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A Study to Assess the Knowledge Regarding Chandipura Virus Among Mothers in Selected Area.

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Abstract

Background: *Chandipura virus (CHPV) is a rapidly emerging arboviral infection predominantly affecting children in India, particularly those under five years of age. The virus, transmitted mainly by sandflies, is neurotropic in nature and causes acute encephalitis syndrome (AES), with high fatality rates. Despite its severity, awareness about CHPV remains extremely low, especially in rural areas. Mothers, as primary caregivers, play a crucial role in early disease recognition and prevention, making their knowledge vital for timely intervention and control of the infection.*

Objectives:

1. *To assess the knowledge of Chandipura virus among mothers of under-5-year-old children.*
2. *To determine the association of knowledge levels with selected socio-demographic variables.*

Methodology: A descriptive cross-sectional design was used to assess knowledge regarding Chandipura virus among 60 mothers of under-five children in Waghodia, Vadodara. Data were collected using a structured questionnaire.

Results: Among 60 mothers, 20% had good knowledge, 56.7% had average knowledge, and 23.3% had poor knowledge. A significant association was found between education level and knowledge ($\chi^2 = 13.55$, $p = 0.003$).

Conclusion: *The findings of this study reveal a significant knowledge gap among mothers regarding the Chandipura virus. Only 20% of participants demonstrated good knowledge, while the majority had average or poor understanding. Education was found to have a statistically significant association with knowledge levels, indicating that more educated mothers had better awareness. These results highlight the urgent need for health education initiatives focusing on Chandipura virus awareness. Implementing community-based education through healthcare workers and local outreach programs can empower mothers to recognize symptoms early and take preventive action, thereby reducing child mortality and morbidity with CHPV.*

Keywords: *Chandipura virus, maternal knowledge, encephalitis, under-five children, rural health, sandfly, vector-borne disease, health education, AES, neurotropic virus.*

INTRODUCTION

Emerging viral infections pose a continuous threat to global public health, particularly in tropical and subtropical regions where climate, vector distribution, and human activities create favorable conditions for outbreaks. Among these emerging pathogens, Chandipura virus (CHPV), an arbovirus belonging to the family Rhabdoviridae and genus Vesiculovirus, has garnered attention due to its association with acute encephalitic illness, particularly among children in India and neighboring regions.

First isolated in 1965 from the blood of two patients during an outbreak of febrile illness in Chandipura village near Nagpur, Maharashtra, India, CHPV remained relatively obscure until the early 2000s when it reemerged in several deadly outbreaks of encephalitis (Bhatt & Rodrigues, 1967). The virus primarily affects children under 15 years of age, presenting with a rapidly progressive illness characterized by sudden onset of fever, vomiting, altered sensorium, seizures, and, often, death within hours to days of symptom onset. High case fatality rates, ranging from 55% to as high as 75% in some outbreaks, highlight the severity of CHPV infections (Rao et al., 2004).

Chandipura virus is primarily transmitted by hematophagous sandflies (Phlebotomus spp.) and possibly

by other vectors like mosquitoes and ticks under specific ecological conditions. Its detection in sandflies indicates a strong vectorial linkage and a need to monitor vector behavior and density as a crucial step in outbreak prediction and prevention (Geevarghese et al., 2005). Additionally, the detection of CHPV RNA in vector species outside the originally affected regions points toward a wider geographic distribution and raises concerns about the potential for future epidemics, particularly under changing climatic and ecological conditions that favor vector expansion.

The pathogenesis of CHPV remains an area of active investigation. Following infection, the virus displays rapid neurotropism, leading to severe brain inflammation and neuronal apoptosis. Experimental studies in animal models have revealed that CHPV infects the central nervous system directly without significant peripheral replication, contributing to the rapid onset of encephalitic symptoms (Alam et al., 2016). Unlike other members of the Vesiculovirus genus, CHPV has demonstrated a uniquely high virulence in mammalian hosts, an attribute that necessitates closer scrutiny into its molecular biology, especially regarding its mechanisms of neuroinvasion and immune evasion.

METHEDOLOGY

Research variables: Knowledge Regarding Chandipura virus Among Mothers of Under Five children in selected area. Demographic variables: age, sex, residency, gender, family type. Research Settings: in the study setting is the location in which the research is conduct it could be natural, partially control, or highly control. It is the place where the data are collected. This study was conduct at limda of Vadodara. Quantitative design: Cross-sectional descriptive research design. Variable: the research variables are factors that can be manipulated and measured. Research Variables: Knowledge regarding chandipura virus among mother of under five children selected area. Sample: mother of under five children in the selected rural area who fulfilled the inclusive criteria. Sample size:
60. Sample technique: structured questionnaire. Population: the target population for this study consisted of mother under five children in the selected area. Sample & sample technique: the sample is a portion of the population that has been selected to represent study the sample of the present consist of 60.

RESULTS

The findings of this descriptive study, which aimed to assess the knowledge regarding Chandipura virus among mothers of under-five children in a selected rural area of Waghodia, revealed considerable variation in awareness levels. The structured questionnaire used in the survey assessed various aspects of knowledge, including the nature of the virus, its mode of transmission, symptoms, risk factors, prevention strategies, and complications.

Out of the total 60 mothers who participated in the study, only 12 mothers, accounting for 20%, demonstrated a good level of knowledge about Chandipura virus. These participants were able to correctly identify key features of the virus, including its association with acute encephalitis syndrome (AES), the role of sandflies as vectors, and the importance of early symptom recognition and seeking timely medical care. These mothers were mostly those with higher educational attainment, which appeared to positively influence their health literacy.

Most of the mothers, 34 participants or 56.7%, exhibited an average level of knowledge. While these mothers were aware of some general information, such as the fact that Chandipura virus is an infectious disease and that it affects children, they lacked comprehensive understanding about the transmission vector, specific symptoms, complications, and effective prevention methods. Their responses were often vague or incorrect when asked about the role of immunization or public health measures.

The remaining 14 mothers, constituting 23.3% of the sample, had poor knowledge regarding the Chandipura virus. These participants were largely unaware of the virus and its health implications. Many of them had never heard of the virus, and they were unfamiliar with any specific signs, symptoms, or preventive actions. This lack of awareness places their children at heightened risk, especially during outbreak periods when early identification of symptoms can be critical for survival.

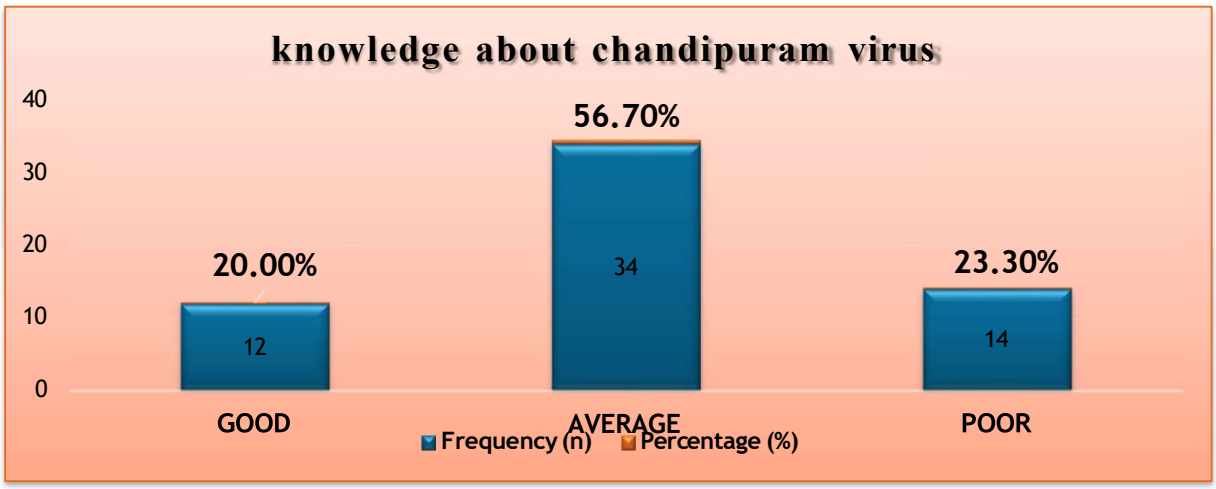
A statistical analysis using the Chi-square test was conducted to examine the association between selected socio- demographic variables and the level of knowledge among the mothers. The analysis revealed a statistically significant relationship between the mothers' level of education and their knowledge regarding Chandipura virus ($\chi^2 = 13.55$, $p = 0.003$). This indicates that mothers with higher educational qualifications had significantly better awareness and understanding of the disease as compared to those

with lower or no formal education. Other demographic factors such as age, family type, and residency showed no statistically significant association with knowledge levels in this sample.

These findings underscore the urgent need to focus public health interventions on improving maternal knowledge through targeted educational initiatives. Enhancing health literacy, especially among less educated and rural mothers, can play a critical role in preventing the spread and fatal outcomes associated with Chandipura virus infections.

Data presented in the Table and Figure shows that level of knowledge regarding chandipura virus among good, average & poor that mother 12 (20.0%) had good category, 34(56.7%) had average category and 14(23.3%) had poor category.

KNOWLEDGE LEVEL		Frequency	Percent
FREQUENCY & PERCENTAGE	GOOD	12	20.0%
	AVERAGE	34	56.7%
	POOR	14	23.3%



A **statistically significant association** was found between **education level** and knowledge regarding the Chandipura virus ($\chi^2 = 13.55$, $p = 0.003$). This indicates that mothers with higher education levels tended to have better knowledge.

DISCUSSION

The present study highlights a significant gap in maternal knowledge regarding the Chandipura virus, a highly neurotropic and deadly arbovirus linked to acute encephalitis syndrome (AES) in children, particularly in rural parts of India. This virus, despite its high fatality rate and rapid onset of symptoms, remains poorly understood by the general population. Among the 60 mothers surveyed in the rural area of Waghodia, only 20% demonstrated good knowledge, while the majority exhibited average (56.7%) or poor (23.3%) awareness. These results are consistent with previous studies that underscore limited public awareness and inadequate dissemination of information about emerging vector-borne diseases.

A key finding of this study was the statistically significant association between the mothers' educational level and their knowledge of Chandipura virus. This suggests that education plays a pivotal role in shaping health-related knowledge and practices. Mothers with higher levels of education were more capable of identifying symptoms, understanding the mode of transmission, and adopting preventive measures. This aligns with the broader literature on health literacy, which consistently links educational attainment with improved health-seeking behaviors and reduced disease burden.

The poor knowledge observed in a substantial portion of the participants underscores the urgent need for targeted health education interventions. Community-level programs led by Accredited Social Health Activists (ASHAs), Auxiliary Nurse Midwives (ANMs), and primary healthcare workers could significantly enhance awareness about CHPV. These interventions should focus on the nature of the virus, its vector (sandflies), preventive strategies such as vector control, early symptom recognition, and the importance of seeking prompt medical care.

Furthermore, mass media platforms such as community radio, public service announcements, posters in local dialects, and school-based campaigns can serve as effective tools for educating mothers, especially in hard-to- reach rural areas. Collaborations between local health departments and non-governmental organizations can further strengthen outreach efforts, especially during the pre-monsoon and monsoon seasons when the risk of outbreaks increases due to favorable conditions for vector breeding.

Given that Chandipura virus currently has no specific antiviral treatment or vaccine, prevention through public awareness and environmental control remains the most effective approach. The findings of this study emphasize that improving maternal knowledge can play a crucial role in early disease detection and in reducing both the morbidity and mortality associated with CHPV infections among children.

CONCLUSION

In conclusion, addressing the knowledge deficit regarding Chandipura virus through structured community education and public health initiatives is essential. Future research should explore the effectiveness of specific educational interventions and evaluate long-term changes in community awareness and child health outcomes. Strengthening the health system's capacity to communicate risk, especially in rural and underserved areas, is key to mitigating the impact of emerging infectious diseases like the Chandipura virus.

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