Research Article

*J Integral Sci, 2023, Volume 6, Issue 4, 21-24*

**Journal of Integral Sciences (JIS)**

**(An International Open Access Journal)**

Available at www.jisciences.com ISSN: 2581-5679

# A Study on Impact of Factors Influencing Vector Borne Diseases Like Malaria With Respect to Epidemics in Visakahapatnam Andhra Pradesh

Ch. Asha Kiran Raju

Guest Faculty, Department of Social Work, A.U College of Arts and Commerce, Andhra University, Visakhapatnam - 530003, Andhra Pradesh, India

*Received: 15 Oct 2023 Revised: 04 Nov 2023 Accepted: 11 Dec 2023*

**Abstract**

There are five main categories of health determinants, which are the many variables that affect health. This includes the sewage system, water sources, cuisine patterns, housing environment, and medication. The term "broader determinants of health" is used to describe these factors. Although you may not have direct control over all of these variables, they are all a part of the environment where you live, work, and grow up. Secondary data gathered from rural communities serves as the foundation for the research. The data were analyzed using multivariate methods and ANOVA. We identify risk factors, root causes, and problems for people as well as maternal health factors in rural lifestyles and health problems.

***Keywords***: Health Determinants, Rural Communities, Broader Determinants of Health, Maternal Health, Multivariate Analysis, Risk Factors.



***Corresponding Author**

**Dr. Ch. Asha Kiran Raju**

**Produced and Published by**

South Asian Academic Publications

## Introduction

The term "community development" refers to a "process of voluntary cooperation and self-help/mutual aid among residents of a locale aimed at improving physical, social, and economic conditions" [1]. By decentralizing control and management to the local level, a health system that responds to community needs [2]. By emphasizing disease and accident prevention, consumer information, health education, health promotion, and early intervention, the healthcare system's current focus is on treatment [3]. By addressing the needs of women, families, the elderly, low-income individuals, and others with unique health requirements, eliminate health-care disparities [4]. Increase the health-care system's efficiency and effectiveness by integrating institutional, community-based, and preventative programs, as well as by eliminating unnecessary waste and redundancy across the system [5].

## Aim

The current research sought to emphasize the socio-economic shift, as well as lifestyle changes, that are causing significant health issues for the majority of indigenous communities.

## Methodology

Research scientists have compiled numerous studies on the indigenous population of India in this work. By comparing the tribes from different geographical areas and discovering the cause of poverty and malnutrition among them, even after receiving assistance and money from the government and other institutions.

## Results/Findings

Their early occupation of the area gave way to the current one, which threw the tribes' way of life out of balance. Their health may have suffered as a result of the abrupt transition from farming or hunting and collecting to daily wages. The majority of the tribal population had a mean value that was below 18.5

kg/m2, which the WHO deemed to be underweight based on its recommendations.

## Results and Discussion

### Lack of knowledge

The graph is plotted against % of individuals and various camp categories in Figure 01. The majority of the population uses wells for awareness campaigns (40.1%), as shown in this graph, while the second one obtains a large percentage in comparison to awareness campaigns, specifically treatment campaigns (45.45%) and health drives (13.64%). The percentage of people is represented by the color red, while the number of people is represented by the color in this illustration. The cause and justification could be a lack of understanding about mosquito breeding grounds, such as stagnant water and filthy surroundings, as well as a delayed identification of symptoms like fever, chills, and vomiting. The issue may be exacerbated by not receiving prompt medical attention. low usage of preventive measures like repellents, mosquito nets, and protective equipment. myths and misinformation about the disease and its transmission. [6].

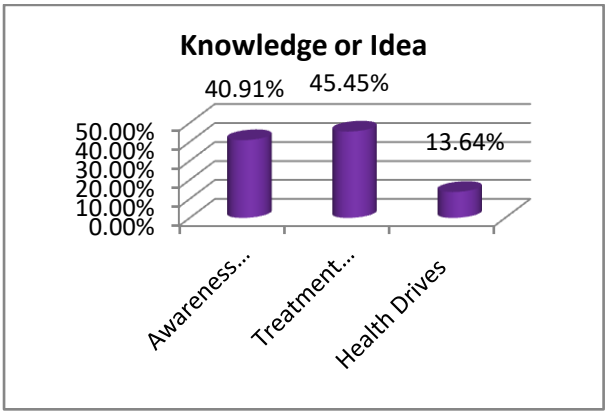


Fig. 01 Lack of knowledge

### Types of Education

The number of people and the proportion of people are plotted against the kind of education they received in Figure 02. According to this graph, a larger proportion of individuals in primary school (54.67%) use it than those in high school (37.33%) or college (8.00%). In this diagram, the proportion of people's educational attainment is represented by color. The reason and justification could be that people lacking fundamental education are unable to identify early indicators (fever, chills, headache) or seek prompt medical attention. They could stop antimalarial medications too soon, self-medicate without a prescription [7], and prefer traditional medicine or home treatments, which raises the possibility of serious consequences or death.

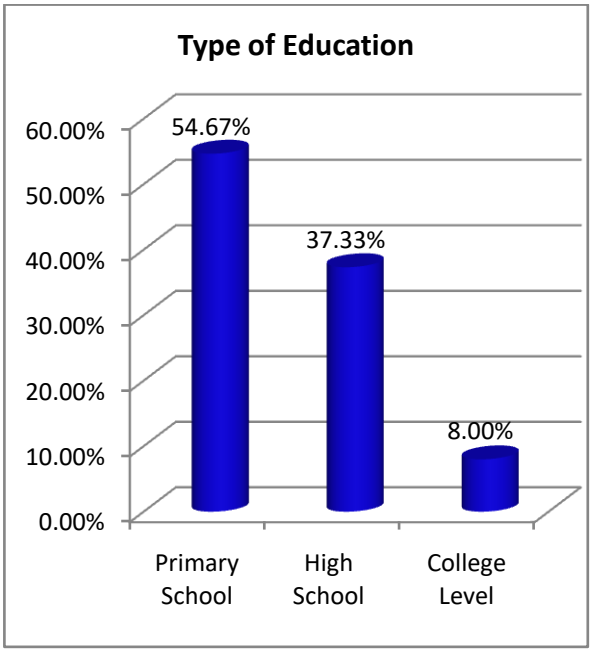


Fig. 02 Types of Education

### Type of Residence

The graph in Figure 03 shows the number of people and the proportion of people plotted against the kind of home. As seen in this figure, a higher proportion of people maintain pucca house surroundings (64.58%) than rented dwellings (4.17%) or hut houses (31.25%). The percentage of people is represented by red color, and the number of people is represented by blue color in this figure. Due to the perfect mosquito breeding environment, residences close to rice fields, marshes, lakes, ponds, or sluggish water may be more vulnerable. Additionally, regions that are prone to floods might provide more breeding sites for Anopheles mosquitoes [8].

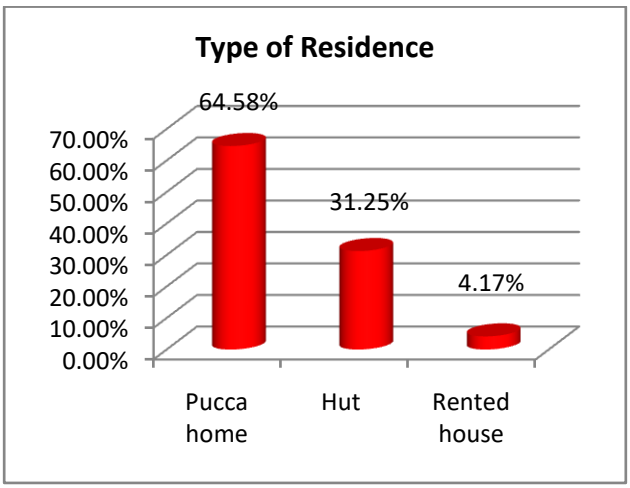


Fig. 03 house surroundings

### Preventive Measures Systems

The number of people and the percentage of people are plotted against the Type of preventive measure systems in Figure 04. The majority of people use the larval control system, which, as seen in this graph, has a far higher proportion (58.82%) than early detection (33.33%) and community mobilization (7.84%). Color represents the number of individuals in this fig. The reason and justification could be the introduction of vaccinations (where applicable), such as RTS, S/AS01 (Mosquirix), which is the first licensed malaria vaccine for youngsters in high-risk regions. Examples of environmental management include removing mosquito breeding places (gutters, ponds, containers, etc.). Larviciding involves employing biological (e.g., Bacillus thuringiensis) or chemical means to kill larvae in water. [9]

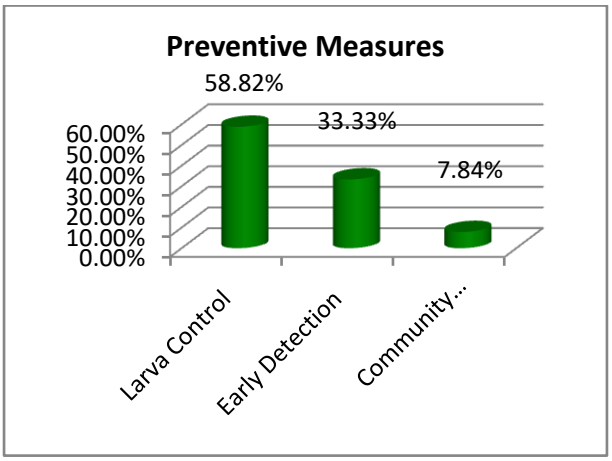


Fig. 04 Preventive Measure Systems Types

### Treatment Center types

The number of people and the percentage of people are represented in Figure 05 by the plot against the treatment facilities. The majority of respondents have utilized the Primary Health Centers (PHCs), according to the graph, which also shows that it has a higher percentage (61.11%) than private clinics (5.56%) and government hospitals (33.33%). The percentage of people is represented by the color red, and the number of people is represented by the color blue in this fig. The rationale may be that in rural and semi-urban regions, first-level public health units employ rapid diagnostic tests (RDTs) or microscopy for diagnosis. Follow national recommendations for providing antimalarial therapy (e.g., ACTs – Artemisinin-based Combination Therapies) [10-12].

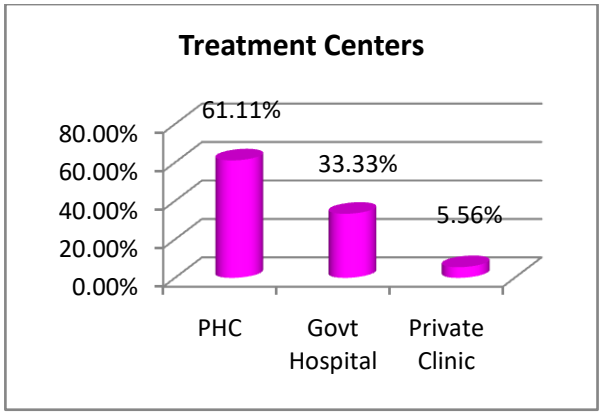


Fig. 05 Medication center types

Table 01 ANOVA single factors

**ANOVA: Single Factor**

**SUMMARY**

| *Groups* | *Count* | *Sum* | *Average* | *Variance* |
|---|---|---|---|---|
| Lack of knowledge | 30 | 44 | 1.466667 | 0.395402 |
| Education type | 30 | 75 | 2.5 | 0.465517 |
| Residence type | 30 | 48 | 1.6 | 0.662069 |
| Preventive measures | 30 | 51 | 1.7 | 0.424138 |
| Treatment center | 30 | 54 | 1.8 | 0.57931 |

ANOVA

| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|
| Between Groups | 19.50667 | 4 | 4.876667 | 9.651274 | 6E-07 | 2.434065 |
| Within Groups | 73.26667 | 145 | 0.505287 | | | |
| Total | 92.77333 | 149 | | | | |

The ANOVA table has a formal F test for the single-factor effect. Analysis of variance, or ANOVA, is a statistical method for comparing the means of two or more sets of data. The probability of obtaining an F statistic of 2.434065 or greater is 6E-07 when the p-value is accurate.

### Conclusion

According to the current study, it is necessary to identify, reorganize, and reallocate resources for rural

communities according to their needs. The health needs of the populace, as well as the planning of development projects. The health determinants, which are often divided into five categories, are the numerous variables that affect health. These include the sewage system, food practices, water sources, housing environment, and medication. The larger factors that influence health are sometimes known as these. The current study confirms that, despite several interventions, malnutrition continues to be widespread among those who live in largely rural communities close to the Visakhapatnam district in Andhra Pradesh, India.

**Acknowledgements and Funding**

The author is thankful to the Department of Social Work, Andhra University for providing all the facilities and also expresses deep sense of gratitude to ICSSR PDF fellowship for carrying out this research work with full financial support.

**References**

1. Dewan AM, Corner R, Hashizume M, Ongee ET. Typhoid fever and its association with environmental factors in the Dhaka metropolitan area of Bangladesh: a spatial and time-series approach. PLoS neglected tropical diseases. 2013 Jan 24;7(1):e1998.
2. Manetu WM, Karanja AM. Waterborne disease risk factors and intervention practices: a review. Open Access Library Journal. 2021 May 6;8(5):1-1.
3. Corner RJ, Dewan AM, Hashizume M. Modelling typhoid risk in Dhaka Metropolitan Area of Bangladesh: the role of socio-economic and environmental factors. International journal of health geographics. 2013 Dec;12:1-5.
4. Mogasale VV, Ramani E, Mogasale V, Park JY, Wierzba TF. Estimating typhoid fever risk associated with lack of access to safe water: a systematic literature review. Journal of environmental and public health. 2018;2018(1):9589208.
5. Theron J, Cloete TE. Emerging waterborne infections: contributing factors, agents, and detection tools. Critical Reviews in Microbiology. 2002 Jan 1;28(1):1-26.
6. Levy K, Woster AP, Goldstein RS, Carlton EJ. Untangling the impacts of climate change on waterborne diseases: a systematic review of relationships between diarrheal diseases and temperature, rainfall, flooding, and drought. Environmental science & technology. 2016 May 17;50(10):4905-22.
7. Brockett S, Wolfe MK, Hamot A, Appiah GD, Mintz ED, Lantagne D. Associations among water, sanitation, and hygiene, and food exposures and typhoid fever in Case–Control studies: a systematic review and meta-analysis. The American journal of tropical medicine and hygiene. 2020 Jul 20;103(3):1020.
8. Nichols G, Lake I, Heaviside C. Climate change and water-related infectious diseases. Atmosphere. 2018 Oct 2;9(10):385.
9. Cissé G. Food-borne and water-borne diseases under climate change in low-and middle-income countries: Further efforts needed for reducing environmental health exposure risks. Acta tropica. 2019 Jun 1;194:181-8.
10. Cvjetanović B, Grab B, Uemura K. Epidemiological model of typhoid fever and its use in the planning and evaluation of antityphoid immunization and sanitation programmes. Bulletin of the World Health Organization. 1971;45(1):53.
11. Forstinus NO, Ikechukwu NE, Emenike MP, Christiana AO. Water and waterborne diseases: A review. International Journal of Tropical Diseases and Health. 2016 Jan 10;12(4):1-4.
12. Guzman Herrador BR, De Blasio BF, MacDonald E, Nichols G, Sudre B, Vold L, Semenza JC, Nygård K. Analytical studies assessing the association between extreme precipitation or temperature and drinking water-related waterborne infections: a review. Environmental Health. 2015 Dec;14:1-2.