LETTER TO EDITOR

Outbreak investigation of acute diarrhoeal disease in a village of Dibrugarh District, Assam

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CITATION
Thaosen C, Kotoky MJ, Mahanta TG. Outbreak investigation of acute diarrhoeal disease in a village of Dibrugarh District, Assam. Indian J Comm Health. 2024;36(6):900-901.
https://doi.org/10.47203/IJCH.2024.v36i06.028
ARTICLE CYCLE
Received: 29/04/2024; Accepted: 25/11/2024; Published: 31/12/2024

Sir,

Lack of water sanitation and hygiene facilities (WASH) and practices are such that over 700 children under 5 years of age die every day of diarrhoeal diseases.(1) In recent past, despite substantial gains in access to WASH services almost 2.3 billion people worldwide still lack these basic human necessities.(2) Safe drinking water and basic sanitation are crucial interventions in fight against diarrhoeal mortality (WHO). Worldwide, each year, low sustainability in WASH services contributes to nearly two million deaths and 82 million disability-adjusted life years (DALYs) lost, which are preventable.(3) Additionally, insanitary food handling practices, contaminated food and water are responsible for high prevalence of Acute Diarrhoeal Disease(ADD) among older adults. ADDs persists as a public health problem in Assam too. Several cases of Acute diarrhoea occurred in Nalani village under Naharoni block PHC of Dibrugarh district along with death of a 9-year-old girl child on 30th Jan, 2023. Therefore, an epidemiological outbreak investigation was conducted with an objective to find out the source of infection, risk factors and to suggest control measures to limit the outbreak in the village of Dibrugarh with ethical clearance from Institutional Ethics Committee (H) of Assam Medical College & Hospital, Dibrugarh. An unmatched case control study with one control per case was conducted in the area. IDSP definition of ADD was adopted and a suspected ADD case defined as having ≥3 loose stools or vomiting within 24 hours in the area from 14th January 2023. Line listing of cases was done and identified a total of 38 cases. The cases had one control each and they were interviewed by house-to-house survey using a semi-structured questionnaire. Of the total 38 cases enlisted with symptoms: 18 (47%) had history of eating outside, 28 (74%) used tubewell water for drinking. Eating outside was more common (47% vs 44%) amongst cases compared to control in the last 2 weeks [OR: 1.112, CI, 0.4509 to 2.7412]. It was seen that, 34 (89%) out of 38 cases did not use any form of pre-treatment of water or seldom practised purification of water before drinking and 26 (68%) out of 38 cases did not practise hand hygiene after defecation and before meals. One rectal swab, 5 each of stool and water sample (total 11 sample) were collected and tested. All stool specimens tested positive for Escherichia coli, rectal swab showed Shigella flexneri type 2. Out of five water samples, two showed Escherichia coli growth. Presence of poultry farms near households leading to high density of housefly and prevalence of open defecation were important findings. Suboptimal hygiene practices and poor sanitary conditions has the propensity to further create such outbreaks in future if corrective measures are not put in place at the earliest.(4) Inspite of toilet construction and ODF status under Swachh Bharat Mission, there are many households where some people use the toilets while others defecate in the open.(5) The preference for open defecation is multifactorial. Even cultural beliefs and values also play an important role in people's decisions to accept or reject affordable sanitary toilets.(6) This study shows that the lack of sufficient, safe, affordable, reliable, and accessible WASH services for this population which has led to the outbreak of diarrhoea. Immediate detection of cases of

diarrhoea through house-to-house visit by frontline health workers and immediate referral and management of cases at the nearby health facilities is important. As ASHA works as depot holder for ORS and Zinc her proactive role has potential to reduce such fatalities. Awareness creation regarding identification of symptoms and use of ORS at household level needs to be promoted. Remedial measures for reduction of houseflies through source reduction and community participation is essential. Integrated approach with involvement of veterinary department regarding the inspection of the poultry farms and their maintenance and food safety department for overall vigilance of the sanitary status of the roadside eateries in the locality is of utmost importance.

Authors Contribution

All authors have contributed equally.

Financial Support and Sponsorship

Nil

Conflict of Interest

There are no conflicts of interest

Acknowledgement

We sincerely acknowledge the contribution of IDSP Dibrugarh Unit for their help in carrying out the outbreak investigation as well as Dr. Pallab Sarmah, ScientistC from ICMR-RMRC, Dibrugarh for technical guidance.

Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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