

Prevalence Based Study on Basic Water, Sanitation and Hygiene (WASH) Practices and Its Impact Among Schoolers: A Reviewed Article

Ms. Rajeshwari T Ghattannavar¹, Mr. Amaresh H², Dr. Suresh Gouda S Patil³

¹Assistant Professor, Department of community Health Nursing, Shanti Institute of Nursing Sciences, Bagalkot

²Assistant Professor and HOD, Department of community Health Nursing, Shanti Institute of Nursing Sciences, Bagalkot

³Principal, Shanti Institute of Nursing Sciences, Bagalkot

Abstract—Water, Sanitation, and Hygiene (WASH) are essential for maintaining good health and preventing the spread of infectious diseases among scholars. This review article examines the prevalence of basic WASH practices, including access to clean water, sanitation facilities, and proper hand hygiene. The findings indicate that inadequate WASH practices increase the risk of contamination, illness, and school absenteeism. Strengthening WASH awareness and infrastructure is crucial for promoting healthier educational environments and improving students' overall well-being.

Index Terms—Hand Hygiene, Sanitation, Clean, Hand Wash, Contamination, etc

I. INTRODUCTION

Prevalence-based studies on Water, Sanitation, and Hygiene (WASH) map the adoption of healthy habits among school-aged children. Water, sanitation, and hygiene (WASH) remain fundamental public health components critical for children's survival, growth, and development of child. This is typically focus on infrastructure availability, hand washing compliance, and safe water consumption, ultimately revealing how inadequate facilities drive high rates of absenteeism, infectious diseases, and poor cognitive function. The poor access to water supply is a prevalent issue in over 850 million people worldwide with over 2.5 billion limited by access to sanitation facilities. The global burden of disease and mortality rates could be reduced by about 9.1% and 6.3%, respectively, if rapid success is attained in facilitating

access to water, sanitation, and hygiene facilities. The availability and access to the safe Drinking water is one of the pressing challenges of the modern world. Globally, roughly 10% of the population (~ 748 million people) has no access to potable water. This is further emphasized by their inclusion in the Sustainable Development Goals (SDGs), WHO, UNICEF in safe drinking-water, sanitation and hygiene are crucial to human health and well-being. Safe WASH is not only a prerequisite to health, but contributes to livelihoods, school attendance and dignity and helps to create resilient communities living in healthy environments.

Drinking unsafe water impairs health through illnesses such as diarrhoea, and untreated excreta contaminates ground waters and surface waters used for drinking-water, irrigation, bathing and household purposes. Chemical contamination of water continues to pose a health burden, whether natural in origin such as arsenic and fluoride, or anthropogenic such as nitrate. Safe and sufficient WASH plays a key role in preventing numerous NTDs such as trachoma, soil-transmitted helminths and schistosomiasis. Diarrhoeal deaths as a result of inadequate WASH were reduced by half during the Millennium Development Goal (MDG) period (1990–2015), with the significant progress on water and sanitation provision.

II. WASH PREVALENCE INDICATORS

Research highlights distinct behavioral metrics and infrastructural realities among schoolchildren:

- **Hand Hygiene:** Studies frequently show that up to 33% of children globally lack basic hand-washing services at school. In rural or low-resource settings, practice rates can drop drastically, with up to 100% of surveyed pupils admitting they do not wash their hands with soap after defecation.
- **Water Availability:** While roughly 80% of children globally have basic drinking water services at school, dehydration and unsafe storage remain prevalent, which significantly limits cognitive abilities and learning outcomes.
- **Sanitation Access:** Up to 22% of children worldwide lack functional sanitation facilities. Lack of separate latrines for boys and girls and inadequate menstrual hygiene management (MHM) push a large demographic—particularly girls in secondary education—into regular absenteeism.

III. DIRECT IMPACTS ON SCHOOLERS

- ✓ **Absenteeism:** Studies show that school-based WASH interventions can reduce diarrhea-related school absences by up to a 10-fold margin.
- ✓ **Gender Disparity:** The lack of functional, private school toilets—especially for menstrual hygiene management—causes a remarkable spike in absenteeism and drop-out rates among female adolescents.
- ✓ **Cognitive Function:** Basic access to safe drinking water drastically reduces student dehydration, which is directly correlated to improved cognitive abilities and overall learning outcomes.
- ✓ **Nutritional Deficit:** Poor sanitation and fecal contamination lead to intestinal damage (environmental enteropathy) in children, severely hindering nutrient absorption and causing malnutrition.

IV. STRATEGIC SOLUTIONS AND INTERVENTIONS

Evidence-based approaches emphasize the need for holistic interventions over single-focus programs:

- i. **Behavior Change Campaigns:** Teaching healthy habits through play or curriculum integration yields longer-lasting behavioral changes than passive health instruction
- ii. **Infrastructure Maintenance:** Routine cleaning and provision of hygiene kits directly boost the utilization of toilets and washrooms among students.
- iii. **Monitoring Progress:** Standardized measurement guidelines help identify specific deprivation domains, allowing local health and education boards to allocate resources efficiently

V. DISCUSSION

India accounts for the highest number of childhood deaths from diarrhea¹ so the Water sanitation and hygiene practice are important aspect of Environmental and Public Health in disease prevention and control, particularly water and sanitation related diseases. Water serves as an important medium through which many illnesses are spread in the human population² Unsafe WASH is linked to many communicable and non-communicable diseases. More seriously at a global level is the connection between COVID-19 transmission and cleanliness.³This review was done to explore the impact of water treatment, hygiene, and sanitary interventions on improving child health outcomes such as absenteeism, infections, knowledge, attitudes, and practices and adoption of point-of-use water treatment. ⁴The problem of this accessibility is very acute in certain regions and geographies of the world. WHO (World health Organization) has been working on the interventions in the areas of WASH (Water, Sanitation and Hygiene); aiming to prevent the outbreak of water-based diseases and prevent the deaths due to it⁵. Facilities should cater to all, including small children, girls of menstruation age, and children with disabilities.⁶

VI. CONCLUSION

Awareness creation about WASH among students, teachers and parents will yield the desired results. Training and capacity building programs should be organized at district and school levels. Proper coordination should be established with different departments and schemes. School authorities must ensure implementation of WASH guidelines and policies. Competition may be organized among schools and good practicing schools should be rewarded to create the feeling of competition and achievement. The KPI (Key Performance Indicators) fixed for the purpose should be monitored regularly

VII. RECOMMENDATION

The major problems can be modified are absenteeism, infections (diarrhea/acute respiratory), knowledge/attitudes/practices, and adoption of point of use water treatment To educate school students, teachers and parents about WASH and which will help to identify the absenteeism due to health issues, and also motivation of girl child for going to schools etc. And have the Training and capacity building programs organized at district and school levels. Within the education sector, WASH plays an indispensable role in fostering student health, dignity, and learning outcomes, since schools serve as critical platforms for health promotion and behavioral change.

REFERENCES

- [1] M Ommy, M Aditya &P Ashish. Effect of school-based educational water, sanitation, and hygiene intervention on student's knowledge in a resource-limited setting. BMC Public Health. 2021December11; 21 <https://doi.org/10.1186/s12889-021-12279-2>
- [2] DGYakob , A D Gemechu. Water, Sanitation, and Hygiene (WASH) Practices and Associated Factors Among Primary School Students. Science Journal of Public Health. 2026 April25 ;14(2): 114-28.
- [3] YAIbrahim. Impact Of Water, Sanitation and Hygiene (WASH) On the Health of Mayo Elementary School Children (Boys) In 2019-2020. Journal of Dental and Medical Sciences.2024November; 23(11) :08-23. DOI: 10.9790/0853-2311070823
- [4] AJoshi , CAyadi . Impact of water, sanitation, and hygiene interventions on improving health outcomes among school children. J Environ Public Health. 2013 Dec 28; 2013:984626. doi: 10.1155/2013/984626. PMID: 24454415; PMCID: PMC3888759.
- [5] Pandey et al.Impact assessment of WASH (water, sanitation and hygiene) interventions in schools. INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY. 2020 Sep 1;13(32):3315–18. <https://doi.org/10.17485/IJST/v13i32.462>.
- [6] M Celia. Water, Sanitation and Hygiene (WASH) in Schools in Low-Income Countries: A Review of Evidence of Impact. International Journal of Environmental Research and Public Health. 2019; 16(3):359. <https://doi.org/10.3390/ijerph16030359>