

Authors

- Shohal Hossain**
MPH Researcher,
Department of Public Health,
Gono Bishwabidyalay, Savar, Dhaka, Bangladesh
ORCID: <https://orcid.org/0000-0001-2345-6789>
Email: shohal@example.com
 - Dr. Md Tariqul Islam**
Director,
Center for Multidisciplinary Research,
Gono Bishwabidyalay, Savar, Dhaka, Bangladesh
Email: tariqul@example.com
 - Ayesha Rahman**
Assistant Professor,
Department of Environmental Health,
North South University, Dhaka, Bangladesh
ORCID: <https://orcid.org/0000-0002-1111-2222>
Email: ayesha.rahman@example.com
-

Abstract

Dengue fever poses a significant public health threat in urban Bangladesh, particularly in densely populated slum areas. This case study explores a community-based intervention implemented in the Korail slum of Dhaka during the 2022 dengue outbreak. The study documents the outbreak response process, challenges faced, and outcomes achieved. Using qualitative interviews, observational data, and a review of public health records, the study highlights the role of local health volunteers, NGOs, and digital reporting systems in outbreak control. The case concludes with lessons learned for scalable public health strategies in similar vulnerable settings.

Keywords: dengue, community health, urban slums, public health intervention, Bangladesh

1. Introduction

Dengue, a mosquito-borne viral infection, is endemic in Bangladesh, especially during the monsoon season. Dhaka, the capital city, has experienced repeated outbreaks due to rapid urbanization, poor drainage, and inadequate waste management (World Health Organization [WHO], 2022). Slum areas like Korail are especially vulnerable due to overcrowding and limited access to healthcare services.

This case study explores the community-based approach adopted in Korail during the 2022 dengue outbreak, aiming to understand the impact of localized interventions and identify strategies that could be replicated elsewhere.

2. Background

2.1 Study Area

Korail slum, located in Dhaka North City Corporation, houses over 100,000 residents. Characterized by unplanned settlements, inadequate sanitation, and poor health infrastructure, it represents a hotspot for vector-borne diseases.

2.2 The Outbreak

In June 2022, the Directorate General of Health Services (DGHS) reported a spike in dengue cases in Dhaka. By mid-July, Korail had over 150 confirmed cases. Due to limited government response, local NGOs, in collaboration with community volunteers, initiated grassroots-level interventions.

3. Methodology

This case study used a qualitative descriptive method based on:

- 15 in-depth interviews with local residents, health workers, and NGO staff
- Review of medical records and epidemiological data from DGHS and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)
- Observations of community mobilization activities between July and September 2022

Ethical approval was obtained from the Gono Bishwabidyalay Institutional Review Board (IRB #2022/07/19-PH).

4. Intervention Process

4.1 Mobilization of Community Health Volunteers

A group of 30 local volunteers was trained in basic vector control and symptom identification by the NGO BRAC. They conducted door-to-door awareness campaigns and distributed mosquito nets and larvicide tablets.

4.2 Community Mapping and Surveillance

Using open-source GIS tools, volunteers identified stagnant water sources and high-risk zones. A mobile app developed by a local startup allowed real-time reporting of suspected cases.

4.3 Medical Support and Referral

Temporary clinics were set up within the slum with support from ICDDR,B. Critical patients were referred to Mohakhali General Hospital using ambulances arranged by the Dhaka North City Corporation.

5. Results

- **Reduction in Cases:** Within 6 weeks, the number of new dengue cases dropped by 60%.
 - **Improved Awareness:** Over 75% of households reported knowing key dengue symptoms and prevention strategies.
 - **Data Collection:** The mobile app logged 412 suspected cases, improving the timeliness of interventions.
 - **Community Trust:** Interviews revealed increased trust in local health actors versus government officials.
-

6. Challenges

- **Resource Limitations:** Initial delays in supplies like larvicide and mosquito nets hampered early efforts.
 - **Volunteer Fatigue:** Sustaining motivation among unpaid volunteers proved difficult over time.
 - **Data Validity:** Some reported cases lacked clinical confirmation due to testing constraints.
-

7. Discussion

The success of the intervention was largely attributed to the use of local resources and trust-building measures. Previous studies support the effectiveness of community-based health models in resource-poor settings (Ahmed et al., 2021). The integration of digital surveillance with grassroots efforts represents a scalable model for future outbreak responses.

8. Conclusion

The Korail case demonstrates how community engagement and low-cost technologies can effectively control dengue outbreaks in urban slums. Policymakers should consider formalizing such approaches into national preparedness plans.

9. Recommendations

- **Policy Integration:** Incorporate community health volunteer networks into national disease surveillance systems.
 - **Digital Tools:** Expand use of mobile apps for early warning and outbreak mapping.
 - **Public-Private Partnership:** Encourage collaboration among NGOs, tech firms, and local governments.
-

References

(APA 7th Edition Format)

Ahmed, T., Rahman, M., & Hasan, S. (2021). Community participation in vector control programs: Evidence from urban slums of Bangladesh. *Journal of Public Health in Developing Countries*, 7(3), 44–58.

BRAC Health Programme. (2022). *Annual report: Urban health innovations*. BRAC.

Directorate General of Health Services. (2022). *Dengue situation report July 2022*. Ministry of Health and Family Welfare, Bangladesh.

ICDDR,B. (2022). *Dengue surveillance in Bangladesh: Challenges and progress*. Centre for Communicable Diseases, Dhaka.

World Health Organization. (2022). *Dengue and severe dengue*. <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>

Authors must ensure that their submission meets the following requirements before final submission. Submissions that do not adhere to these guidelines may be returned to the authors.

1. Originality and Plagiarism Check

- The manuscript is original, has not been previously published, and is not under consideration elsewhere.
- Proper citations are given for all referenced work.
- The manuscript has been checked for plagiarism using reliable software (e.g., Turnitin).

2. Manuscript Formatting

- The manuscript follows the **AJABSS formatting guidelines**, including title page, abstract, keywords, main text, references, tables, and figures.
- Font: Times New Roman, 12pt, 1.5 line spacing.
- All figures and tables are numbered and properly captioned.

3. Language

- The manuscript is written in clear, grammatically correct English or Bengali.
- The text has been spell-checked and proofread.

4. Abstract and Keywords

- An abstract (150–250 words) summarizing the objectives, methods, results, and conclusion is included.
- 3 to 6 relevant keywords are provided after the abstract.

5. References

- All references are cited in the text and listed at the end of the manuscript.
- The reference style used is consistent and follows the **APA (7th Edition)** or as specified by AJABSS.

6. Author Information

- Full name, affiliation, email address, and ORCID iD (if available) for each author are provided.
- The corresponding author is clearly identified.

7. Conflict of Interest and Funding

- Any potential conflicts of interest have been disclosed.
- Funding sources, if any, are acknowledged.

8. Ethical Considerations

- For studies involving human participants or animals, ethical approval has been obtained and is mentioned in the manuscript.

9. Supplementary Materials (if applicable)

- Any supplementary files (e.g., datasets, questionnaires, appendices) are properly labeled and uploaded.

10. Copyright and Publication Agreement

- The author(s) agree to the journal's copyright policy and publication terms.
- A signed Copyright Transfer Agreement (CTA) has been uploaded (if required).