World Nutrition Journal |eISSN 2580-7013

SUPPLEMENT

Advancing child health through safe hydration

Diana Sunardi

Department of Nutrition, Faculty of Medicine, Universitas Indonesia, Cipto Mangunkusumo Hospital

Received 19 September 2025
Accepted 22 September 2025
Published 29 September 2025

Link to DOI:
10.25220/WNJ.V09.S1.0009

Citation: Sunardi D. Advancing child health through safe hydration. World Nutrition Journal.2025 September 29,9(S1): 12-13

Abstract

Diarrhea is One in five children in Indonesia does not drink enough water, but that's not the only problem regarding child health and water consumption. The prevalence of Diarrhea in Indonesian children is one in four children under 5 years old. The high prevalence is closely linked to poor sanitation and unsafe drinking water.

Water comprises 75% body weight in infants to 55% in the elderly, and plays very crucial role in cellular hemostasis and life. Therefore, the optimal functioning of our body requires a good hydration level from safe drinking water. The Indonesian Health Profile survey found that 70% households still consume contaminated drinking water, and only 11.9% homes have access to safe drinking water. Ten out of thirty-four provinces in Indonesia have a bad water quality index, with relatively high E.coli contamination. Contaminated drinking water leads to numerous health issues, such as diarrhea from bacterial contamination and the risk of low birth weight from Nitrate and lead contamination in the drinking water of pregnant women.

A recent study found an association between the composition of the gut microbiota and the incidence of stunting in children in the Jakarta slum area. Stunted children have higher pathogenic microbiota, while non- stunted children have higher good microbiota. Differences in the composition of this microbiota are influenced by sources of drinking water, sources of water for other activities, and the habit of hand washing before eating. Subjects with sources of drinking water that come from branded gallons have an abundance of good bacteria that are more abundant than subjects with drinking water sources that come from refill water or wells. This suggests that when there is a change in habitual behavior, it is possible for improvements to occur in the composition of the gut microbiota. This result supports the health issue of unhealthy drinking habits, i.e, non- communicable disease, preterm babies, cancer, and stunting.

Safe drinking water means safe from pathogens and physical contaminants, safe from chemicals, and safe amounts of minerals, including less sodium (maximum of 20 mg/L). Children are more vulnerable than adults to the harmful effects of contaminated water due to their developing immune systems and smaller body size. Ensuring access to safe, clean, and properly treated drinking water is critical to protect children's health, support their growth, and secure their future well-being

Keywords: children, safe drinking water, health

Presenting author:
Diana Sunardi
Department of Nutrition, Faculty of Medicine,
Universitas Indonesia, Cipto Mangunkusumo Hospital
Email: diana_sunardi@yahoo.com

References

1. Laksmi PW, et al. Dietary pattern and its association with stunting in children. Eur J Nutr. 2018.
2. UNICEF Indonesia. Water, sanitation and hygiene [Internet]. [cited 2025 Sep 17]. Available from: https://www.unicef.org/indonesia/water-sanitation-and-hygiene
3. Ratnayani, et al. Drinking water source and gut microbiota composition in stunted children living in Jakarta slum areas, isn't related? Int J Innov Res Sci Stud. 2025;8(2).
4. Kementerian Kesehatan Republik Indonesia. Profil Kesehatan Indonesia 2021. Jakarta: Kemenkes RI; 2022.
5. Firmansyah RRT, Murti B, Prasetya H. A meta-analysis of correlation between diarrhea and stunting in children under five. J Epidemiol Public Health. 2023;8(1):88–97. doi:10.26911/jepublichealth.2023.08.01.08
6. Badan Penelitian dan Pengembangan Kesehatan. Laporan hasil penelitian studi kualitas air minum rumah tangga (SKAMRT) di Indonesia. Jakarta: Badan Litbangkes; 2020.
7. Kementerian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia Nomor 492/MENKES/PER/IV/2010 tentang Persyaratan Kualitas Air Minum. Jakarta: Kemenkes RI; 2010.
8. World Health Organization. Guidelines for drinking-water quality. 4th ed. Geneva: WHO; 2011.