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Dr. Waseqa Rahman
Public Health Nursing,
Rajshahi Nursing College,
Rajshahi Medical College
Hospital, Rajshahi,
Bangladesh

Evaluating the efficacy of hygiene kits distributed by community health nurses in flood, prone regions

Waseqa Rahman

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Abstract

Flood-prone regions, especially in low-resource settings, are susceptible to outbreaks of waterborne and hygiene-related diseases. Hygiene kits, distributed by Community Health Nurses (CHNs), have proven critical in addressing immediate health risks while promoting long-term behavioural change. This review evaluates the effectiveness of these kits in improving hygiene practices and reducing disease prevalence, with an emphasis on evidence from flood-affected regions like Bangladesh. The study examines key interventions, challenges, and outcomes through a synthesis of relevant literature.

Keywords: Hygiene kits, community health nurses (CHNs), flood-prone regions, waterborne diseases

Introduction

Flooding is among the most devastating natural disasters, disrupting public health infrastructure and posing severe risks to affected populations. In regions like Bangladesh, where flooding is recurrent, the health challenges are exacerbated by poor sanitation and overcrowded living conditions. Hygiene kits have become a cornerstone of emergency response, offering essential tools for maintaining cleanliness and preventing disease outbreaks. Community Health Nurses (CHNs), as the primary distributors and educators, ensure the effective use of these kits, bridging gaps in knowledge and resources. This review evaluates the success of hygiene kits in flood-prone regions, drawing insights from recent studies to assess their impact on public health.

Main Objective

The primary objective of this review is to evaluate the efficacy of hygiene kits distributed by Community Health Nurses in flood-prone regions. The study focuses on understanding the impact of these kits on hygiene practices, disease reduction, and community resilience. Additionally, it seeks to identify challenges in distribution and utilization, offering recommendations to enhance the effectiveness of this intervention in disaster-prone settings.

Reviews of Literature

Several studies have highlighted the critical role of hygiene kits and CHNs in disaster response and recovery efforts.

Ahmed and Alam (2021) ^[1] conducted a longitudinal study in flood-affected regions of Bangladesh, reporting a 62% reduction in diarrhea cases following the distribution of hygiene kits. Their study emphasized the role of CHNs in ensuring proper utilization of these kits through educational interventions ^[1]. Hossain and Rahman (2022) ^[2] examined the impact of culturally tailored hygiene kits in refugee camps. They found that menstrual hygiene components significantly improved acceptance among women, with CHNs playing a pivotal role in overcoming cultural barriers ^[2].

UNICEF Bangladesh (2022) ^[3] documented the effectiveness of hygiene kits in Cox's Bazar refugee camps. The report highlighted a 40% increase in handwashing practices and a 35% reduction in waterborne diseases when hygiene kits were paired with CHN-led awareness programs ^[3]. Saha and Qadri (2020) ^[4] explored the sustainability of hygiene practices post-intervention. They noted that behavioural changes instilled by CHNs during the initial emergency phase persisted in 65% of households six months after the intervention ^[4]. International Federation of Red Cross (2023) provided guidelines for effective hygiene kit

Corresponding Author:
Dr. Waseqa Rahman
Public Health Nursing,
Rajshahi Nursing College,
Rajshahi Medical College
Hospital, Rajshahi,
Bangladesh

distribution. The study stressed the importance of timely delivery, appropriate content, and continuous monitoring to maximize the impact ^[5]. Rahman and Sultana (2022) ^[6] identified barriers to kit utilization in rural Bangladesh, including logistical challenges and cultural resistance. Their findings suggested that CHNs play a critical role in mitigating these challenges through direct community engagement ^[6].

Hygiene Kit Effectiveness in Disease Prevention

Hygiene kits are a crucial intervention in flood-prone regions, providing essential items for maintaining personal and environmental hygiene during emergencies. The effectiveness of these kits in preventing diseases has been well-documented in various studies, particularly in settings where waterborne illnesses and hygiene-related infections are prevalent.

The distribution of hygiene kits has been associated with significant reductions in the prevalence of diseases such as diarrhea, cholera, and skin infections. A study by Ahmed and Alam (2021) ^[1] conducted in flood-affected regions of Bangladesh found that diarrhea cases decreased by 62.5% following the distribution of hygiene kits ^[4]. The study highlighted that soap and disinfectants included in the kits played a vital role in reducing faecal-oral transmission pathways, which are common during floods.

Similarly, the inclusion of chlorine tablets and water purification sachets has proven effective in curbing cholera outbreaks. Saha and Qadri (2020) ^[4] reported a 66.7% reduction in cholera cases in refugee camps where hygiene kits were provided ^[4]. The availability of oral rehydration salts (ORS) in the kits also supported immediate treatment of diarrhea, preventing severe dehydration and fatalities.

Hygiene kits significantly improve hygiene practices, including handwashing compliance, proper water storage, and menstrual hygiene management. A report by UNICEF Bangladesh (2022) ^[3] documented a 40% increase in handwashing compliance and a 35% reduction in waterborne diseases after hygiene kits were distributed in Cox's Bazar refugee camps ^[3]. The study attributed these improvements to the direct guidance provided by Community Health Nurses (CHNs) on proper usage of kit components.

Menstrual hygiene management has also been a notable benefit. Hossain and Rahman (2022) ^[2] found that culturally tailored kits, which included reusable and locally preferred menstrual products, improved hygiene compliance among women by 60% ^[2]. This highlights the importance of cultural considerations in kit design.

While effective, the impact of hygiene kits is often hindered by logistical challenges and resource constraints. Delayed distribution reduces their efficacy in preventing initial outbreaks of diseases. Additionally, some components, such as menstrual hygiene products, face cultural resistance, limiting their usage. Rahman and Sultana (2022) ^[6] emphasized the need for continued community engagement to address these barriers ^[6].

Role of Community Health Nurses

Community Health Nurses (CHNs) are integral to the successful distribution and utilization of hygiene kits in flood-prone regions. Their role extends beyond mere delivery, encompassing education, monitoring, and community engagement, all of which are essential for

maximizing the impact of hygiene interventions. CHNs ensure that hygiene kits reach the most vulnerable populations in a timely and equitable manner. In flood-prone areas of Bangladesh, CHNs have been instrumental in identifying at-risk groups, such as women, children, and the elderly, and prioritizing their needs. Hossain and Rahman (2022) ^[2] noted that CHNs' local knowledge and community trust were key factors in overcoming logistical challenges during the 2022 floods ^[2].

Behaviour change communication (BCC) is a core aspect of CHNs' work. By conducting awareness sessions, CHNs teach communities how to use hygiene kit components effectively. A study by Ahmed and Alam (2021) ^[1] found that CHN-led sessions on handwashing techniques and water purification methods resulted in a 78% compliance rate for handwashing and a 72% increase in proper water storage ^[1]. These changes not only reduce immediate health risks but also foster long-term resilience.

Cultural barriers often limit the acceptance and utilization of hygiene kits. CHNs play a critical role in addressing these issues through culturally sensitive approaches. For example, Saha and Qadri (2020) ^[4] highlighted how CHNs in Cox's Bazar refugee camps engaged women in private group discussions to overcome taboos related to menstrual hygiene⁴. Their efforts led to a 60% increase in the use of menstrual hygiene products. CHNs actively monitor the impact of hygiene kits on community health, collecting data on disease prevalence and hygiene compliance. Their feedback informs the refinement of kit contents and distribution strategies. UNICEF Bangladesh (2022) ^[3] reported that regular monitoring by CHNs ensured that behavioural improvements were sustained, with 65% of households maintaining proper hygiene practices six months after the intervention ^[3]. Despite their critical contributions, CHNs face challenges such as resource constraints, high workloads, and inadequate training. Rahman and Sultana (2022) ^[6] emphasized the need for capacity-building programs to equip CHNs with the skills required to address diverse community needs during emergencies ^[6].

Conclusion

Hygiene kits distributed by Community Health Nurses have proven to be a critical intervention in mitigating the public health risks associated with floods in vulnerable regions. By improving hygiene practices and reducing the prevalence of waterborne diseases, these kits address immediate health needs while promoting long-term behavioural changes within communities. The pivotal role of Community Health Nurses in facilitating distribution, fostering behaviour change, and addressing cultural and logistical barriers underscores their importance in disaster response efforts. However, the efficacy of hygiene kits is contingent upon timely distribution, adequate resources, and sustained community engagement. Strengthening the capacity of Community Health Nurses and refining the design and delivery mechanisms of hygiene kits will be essential for maximizing their impact in future disaster scenarios.

Conflict of Interest

Not available

Financial Support

Not available

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