

Psychosocial Perspective of Nipah Virus Outbreak in Kerala, India

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Abstract

Nipah Virus (NiV) is a biological disaster and zoonotic pathogen which can be transmitted from animal to human beings. The NiV was first identified in Malaysia in 1998. In India it was traced at Siliguri in 2001, followed by second outbreak in Nadia district of West Bengal in 2007 and the present outbreak consumed more than 17 lives and affected many in Kerala, a southern Indian state which is globally known as “God’s own country”. The “all-time alert care” provided by the Kerala State Health Department have earned applause for early detection of Nipah outbreak. The prompt action ensured containing the spread of Nipah outbreak and halting a major catastrophe, in spite of the best efforts the anxiety and panic was commonly reported among the communities. The current review is to explore the psychosocial perspectives of NiV and its impact in Kerala. Studies on NiV were collected from different online search engines, journals and newspapers. The review points out that there is a need to address psychosocial aspects of NiV along with pharmacological intervention to reduce vulnerability by enhancing better coping and resilience of individual, family and community.

Key words: Biological Disaster, Nipah virus, Outbreak, Psychosocial

INTRODUCTION

Nipah virus (NiV) encephalitis is an emerging communicable disease which had history of sporadic outbreaks in South East Asian countries. The nature and impact of virus will be categorized under biological disaster and infectious disease of public health importance across the world. NiV is a formerly unfamiliar virus of the Paramyxoviridae family which causes illness and death in humans and animals. In the year 1998, there were news of the NiV outbreak in Malaysia where pigs were identified as the intermediate hosts as no other intermediate hosts were found. In the year 2004, there was another report in Bangladesh of NiV infection, where many locals who consumed date palm sap contaminated by infected fruit bats. Further, as

per the WHO report, human-to-human transmission in a hospital setting in India was also documented.^[1] NiV illness presents with 3-14 days of fever, head ache, drowsiness, disorientation, mental confusion, respiratory illness, neurological signs, pulmonary signs and can progress coma within 24–48 h.^[2] Table 1 depicts the number of death occurred due to NiV.^[3,1]

NiV is an emerging disease which has high fatality rate, >70% across the globe.^[4] The outbreak of NiV was limited to a geographical range and follows a strong seasonal pattern which has occurred during winter and spring (December–May). This could be associated with several factors such as the breeding season of the bats, increased shedding of virus by the bats, and the date palm sap harvesting season. NiV infection was first recognized in a large outbreak of suspected cases in peninsular Malaysia during September 1998–April 1999. Most patients had contact with sick pigs or had been in close physical contact with NiV-infected patients and the initial diagnosis made was Japanese encephalitis and later identified as NiV encephalitis.^[1] The most commonly reported psychosocial reactions were panic, fear, social disruptions, and economic

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Table 1: Mortality rate of NiV

Place of occurrence	Month and year	Cases identified	Number of death
Malaysia and Singapore	September 1998–April 1999	276	206
Bangladesh	April 2001–February 2015	261	208
India	February 2001–May 2018	89	67

NiV: Nipah virus

loss across the region. In Bangladesh, the first identification of NiV reported in 2001 in Meherpur District. Almost every year the NiV reported in different district from 2003 to 2012.^[3]

Similarly, in India also, virus spread was recorded in humans without any involvement of pigs. The early recorded outbreaks were in Siliguri (2001) and Nadia (2007) in West Bengal^[5] and currently in Kerala (2018) resulting in death and affecting hundreds resulting in widespread panic and closure of business and educational establishments.

METHODOLOGY

Extensive search was done from following databases, PubMed, ScienceDirect, Google Scholar, Cochrane library, WHO reports, and PsychINFO. The search terms included “NiV,” “history of NiV,” “current scenario in Kerala,” and “psychosocial care on NiV.” Around 10 articles retrieved for finding various aspects of NiV from 1999 to 2018. An attempt was made to review the available resources to ascertain the mention objectives.

A study on antibodies to Nipah-like virus in bats (*Pteropus lylei*) in Cambodia identified antibodies cross-reactive to NiV by enzyme immunoassay in 11 of 96 Lyle’s flying foxes.^[6] The findings of the study on fatal encephalitis due to NiV among pig farmers in Malaysia showed that three pig farmers presented with fever, headache, and myoclonus were identified in two patients. After 5 days, the virus caused syncytial formation of Vero cells. The virus stained positively with antibodies against Hendra virus.^[7] Another study found that NiV represents from the family Paramyxovirus and Hendra virus also from the same family.^[8] In a similar study, 324 bats from 14 species on peninsular Malaysia suggested widespread infection in bat populations.^[9]

NiV was transmitted from fruit bats (*Pteropus giganteus*) to person through drinking fresh date palm sap,^[10] the same was suspected in the recent outbreak. A case control study was conducted to identify the risk factors for human infection of Nipah Virus during the outbreak of encephalitis in Malaysia revealed that out of 265 patients the primary source of human Nipah infection was due to direct and close contact with pigs.^[11] Majority of the patients were

farmers and 8% of cases reported of no contact with pigs. The study found that close contact with pigs was the primary source of human Nipah infection. However, the studies were primarily focused on the public health mitigation and prevention focusing on pharmacological aspects of NiV; interestingly, the psychosocial care interventions were not focused or mentioned in the response. Therefore, under such scenario, there is a need to incorporate the psychosocial care in deadly outbreak like NiV is imperative.

NiV - THE KERALA SCENARIO

The situation in the state of Kerala was different when compared to the global scenario. One of the striking differences was the rapid spread of the NiV coupled with equally alarming speed of spread of rumors, misinformation, and fake news about the mystery disease, which was 1st time heard in this part of the land. The outbreak was reported in South India from Kozhikode district of Kerala, on May 19, 2018. As per the report till June 01, 2018, 17 deaths and 18 confirmed cases have been reported.^[1] All efforts of Kerala’s health-care system were made to ensure that no more lives are lost. The government was prompt in handling the outbreak with utmost seriousness. The efficient action of the state was well appreciated. In spite of that, the professionals, community, and the government faced an unexpected challenge in the form of rumors which spiraled into a mass anxiety that crossed beyond the affected district to the entire state and even reached the neighboring states which had the potential to affect daily lives of the millions.

Social media plays a very important role in disseminating information about the emergencies like epidemic outbreaks whereas false news also spread through resulting in mass panic and anxiety of the people. The role of social media in creating false information on the fatality rate created panic among the population such as the reports like “60% of chickens from Tamil Nadu are carriers of the virus,” “NiV will spread to Goa in a week’s time and to Mumbai in 8 days’ time,” “People should not come in contact with those who return from Kozhikode in Kerala,” “Fruit bats are not the carriers of NiV and that the real reason for the spread of the virus is migrant workers,” and “Pesticides sprayed on food items could be the reason.”^[12] This misinformation can affect the emotional well-being of the people in the affected area.

The most affected were the common citizens of Kerala, interestingly people from faraway places also felt the impact. The “God’s own country” saw scores of tourists panicking to get out of the state resulting in equally anxious reactions in their home state. The inbound tourist session saw bulk cancellation ensuing enormous loss and hardship. The outbreak also resulted in business continuity as many countries banned the export of vegetables from Kerala, in turn, creating a ripple effect of even local population boycotting or refusing to buy the products resulting in huge monetary loss to the manufacturers. The people’s behavior saw a drastic change where the common food items such as meat and fruits were not consumed. The effect was felt on the education, where most of the competitive examinations had to be postponed, thus creating confusion and uncertainty among the students and parents. Finally, the flooding of news about traditional methods and fake spiritual therapies of cure for the outbreak made the population flocking to the quacks for an easy cure and prevention.

PSYCHOSOCIAL IMPACT OF NIV

The review of articles revealed that Nipah had widespread impact on human population not only biologically as well as psychosocially. Its rapid onset created panic situations among the population. Our search revealed that there is no literature found on psychosocial impact on Nipah, the authors collected and collated various reactions reported in newspapers, publications and reports during Nipah outbreak in Kerala.

Table 2 depicts the psychosocial impacts under three levels such as individual, familial, and community/ state level at large.

Although the outbreak overtly focused on the public health mitigation and prevention aspects, the above-mentioned psychosocial reactions warrant a multifaceted approach to address the psychosocial consequences of this epidemic at individual, family, and community/state levels. It is important to understand that any illness can bring physical, psychological, social, and economic impact among people. The underlying effect of this impact speaks that all these are interconnected and have a cyclic effect on each other. Therefore, intervention in one area will help to bring change in other areas and also in developing a holistic care model. For instance, if a person who is the breadwinner of family is hospitalized due to the virus infection, it is not only affecting the individual but also has an effect on his or her familial life. Thus, the focus needs to be shifted at looking an ill person from biomedical perspective of disease to a biopsychosocial (BPS) perspective of health. The emphasis of BPS approach is placed on achieving positive health and preventing dysfunctions across all the areas of person’s lives, in addition, to mitigate psychological distress and reducing symptomatology.^[13] The importance of providing authentic and adequate information, community engagement, sensitization of the community, psychosocial analysis of the situation, resource mobilization, preventive activities, and enhancing social supports is some of the strategies to improve the quality of life of the affected. Timely sensitization and awareness to health workers, administration, media, local health volunteers, Anganwadi

Table 2: Psychosocial Impact of NiV

Individual	Familial	Community/State
<ul style="list-style-type: none"> • Anxiety • Fear of death • Witnessing death • Hospitalization • Fear of transmission of illness • Social ostracization • Discrimination • Lack of understanding • Beliefs about misfortune • Loss of support system • Lack of treatment facilities • Myths about the illness • Lack of proper and inadequate information • Disruption in economic activity • Rumours • Stigma of health professional 	<ul style="list-style-type: none"> • Witnessing the traumatic course of the infection • Frustration • Fear of infection • Stigma of infected family member • Lack of care • Caregiver Stigma • Financial Burden • Feelings of loss and grief • Distress • Guilt • Helplessness • Role changes • Unable to comfort or care • Ethical concerns • Working long hours • Issues concerning to the bodies of the deceased 	<ul style="list-style-type: none"> • Social exclusion • Widespread fears • Lack of information • Spread of rumours • Stigmatization • Blame • Cultural belief of the illness • Threatened, attacked, evicted • Traditional mourning practices • Disruptions of community interactions • Affecting the economic status • Social restriction • Discrimination • Violence • Loss of economic investment, business, travel and tourism • Loss of support or coping resources

workers, auxiliary nurse midwifery, and accredited social health activist need to be given training to prevent the occurrence of such illness and its management.

CONCLUSION

The primary focus of any public health issue is the prevention and mitigation of the illness spreading to a larger population with the help of advanced holistic health care. The prompt intervention of the stakeholders limited the diseases spread and contained larger impact reflects proactive, systematic, and coordinated efforts can change the scenario. In response to the challenges such as Nipah outbreak, the stakeholders, government, professionals, and administration, first responders need to be aware of the psychosocial impact and care. The response and mitigation plans must include the psychosocial intervention. A proper capacity building and awareness to health first responders, those who are in charge of the management of the outbreak and public health would enhance their capacity to respond and face any eventuality in this age of misinformation and fake news.

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