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 ijirset@gmail.com

 www.ijirset.com

Bihar Flood and its Impact on Health: A Continuous Cycle

Monika Kumari

PGDM Healthcare Management, IIHMR, Delhi

UGC-NET, Social Medicine and Community Health

ABSTRACT: Bihar, a major flood-prone state in India, suffers every year from the massive flood, along with the concerns regarding the safety and livelihood of people comes major health-related problems. Stagnant waters of flood pose a great threat to water-borne diseases. This review explores how Bihar deals with health-related issues during the flood and examines the techniques and measures taken for the prevention and treatment of various diseases and to discover the gaps and challenges in the service delivery system.

KEYWORDS: Flood, Disaster, Water-borne Diseases, Vector-borne disease, Health

I. INTRODUCTION

28 out of 38 districts of Bihar get flooded every in which 15 districts get affected the worst. Majorly, the Northern Part of Bihar, suffers from floods primarily caused by the overflowing of rivers such as the Ganges and the Kosi, which is also known as “ The River of Sorrow”, and heavy rains in Nepal, which lead to the river swelling and overflowing of the water through the dams and bridges. Every year, lakhs of people get affected by this natural disaster, destroying their homes, crops, farms and livestock, and following the calamity, they pick up what is left of the pieces of their lives and start again, only to have the story repeated again next year. The aftermath left severe impacts on public health, creating both immediate and long-term challenges such as water-borne diseases, Vector-Borne Diseases, and others such as skin infection, malnutrition, and mental health problems caused due to stress and trauma while also limiting the access to proper medical care. Considering that Bihar has the third largest population in India and is the state with the highest population density, with 1106 persons per square km, making the probability of people at risk even higher. In 2024, nearly 1.5 million people got affected, and thousands of people were displaced from their homes and faced severe shortages of relief material, creating distress in many and leaving their health at stake.

II. REVIEW OF LITERATURE

Waterborne diseases account for approximately 80% of deaths in India. Due to the unavailability of safe and potable water, people resort to groundwater at unsafe locations and depths, which may be susceptible to contamination, leading to the intake of unsafe drinking water and fostering numerous waterborne illnesses (Dr Sushma, 2020).

A study reveals that elderly people living in rural settings are more prone to waterborne disease than in urban areas because elderly people might not be aware of proper hygiene practices, which elevates the chances of disease risk (Pradeep Kumar et al., 2017-2018).

In Patna city, nearly 84% of city excreta is discharged into open drains, and it percolates into groundwater, which eventually leads to the contamination of groundwater, resulting in waterborne diseases, making Jaundice and typhoid common to the residents (Debjani Sarkar Ghose, 2019).

III. METHODOLOGY

The approach employed in this paper is descriptive and evaluative in nature. This study is primarily review-based. It mainly relies on secondary data sources, such as journals, articles and online resources.

IV. RESULT AND DISCUSSION

Consequence of lack of Sanitation

Public health actions are essential to preventing epidemics since they often disrupt clean water, sanitation and hygiene, contaminating the water sources and limiting access to toilets. Most of Bihar's rural population still heavily depends on groundwater (Wells and Tube wells) for drinking, which easily becomes contaminated during floods, causing water-borne diseases like cholera, dysentery, typhoid and hepatitis. The prevalence of water-borne disease in Bihar is high, especially in rural areas, also, in urban areas, the prevalence is even higher than in other states, at about 36.3%. However, the government's initiation of "Har Ghar Nal ka Jal Yojana (Jal Jeevan Mission)" to make safe drinking piped water available to households located in rural and urban areas helps in the prevention of such diseases during this natural phenomenon. Nonetheless, the scheme faces many challenges on its own as there often comes news about the unavailability of running water in the tap and fewer grievances redressal, which can be addressed with regular monitoring facilities for the assigned villages and quick response that can help corroborate with the scheme motive.

Inadequate Drainage Facility

Flooding and drainage are interrelated issues. Stagnant flood water, due to the lack of a proper drainage system, becomes a breeding ground for mosquitoes, which ultimately leads to diseases like Dengue, Malaria, Chikungunya, and Japanese Encephalitis. Bihar witnessed a surge in Dengue cases, mostly in September and October in the year 2024, after the majority part of Bihar was flooded, making the number of cases nearly 5,000.

For flood mitigation, the state government has suggested establishing a specialised unit to expedite the solutions for drainage and flood management with the goal of improving water flow and minimising water logging. Building dams and barrages and interlinking rivers to redirect excess water flows can help mitigate annual flood damage in the long run. As for stagnant water during the flood, regular chlorination with tablets and solution helps in disinfection and larvicides for the mosquitoes such as biological and chemical methods can be applied to control mosquito breeding.

Limited Access to Health Care Facilities

After going through numerous troubles during floods, access to proper medical care remains an obstacle. The flooded road makes it a really challenging task to transport patients and medical supplies, leading some areas to be completely unreachable for days. Also, nearby health centres often face a shortage of essential medical supplies such as medicine, Vaccines and clean water, which can severely affect patients with chronic conditions that require immediate medical attention.

During any disaster, the team of NDRF (National Disaster Response Force) is deployed for rescue and relief operations, which also includes providing medical assistance, but as with the local authority dealing with the situation first-hand strengthens the chances of prompt recovery and prevention from disease, as this was observed during the flood of year 2020 where Aspirational District Khagaria started a boat ambulance facility to reach out the flood affected area which was also the year of pandemic COVID-19, which included maternal and child health as well.

Shortages of food and Malnutrition

Damaged crops and spoiled food storage due to floods lead to a shortage of food resources, which ultimately leads to an increase in food prices, making it unaffordable for many. The low availability of nutritious food during and after the flood causes malnutrition, affecting vulnerable groups like children, pregnant and lactating women and the elderly.

The state government, however, takes several important measures to combat food scarcity and malnutrition, such as providing dry ration kits, which include rice, pulses, etc., in order to ensure that basic dietary needs are being fulfilled. In the 2024 flood, 1.91 lakh dry ration kits were distributed by the government, and 238 Community kitchens served food to 3.3 lakh people. Setting up pre-positioned food distribution centres beforehand in flood-prone areas can facilitate a quicker response. Anganwadi centres (AWC) can also be channelled as a source distributor of healthy foods that may be lacking during the times of floods, so the vulnerable group can be provided with the required essential nutritious food.

V. CONCLUSION

Floods are a natural phenomenon, and Bihar's geographical location makes it the most vulnerable flood-prone state in India. The state, as well as the national authorities, are ameliorating their model for this cyclical disaster every year by creating a robust infrastructure and emphasising Health-related issues and the safety of people. Although every concern regarding the health, well-being and livelihood of people is taken into account, the mental health problems still seem to be the least addressed. Effective methods such as improved water management and community participation are essential to mitigate the impacts. With the collaboration among local, state, national, and international agencies, the severe impact of floods can be reduced and its consequences on the lives of the people.

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