

Editorial

From Risk to Resilience: Addressing Water-Borne Hepatitis in Pediatric Population

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Received on: 05-Jun-2024

Accepted for Publication: 10-Jun-2024

Water is one of the basic necessities of human life. It plays an important role in sustaining and understanding public health. Over 40% of people on the planet suffer from water scarcity, which has evolved to be a leading global issue.(1) Based on the available sources for drinking, 1.8 billion people consume water which has been contaminated by feces. (1) At least 1.7 billion people worldwide utilize feces-contaminated drinking water in 2022. The biggest threat to the safety of drinking water is microbiological contamination brought on by feces.(2) An estimated 1 million individuals die from diarrheal illness every year as a result of poor hand hygiene, sanitation, and poor drinking water quality.(2) However, 395000 children under the age of five could not die from diarrhea every year if these risk factors were addressed.(2)

Based on data for the world's most water-stressed nations,(3) Pakistan is also one of the most vulnerable nations in the world, and is expected to become a water-stressed nation by 2040.(4) According to reports, waterborne infections account for around 80% of all diseases in impoverished nations like Pakistan.(5) Pediatric populations throughout Asia are at serious risk of contracting water-borne hepatitis, notably hepatitis A and E. Pakistan is particularly vulnerable to this high burden of disease. (6) In Pakistan, hepatitis A causes between 50 and 60 percent of pediatric cases of acute viral hepatitis. High fatality rates associated with Hepatitis A have been reported in children and pregnant women who go on to develop acute liver failure.(7,8) Similarly, contaminated water supplies have led to Hepatitis E epidemics in Pakistan.(9)

The urgency of shifting from risk mitigation to long-term resilience building against chronic diseases is evident in the way that climate change exacerbates flooding episodes and threatens water quality.(6) Inadequate water and sanitation facilities combined with frequent flooding in Pakistan have made the country a prime location for the spread of water-borne hepatitis.(6) While seemingly preventable, the confluence of inadequate sanitation infrastructure, limited access to clean water, and suboptimal vaccination rates conspire to create a public health crisis through water-borne hepatitis which disproportionately impacts the pediatric population.(7,8)

This editorial demands a paradigm shift in policy and practice to safeguard the nation's most vulnerable population. The current state of affairs in Pakistan paints a grim picture. Disparities in access to clean water are stark, with a substantial portion of the population relying on contaminated sources. Inadequate sanitation infrastructure further compounds the problem, creating a breeding ground for viral transmission.(6)

Furthermore, national vaccination coverage for hepatitis A, while improving, remains insufficient to achieve herd immunity, leaving children exposed.(6–8)

This situation necessitates a multi-pronged approach at the policy level. Firstly, urgent investment is required in bolstering water treatment facilities and distribution networks. Decentralized water purification solutions in under-served communities should be explored. Secondly, a national sanitation strategy focusing on constructing and maintaining public lavatories, particularly in peri-urban and rural areas, is paramount. Social marketing campaigns promoting hygiene practices, especially handwashing with soap, are crucial for behavior change.

The existing Expanded Program on Immunization (EPI) in Pakistan, while commendable, requires further optimization for hepatitis A. Policymakers must prioritize the inclusion of this vaccine within the national EPI schedule, ensuring timely administration to all children. Additionally, exploring alternative vaccine delivery mechanisms, such as school-based programs, can significantly enhance coverage.

Beyond policy changes, healthcare professionals, particularly pediatricians, can play a pivotal role. Strengthening surveillance systems to identify outbreaks and monitor trends in waterborne hepatitis is crucial. Furthermore, pediatricians must actively advocate for improved sanitation and water infrastructure at the local and national levels. Integrating hygiene education into well-child visits and community outreach programs can empower families to adopt preventive measures.

The fight against waterborne hepatitis in Pakistan demands a collective effort. Investing in infrastructure, optimizing vaccination programs, and empowering communities through hygiene education are critical steps towards safeguarding the health of Pakistani children. By recognizing the gravity of this public health emergency and implementing robust pediatric health policies, we can build a future where clean water and sanitation are not privileges, but fundamental rights, protecting our children from this preventable yet debilitating illness.

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