International Journal of Community Medicine and Public Health
Kardalkar S et al. Int J Community Med Public Health. 2023 Feb;10(2):691-695
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20230223

Original Research Article

Knowledge, attitude and practices about Nipah virus infection among people visiting urban and rural health training centres

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Received: 16 November 2022
Revised: 12 January 2023
Accepted: 13 January 2023

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ABSTRACT

Background: Nipah virus infection is an emerging infectious disease of south-east Asia region, which has gained public health importance. Nipah virus is classified internationally as a biosecurity level (BSL) 4 agent. Objective was to assess knowledge, practice and attitude regarding Nipah virus infection.
Methods: A cross sectional study was done in urban and rural health training centers among adult population, data was collected using pre-designed and pre-tested proforma. Data was entered in Microsoft excel, frequencies and percentages were calculated.
Results: In present study majority of study participants belonged to less than 25 years. Nuclear families were common in both urban (76%) and rural (44%) areas. 41% and 35% of urban and rural study participants belonged to class II status respectively. In present study it was found that both urban and rural study participants had heard about Nipah virus infection in recent few months. 73% of urban study participants considered themselves at risk of Nipah virus infection when compared to 36% of rural participants. Rural study participants did not have clarity of spread, signs and symptoms. 11% and 6% of urban and rural study participants had heard health education talks about Nipah virus infection respectively and most common source was social media.
Conclusions: The present study finding is suggestive of good knowledge regarding Nipah virus infection among urban population when compared to rural setting. Continuous health education has to be imparted at all levels of health care so as to make community aware about spread, clinical presentation and prevention aspects of Nipah virus infection.

Keywords: Adult, Nipah virus, Public health, Rural, Urban

INTRODUCTION

Nipah virus infection is an emerging infectious disease of south-east Asia region, which has gained public health importance. Nipah virus is classified internationally as a biosecurity level (BSL) 4 agent. The Nipah virus along with Hendra virus comprises a new genus called as henipavirus in the subfamily Paramyxovirinae.[1] Pteropus bats (fruit eating species, which are commonly called as flying foxes) are considered as the natural hosts of the virus.[2] The name originates from Malaysian village of Kampung Sungai Nipah in Malaysia where it was first discovered. Zoonotic pathogens have created a considerable stress and anxiety in a broad range of societies globally in the recent years.[3]

The Nipah virus infection spreads by direct contact with infected pigs, consumption of raw sap, bats which shed the virus in secretions act as symptomless carriers.[4,5]

In the most recent outbreak in Kerala, 2018, the case fatality rate was 86%. The Indian Council of Medical Research (ICMR) confirmed on 3 July, that fruit bats were the primary source of the Nipah virus outbreak in Kerala's Kozhikode and Malappuram districts, where 17 people died due to the virus earlier in 2018, where acute respiratory distress syndrome and encephalitis were reported.[6,7] The case fatality rate in 2001 Siliguri was 68% and 100% in 2007, in Nadia outbreak. Nipah virus infection has infected 477 people and killed 252 since 1998. The infection has seasonal and geographical pattern variations. The case fatality rate is 40-70% and sometimes as high as 100% in some outbreaks, which shows the fatality of the infection.[1]

Direct contact with pigs was the major mode of transmission in humans during 1999 in Malaysia wherein pig farmers had contacted the infection. In India and Bangladesh, during 2001 there were focal outbreaks of Nipah virus infection due to drinking of fresh date palm sap which was contaminated by fruit bats. Human to human transmission occurred in 2001, in Siliguri wherein 33 health workers and hospital visitors became ill after being exposed to patients who had Nipah virus infection, suggesting nosocomial infection, emphasizing the importance of precautionary measures.[1]

Nipah virus infection presents as symptoms similar to influenza like illness such as fever, headache, drowsiness and muscle pain. Disorientation and coma occur due to inflammation of the brain. Late onset encephalitis may develop. The diagnosis is done mainly by serology, histopathology, and PCR and virus isolation. Serum neutralization test, ELISA, RT-PCR are used for laboratory confirmation. There is no treatment or vaccine available for either humans or animals. Supportive care is the primary treatment.[1,6] The recent Nipah virus outbreak in Kerala, India is suggestive of emergence of zoonotic infections. Hence this study was conducted with an objective of assessing knowledge, practice and attitude regarding Nipah virus infection.

METHODS

Study design and setting

This study was a community based, cross-sectional study, which was carried out for a period of three months in 2018.

The study was conducted among the adults visiting the Urban and Rural Health Training Centre attached to a tertiary care hospital, in Karnataka.

Sampling method and procedure

The overall sample size was taken as 200, convenient sampling was done taking 100 participants each from urban and rural health training centers.

Inclusion and exclusion criteria

Adults attending urban and rural health training were included in the study after taking an informed verbal consent. People who did not wish to participate in the study on voluntary basis were excluded from the study.

Data collection and statistical analysis

Data was collected by interns using a pre-designed and pre-tested semi structured proforma. The questionnaire was divided into two parts where first part included which included socio-demographic profile, monthly income and socioeconomic status. The second part was to assess knowledge, attitude and practices about Nipah virus infection. The questionnaire used in the study was translated to vernacular language and validated by the investigators. Data was collected after taking an informed verbal consent on voluntary basis and confidentiality was assured. Data was entered in excel sheet and analysed in SPSS v22. Descriptive statistics like mean, frequency were used in the study.

RESULTS

A total of 200 study participants were involved in the study 100 each from urban and rural areas. In the present study majority of the study participants belonged to less than 25 years of age. The mean age in urban was 30.13 years and in rural participants it was 39.95 years. In urban population, 39% of the urban study participants had completed graduation, whereas in rural population maximum of them had completed primary education (27%). Nuclear families were common in both urban (76%) and rural (44%) areas. 44% of the urban study participants were students and 52% of the rural people practiced agriculture as the occupation. Among the socioeconomic status, 41% and 35% of urban and rural study participants belonged to class II status respectively.

Urban study participants knew it had occurred in Kerala whereas rural participants opined as Andhra Pradesh, Karnataka, Kerala. Media was the most common source of information in both urban and rural population (78%). 48% of the urban population quoted reason as infected bats whereas 40% of rural population stated as infected bats, infected pigs and partially eaten fruits. Central nervous system and respiratory symptoms were affected in Nipah virus infection according to 34% of the urban study participants whereas a majority of 74% rural study participants did not know about the systems involved. Rural study participants did not have clarity of the spread, signs and symptoms of the infection. 11% and 6% of urban and rural study participants had heard health education talks about Nipah virus infection respectively and the most common source was social media followed by television.

Table 1: Sociodemographic characteristics of the study participants.

Parameters	Urban health centre (n=100)	Rural health centre (n=100)
Age (in years)		
≤25	48	25
26-35	27	24
36-45	14	14
46-55	06	21
56-65	03	13
>65	02	03
Gender		
Males	63	64
Females	37	36
Religion		
Hindu	74	70
Muslim	25	28
Others	01	02
Education		
Illiterate	01	20
Primary	08	27
High school	15	18
Secondary	33	26
Graduate	39	09
Post graduate	04	00
Occupation		
Agriculture	04	52
Labourer	04	10
Home maker	15	12
Business	14	01
Employee	19	13
Student	44	12
Type of family		
Nuclear	76	44
Joint	16	32
Three generation	08	24
Socioeconomic status		
Upper class I	11	09
Upper middle class II	41	35
Middle class III	26	16
Lower middle class IV	12	23
Lower class V	10	17

*B.G. Prasad classification 2017[8].

Table 2: KAP on Nipah virus infection.

Questions on KAP	Urban (n=100)	Rural (n=100)
1. When did you first hear about Nipah virus?		
Few years ago	4	1
Last few months	96	99
2. Do you know in which state the infection has occurred in India?		
Yes	74	32
No	26	68
3. Where did you hear about the Nipah virus?		
Media	79	78
Family and friends	12	18
Doctors	9	04

Continued.

Questions on KAP	Urban (n=100)	Rural (n=100)
4. What causes the infection?		
Infected bats	44	38
Infected pigs	2	02
Partially eaten fruits	22	20
All	32	40
5. What are the signs and symptoms of the infection?		
Respiratory	25	18
CNS	7	02
Both	34	06
Don't know	34	74
6. Can you prevent Nipah virus infection?		
Yes	80	58
No	24	42
7. Do you think Nipah virus infection is an important issue?		
Yes	84	71
No	16	29
8. Do you think Nipah virus infection can be fatal?		
Yes	79	86
No	21	14
9. Do you think you are at risk of Nipah virus infection?		
Yes	73	36
No	27	54
10. Do you think Nipah virus infection can be affectively treated?		
Yes	64	83
No	36	17
11. Are you confused about Nipah virus in total?		
Yes	46	74
No	54	26
12. Should an infected person be isolated from the family?		
Yes	50	60
No	50	40
13. Since you have heard about the Nipah virus infection, have you taken any measures to prevent it?		
Yes	34	20
No	66	80
14. Have you heard/attended any of the health education talks related to Nipah virus infection?		
Yes	11	06
No	89	94
15. If yes for the above question, mention the source of health education	Social media, TV	TV

DISCUSSION

There are very handful studies which have evaluated the knowledge, attitude and practice regarding Nipah virus among general population. Previous studies have been mainly done under health care professionals, medical and nursing students. In the present study mean age was 35.04 years, 27% had completed primary education whereas in a study done by Nahar et al, in 2015, Bangladesh, the mean age of the respondents was 40 years and 42% had completed primary school education, which shows that our study participants were lacking in primary education which would have impacted on the knowledge of Nipah.[9]

In the present study, it was found that both urban and rural maximum number of study participants had heard about Nipah virus infection in the recent few months. It was a new talk among all the people in the vicinity and hence there was more news about Nipah virus. The reason being probably technology and social media which is easily accessible providing information in just a click away whereas in a study done by Nahar et al, in 2015, Bangladesh, only 5% of respondents had heard of a disease named "Nipah".[9] More than one third (37%) of respondents reported hearing about a disease that resulted from raw sap consumption, 17% of respondents heard about a disease transmitted from bats to people, this finding was in similarity to the present study where 48% of the urban population quoted reason as infected bats

whereas 40% of rural population stated as infected bats, infected pigs and partially eaten fruits. This shows that the study participants had authentic information regarding the spread of the disease.

In the present study, there was no clarity regarding the signs and symptoms of the disease, probably because there was no case recorded at the place if study. Maximum number of study participants in our study did not take any measures to prevent the disease and the reason being that there were no cases reported and the participants considered it would not spread to their vicinity because there were no bats in those areas.

Also, in the present study, less than 10%of the study participants had attended any talks relating to Nipah virus as there was not a single case also, they never considered it was necessary to learn about the infection.

Nevertheless, few limitations were acclaimed in our study. Basically, the findings are elicited from a self-reported questionnaire and not on observations; hence, some bias in the results cannot be excluded. Furthermore, the study was conducted with a comparatively small sample size. But despite the drawbacks, the present study has compiled authentic information relating to Nipah virus infection knowledge, attitude and practice among adults.

CONCLUSION

The present study finding is suggestive of good knowledge regarding Nipah virus infection among urban population when compared to rural setting. Both urban and rural study participants were lacking in practices regarding Nipah virus infection. Continuous health education has to be imparted at all levels of health care so as to make the community aware about the spread, clinical presentation and prevention aspects of Nipah virus infection.

ACKNOWLEDGEMENTS

We thank all the study participants for their valuable inputs.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Kardalkar S, Hiremath BR, Swetha K. Knowledge, attitude and practices about Nipah virus infection among people visiting urban and rural health training centres. Int J Community Med Public Health 2023;10:691-5.