

# The Effectiveness of Public Health Campaigns on Diarrhea in Urban Communities

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## ABSTRACT

Diarrheal diseases continue to be a leading cause of morbidity and mortality in urban communities, particularly among children under five in low- and middle-income countries. This review assesses the effectiveness of public health campaigns aimed at preventing and controlling diarrheal diseases in urban settings, with a focus on the roles of health education, behavior change communication, sanitation improvements, and community engagement. It explores key factors that influence the success of these interventions, including infrastructure, socioeconomic disparities, and cultural barriers. The review highlights successful strategies, including handwashing promotion, oral rehydration therapy, safe water practices, and improved sanitation, while also addressing challenges such as overcrowding, misinformation, and limited community participation. Recommendations are provided for enhancing the impact and sustainability of public health campaigns, underscoring the need for context-specific approaches, community involvement, and long-term evaluation to achieve lasting health improvements in urban areas.

**Keywords:** Diarrheal diseases, public health campaigns, urban communities, sanitation.

## INTRODUCTION

Urban communities in developing countries are increasingly faced with multifaceted public health challenges. The rapid pace of urbanization, while often indicative of economic development and modernization, has also led to the proliferation of informal settlements, overcrowding, inadequate housing, poor sanitation, and limited access to safe drinking water [1]. These conditions create fertile ground for the spread of communicable diseases, particularly those related to poor hygiene and water quality, such as diarrheal diseases [2].

Diarrhea remains one of the most common and preventable causes of morbidity and mortality globally, especially among children under five years of age [3]. According to the World Health Organization (WHO), diarrheal diseases are responsible for an estimated 525,000 deaths annually among children under five, with the vast majority occurring in low- and middle-income countries [4]. In urban settings, the problem is often exacerbated by the lack of reliable infrastructure, limited waste management systems, and challenges in public health service delivery. The burden of disease not only affects the health and well-being of individuals but also places a substantial strain on healthcare systems, reduces economic productivity, and contributes to the cycle of poverty and ill health [5].

Public health campaigns have emerged as a critical intervention in the fight against diarrheal diseases in urban environments. These campaigns often incorporate strategies such as health education, promotion of handwashing with soap, safe water storage practices, proper food hygiene, improved sanitation infrastructure, and increased awareness of oral rehydration therapy (ORT) [6]. By disseminating targeted messages through various communication channels, such as community outreach, media, school-based programs, and social marketing, these campaigns aim to instill sustainable behavioral change and improve public health outcomes [7]. The last two decades have witnessed a growing recognition of the role that effective communication and behavior change strategies play in disease prevention. The urban context presents both opportunities and challenges for the implementation of public health interventions [8]. On the one hand, urban areas offer relatively better access to mass media, higher literacy rates, and denser populations that can be reached more easily through targeted interventions. On the other hand, the heterogeneity of urban populations, cultural diversity, socio-economic disparities, and the presence of transient or marginalized populations pose significant barriers to the success of public health campaigns [9].

Numerous studies have documented the positive impact of hygiene promotion and health education on reducing the incidence of diarrhea. For instance, handwashing with soap has been shown to reduce diarrheal episodes by up to 40% [10]. Similarly, interventions that focus on the safe disposal of feces, improved access to potable water, and

food hygiene have demonstrated effectiveness in improving health outcomes. However, despite the availability of proven interventions, diarrhea remains endemic in many urban settings, suggesting that gaps persist in implementation, awareness, behavior change, or sustainability of interventions [11].

Despite ongoing public health efforts and the implementation of various hygiene promotion campaigns, diarrheal diseases continue to pose a significant health burden in urban communities of developing countries [12]. The persistent high incidence of diarrhea suggests that current interventions may not be reaching all segments of the population effectively or may not be achieving the desired level of behavioral change. Many urban health campaigns are often one-off or short-term projects that lack long-term sustainability and community ownership. Additionally, variations in socio-economic status, literacy levels, and cultural beliefs can influence the acceptance and success of such interventions [13].

Urban health authorities and policymakers often face difficulties in assessing the real impact of public health campaigns, primarily due to limited data, a lack of rigorous evaluation frameworks, and insufficient community engagement [14]. There is a pressing need to consolidate existing evidence, identify best practices, and understand the contextual factors that enhance or hinder the effectiveness of hygiene-related public health campaigns in urban areas. This review aims to analyze the effectiveness of public health campaigns in preventing and reducing diarrheal diseases in urban environments of developing countries. It examines the design, implementation, and evaluation of these campaigns, identifying key factors influencing their success, assessing their sustainability and scalability in urban contexts, and providing recommendations for improving future campaigns. The research questions include the types of public health campaigns, strategies employed, effectiveness in reducing diarrhea incidence, contextual factors contributing to their success or failure, and the sustainability and scalability of current public health campaign models in urban communities. The review is timely and relevant, as it addresses a critical gap in current public health research and practice, particularly in urban areas of developing countries. Urban populations are projected to grow exponentially over the next few decades, particularly in sub-Saharan Africa and South Asia. Without strategic interventions, the disease burden is likely to increase, disproportionately affecting the urban poor. The review provides valuable insights for policymakers, public health practitioners, non-governmental organizations, and community-based actors involved in designing and implementing health promotion campaigns. Understanding what works, for whom, and under what conditions can optimize resource allocation, improve campaign design, and promote sustainable behavioral change. The findings may also inform future research agendas and foster cross-country learning and collaboration in tackling diarrheal diseases in urban settings.

### **Burden of Diarrheal Diseases in Urban Settings**

Diarrhea remains the second leading cause of death among children under five years old globally, with urban slums representing a significant share of this burden. Contributing factors to the high prevalence of diarrheal diseases in urban settings include inadequate waste management systems, water contamination, and limited access to quality healthcare services [15]. In densely populated areas, overcrowding exacerbates the spread of infectious diseases, as access to sanitation and hygiene facilities is often compromised. Additionally, urban populations, particularly in slum areas, are more likely to be exposed to misinformation or face challenges in accessing accurate health information. This gap in knowledge and awareness can hinder the adoption of effective prevention and treatment strategies, further worsening the impact of diarrheal diseases. The combination of environmental factors and limited access to accurate health communication highlights the urgent need for comprehensive health communication strategies tailored to urban populations. These strategies should focus on improving sanitation, water quality, and public health awareness while addressing the specific barriers faced by these vulnerable communities [16].

### **Key Components of Effective Public Health Campaigns on Diarrhea Prevention**

Effective public health campaigns addressing diarrhea typically incorporate a range of crucial components aimed at reducing transmission and improving hygiene practices. Health education and behavior change communication (BCC) play a central role, focusing on key preventive behaviors such as handwashing with soap, safe food handling, and household water treatment to minimize contamination [17]. Additionally, campaigns emphasize improving sanitation and hygiene infrastructure by promoting the use of latrines and safe disposal of feces, ensuring that waste management practices reduce the risk of spreading disease. Media and community outreach efforts are also essential, utilizing mass media platforms such as posters, radio, and social media, alongside community mobilization activities to engage local populations. Finally, school and household interventions specifically target children and caregivers, providing direct education and resources to empower these groups in adopting healthy behaviors. By integrating these components, public health campaigns aim to reduce the prevalence of diarrhea and its associated health risks, ultimately improving the overall well-being of communities.

### **Effective Strategies for Promoting Hygiene in Urban Areas**

Handwashing campaigns in cities like Nairobi, Dhaka, and Kolkata have proven to reduce diarrheal incidence by up to 40%, especially when paired with community-level demonstrations and follow-ups. Urban Water, Sanitation, and Hygiene (WASH) initiatives have shown significant improvements in child health when integrated with local government policies and infrastructure development [18]. However, the long-term sustainability of these initiatives

depends on continued funding and community involvement. Mass media campaigns, particularly through radio and television, have had moderate success in disseminating hygiene messages to urban populations. Their effectiveness, though, is often influenced by factors such as literacy rates, cultural practices, and media accessibility. Additionally, school-based programs have demonstrated notable results in both educating children and promoting hygiene within households. Randomized control trials in Latin America and Sub-Saharan Africa have shown that such interventions lead to improved hygiene practices and reduced diarrhea incidence. Combining these strategies ensures a comprehensive approach to hygiene promotion in urban settings, creating lasting impacts on public health.

#### **Addressing Public Health Challenges in Urban Environments**

Urban environments face significant public health challenges, including overcrowding and poor infrastructure, which limit the reach and effectiveness of health interventions. Overcrowded areas often lack the resources needed to implement comprehensive public health strategies, making it difficult to address the needs of all residents [19]. Additionally, mistrust of government messaging, especially in contexts where the public has experienced inconsistent or ineffective health communication, can hinder the acceptance of health initiatives. Behavioral and cultural barriers, such as deeply rooted beliefs and traditions, further complicate the adoption of new health behaviors promoted by campaigns. In many urban settings, vulnerable groups like migrants and informal settlers are often left out of health interventions due to inequities in campaign reach, exacerbating existing health disparities. However, recent innovations present opportunities to overcome these challenges. Mobile health (mHealth) applications, SMS reminders for caregivers, and participatory video campaigns have proven effective in reaching underserved populations, particularly youth and women. These digital tools offer an accessible way to bridge communication gaps and engage communities. Moreover, integrating public health campaigns with urban planning and municipal services could foster synergies that improve overall health outcomes. By addressing infrastructure issues, building trust, and ensuring inclusivity, these innovations hold the potential to significantly enhance public health efforts in urban environments [20].

#### **Recommendations for Future Interventions**

For future interventions to be effective, it is crucial to tailor messages to local cultures and languages, ensuring they resonate with the target communities. This cultural sensitivity helps in fostering trust and improving message reception. Engaging community leaders and local health workers in the planning stages of health campaigns is equally important, as they can facilitate community buy-in and ensure that the interventions are aligned with local needs [21]. Continuous monitoring and evaluation must be incorporated to assess the progress and adapt strategies as needed, allowing for real-time adjustments to maximize impact. Furthermore, integrating health interventions with broader urban development and resilience planning ensures that health systems are not isolated but are part of a holistic approach to improving the community's overall well-being and long-term sustainability. This multi-faceted approach can strengthen community engagement and ensure that interventions are both relevant and sustainable, ultimately contributing to healthier, more resilient communities.

#### **CONCLUSION**

In conclusion, public health campaigns aimed at reducing diarrheal diseases in urban communities face both significant challenges and promising opportunities for improvement. The review highlights the critical role of health education, behavior change communication, and sanitation improvements in these campaigns, all of which have demonstrated effectiveness in reducing diarrhea incidence in urban settings. However, persistent barriers such as overcrowding, poor infrastructure, misinformation, and cultural differences continue to undermine the impact of these interventions. To enhance the effectiveness of future campaigns, it is essential to tailor messages to local cultures and languages, ensuring that they resonate with target populations. Additionally, engaging community leaders and health workers in campaign planning, alongside continuous monitoring and evaluation, will help refine strategies and ensure long-term sustainability. Integrating public health efforts with broader urban development and resilience planning will strengthen health systems and promote overall community well-being. By addressing these challenges and embracing innovative solutions, public health campaigns can achieve greater success in combating diarrheal diseases, ultimately improving the health outcomes of urban populations and contributing to sustainable development in low- and middle-income countries.

#### **REFERENCES**

1. Alum, E. U., Obeagu, E. I., Ugwu, O. P. C. Curbing Diarrhea in Children below five years old: The sub-Saharan African Standpoint. *J. New Medical Innovations and Research*. 2024;5(1); DOI:10.31579/2767-7370/083
2. Prüss-Ustün, A., Wolf, J., Bartram, J., Clasen, T., Cumming, O., Freeman, M.C., Gordon, B., Hunter, P.R., Medlicott, K., Johnston, R.: Burden of disease from inadequate water, sanitation and hygiene for selected adverse health outcomes: An updated analysis with a focus on low- and middle-income countries. *Int J Hyg Environ Health*. 222, 765–777 (2019). <https://doi.org/10.1016/j.ijheh.2019.05.004>

3. Ugwu, O. P. C., Alum, E. U. and Uhama, K. C. (2024). Role of Phytochemical-Rich Foods in Mitigating Diarrhea among Diabetic Patients. *Research Invention Journal of Scientific and Experimental Sciences*. 3(1):45-55.
4. Diarrhoeal disease, <https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease>
5. Kruk, M.E., Gage, A.D., Arsenault, C., Jordan, K., Leslie, H.H., Roder-DeWan, S., Adeyi, O., Barker, P., Daelmans, B., Doubova, S.V., English, M., Elorrio, E.G., Guanais, F., Gureje, O., Hirschhorn, L.R., Jiang, L., Kelley, E., Lemango, E.T., Liljestrand, J., Malata, A., Marchant, T., Matsoso, M.P., Meara, J.G., Mohanan, M., Ndiaye, Y., Norheim, O.F., Reddy, K.S., Rowe, A.K., Salomon, J.A., Thapa, G., Twum-Danso, N.A.Y., Pate, M.: High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Glob Health*. 6, e1196–e1252 (2018). [https://doi.org/10.1016/S2214-109X\(18\)30386-3](https://doi.org/10.1016/S2214-109X(18)30386-3)
6. Uti, D. E., Agah, V. M., Alum, E. U., Orji, O. U., Ezeani, N. N., Ugwu, O. P., Bawa, I., Omang, W. A. and Itodo, M. O. (2023). Physico-chemical and Bacteriological Analysis of Water used for Drinking and other Domestic Purposes in Amaozara Ozizza, Afikpo North, Ebonyi State, Nigeria. *Nigerian Journal of Biochemistry and Molecular Biology*, 38(1), 1-8. <https://doi.org/10.2659/njbmb.2023.151>.
7. Critchley J. A, Ejemot-Nwadiaro R. I, Ehiri J. E, Arikpo D, Meremikwu M. M (2015). Hand washing promotion for preventing diarrhea. *Cochrane Database of Systematic Reviews*, 9, 9. Art. No.: CD004265. DOI: 10.1002.
8. Haldane, V., Chuah, F.L.H., Srivastava, A., Singh, S.R., Koh, G.C.H., Seng, C.K., Legido-Quigley, H.: Community participation in health services development, implementation, and evaluation: A systematic review of empowerment, health, community, and process outcomes. *PLoS One*. 14, e0216112 (2019). <https://doi.org/10.1371/journal.pone.0216112>
9. Tan, S.Y., Foo, C.D., Verma, M., Hanvoravongchai, P., Cheh, P.L.J., Pholpark, A., Marthias, T., Hafidz, F., Prawidya Putri, L., Mahendradhata, Y., Giang, K.B., Nachuk, S., Wang, H., Lim, J., Legido-Quigley, H.: Mitigating the impacts of the COVID-19 pandemic on vulnerable populations: Lessons for improving health and social equity. *Soc Sci Med*. 328, 116007 (2023). <https://doi.org/10.1016/j.socscimed.2023.116007>
10. Ogban G. I, Nduso E. M, Iwuafor A. A, Emanghe U. E, Ushie S. N, Ejemot-Nwadiaro R. I (2020). Basic Knowledge of Childhood Diarrhea and Health-seeking Practices of Caregivers of Under-five Children in Calabar-South, Calabar, Nigeria. *Asian Journal of Medicine and Health*, 18, (4), 12-23. <https://doi.org/10.9734/ajmah/2020/v18i430195>.
11. Shafique, S., Bhattacharyya, D.S., Nowrin, I., Sultana, F., Islam, M.R., Dutta, G.K., del Barrio, M.O., Reidpath, D.D.: Effective community-based interventions to prevent and control infectious diseases in urban informal settlements in low- and middle-income countries: a systematic review. *Systematic Reviews*. 13, 253 (2024). <https://doi.org/10.1186/s13643-024-02651-9>
12. Uhama, K. C., Ugwu, O. P. C., Alum, E. U. (2024). Phytochemicals and Vitamins as Adjunct Therapies for Diarrhea in Diabetic Patients. *Research Invention Journal of Research in Medical Sciences*. 3(2):27-37.
13. Rong, T., Risteovski, E., Carroll, M.: Exploring community engagement in place-based approaches in areas of poor health and disadvantage: A scoping review. *Health & Place*. 81, 103026 (2023). <https://doi.org/10.1016/j.healthplace.2023.103026>
14. Kansime, W.K., Atusingize, E., Ndejjo, R., Balinda, E., Ntanda, M., Mugambe, R.K., Musoke, D.: Barriers and benefits of mHealth for community health workers in integrated community case management of childhood diseases in Banda Parish, Kampala, Uganda: a cross-sectional study. *BMC Prim Care*. 25, 173 (2024). <https://doi.org/10.1186/s12875-024-02430-4>
15. Omuna D., Obaroh I. O., Alum, E. U., Akiyode O. O., Eniru E. I., Tiyo C. E & Omoding, J. (2024). Impacts of climate change on water security in Uganda: A review. *Int. J. Adv. Multidiscip. Res*. 11(9): 47-60. DOI: <http://dx.doi.org/10.22192/ijamr.2024.11.09.005>
16. Alum E U, Obeagu E I, Ugwu O P C. Enhancing quality water, good sanitation, and proper hygiene is the panacea to diarrhea control and the attainment of some related sustainable development goals: A review. *Medicine (Baltimore)*. 2024 Sep 20;103(38):e39578. doi: 10.1097/MD.00000000000039578. PMID: 39312342; PMCID: PMC11419503.
17. Awor P, Wamani H, Bwire G, Jagoe G, Peterson S (2012). Private sector drug shops in integrated community case management of malaria, pneumonia, and diarrhea in children in Uganda. *The American journal of tropical medicine and hygiene*, 87, (5), 92, doi: [10.4269/ajtmh.2012.11-0791](https://doi.org/10.4269/ajtmh.2012.11-0791).
18. Ejemot-Nwadiaro, R.I., Ehiri, J.E., Arikpo, D., Meremikwu, M.M., Critchley, J.A.: Hand-washing promotion for preventing diarrhoea. *Cochrane Database Syst Rev*. 2021, CD004265 (2021). <https://doi.org/10.1002/14651858.CD004265.pub4>

19. Agwu E, Oming S, Moazzam M. L(2015). Prevalence of Cryptosporidiosis among diarrhea patients attending clinics in Bushenyi district of Uganda. Spec parasite pathogens J, 1, (1), 01-08.
20. Bruno, A., Arnoldi, I., Barzaghi, B., Boffi, M., Casiraghi, M., Colombo, B., Di Gennaro, P., Epis, S., Facciotti, F., Ferrari, N., Fesce, E., Ficetola, G.F., Fumagalli, S., Galimberti, A., Ghisleni, G., Nissim, W.G., Mainardi, L., Manenti, R., Messina, V., Negri, A., Palm, E., Piga, B.E.A., Rainisio, N., Tommasi, N., Labra, M.: The One Health approach in urban ecosystem rehabilitation: An evidence-based framework for designing sustainable cities. iScience. 27, 110959 (2024). <https://doi.org/10.1016/j.isci.2024.110959>
21. Alderwick, H., Hutchings, A., Briggs, A., Mays, N.: The impacts of collaboration between local health care and non-health care organizations and factors shaping how they work: a systematic review of reviews. BMC Public Health. 21, 753 (2021). <https://doi.org/10.1186/s12889-021-10630-1>

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