adult population in selected urban slums <https://www.ijcmph.com/index.php/ijcmph/article/view/9084/5648>
- 10) Veena Rajput Assess the effectiveness of the planned teaching program on knowledge regarding dengue fever and its prevention.
- 11) <https://ijanm.com/HTMLPaper.aspx?Journal=International%20Journal%20of%20Advances%20in%20Nursing%20Management;PID=2022-10-4-18>
- 12) Ms. Sangeeta Gajanan Pardeshi1, Mr. Vilas T. Rathod2 A study to assess the effectiveness of structured teaching program on knowledge regarding prevention and control of dengue fever among 4th year BASIC B. Sc. nursing students in selected nursing colleges at Aurangabad.
- 13) <https://www.ijnrd.org/papers/IJNRD2307235.pdf>