Water, sanitation, and hygiene (WASH) strategies in the fight against waterborne diseases in the young and old

Dear Sir,

The article titled "Drinking water, sanitation, hygiene, and health conditions in India: Findings from the national sample survey" published in the April issue (13(4):p 1535–1543) mentioned drinking water facilities, sanitation, and hygiene status and the impact of these on the health conditions of the Indian population, focusing on the health programs and strategies needed to provide safe water facilities to people.

Unsafe drinking water, inadequate sanitation, and poor hygiene practices are significant contributors to the global burden of disease. Contaminated water, harboring pathogens, parasites, and toxic substances, serves as a breeding ground for various waterborne illnesses, including cholera, typhoid fever, and poliomyelitis. These diseases often spread through the consumption of contaminated water or food, contaminated by fecal matter, pesticides, or other pollutants.[1]

Diarrhea, a leading cause of mortality among children under five worldwide, is closely linked to unsafe water and inadequate sanitation. Poor sanitation practices and insufficient protection of water sources lead to contamination of both water and food, exacerbating the transmission of diarrheal pathogens. In addition, inadequate water storage and substandard hygiene practices in households further elevate the risk of diarrheal infections.[2]

Furthermore, limited access to safe water, sanitation, and hygiene impedes efforts to prevent and manage neglected tropical diseases (NTDs) such as schistosomiasis, trachoma, and Guinea worm disease. NTDs thrive in environments lacking proper water and sanitation infrastructure, perpetuating cycles of poverty and illness. Ensuring reliable access to clean water, improved sanitation, and hygiene facilities is paramount to breaking this cycle and reducing the global burden of disease.[3]

Waterborne diseases pose a significant threat to the health of the elderly population in India, particularly in rural areas, where access to safe water and sanitation facilities is limited. The prevalence of waterborne diseases among the elderly is notably higher in regions such as Chhattisgarh and Madhya Pradesh. Factors contributing to this increased risk include the use of unimproved water sources, lack of improved sanitation infrastructure, and poor hygiene practices. In addition, malnutrition, as indicated by lower BMI levels, further elevates the susceptibility of the elderly to waterborne illnesses. Educational status also plays a role, with studies suggesting that educated individuals demonstrate lower susceptibility to waterborne diseases due to better hygiene practices and living conditions. Furthermore, aging-related factors, such as decreased immune function and reduced antibody resistance, make the elderly more vulnerable to infectious diseases transmitted through contaminated water.[4]

India has implemented various initiatives to tackle water, sanitation, and hygiene (WASH) challenges. Programs such as the Swachh Bharat Mission aim to eliminate open defecation and improve rural sanitation coverage, while the Jal Jeevan Mission focuses on providing functional household tap connections to ensure access to safe drinking water for every rural household by 2024. In addition, efforts have been made to raise awareness and provide health education to promote sustainable sanitation practices. These initiatives underscore India's commitment to achieving universal access to clean water and sanitation, in alignment with the Sustainable Development Goals agenda.[5]

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Conflicts of interest

There are no conflicts of interest.

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