

Additional research must be done to ensure safety of pit latrines, new study says

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Pit latrines are one of the most common human excreta disposal systems globally, and their use is on the rise as countries aim to meet the sanitation-related target of the Millennium Development Goals (MDGs). Strong evidence supports the use of these basic toilets as a way to improve human health. However, improperly designed pit latrines can actually allow disease-causing microbes or other contaminants to leach into the groundwater. The contaminated water puts people, and especially children, at risk of developing potentially life-threatening diarrheal diseases.

A new study by Jay Graham, PhD, MBA, MPH, an assistant professor in the Department of Environmental and Occupational Health at the George Washington University School of Public Health and Health Services (SPHHS) in collaboration with Matthew Polizzotto of North Carolina State University first estimates the number of people worldwide that rely on pit latrines. The study goes on to identify some key [knowledge gaps](#) that could be addressed to keep the drinking water safe and protect the public.

Using survey data, the researchers calculated that an estimated 1.77 billion people around the globe use pit latrines, a step up from places that have no [sanitation facilities](#). In the countries where pit latrines are common, the study suggests that more than 2 billion people rely on the groundwater for their primary source of drinking water. Despite the risk of widespread contamination of the water from improperly designed or poorly located pit latrines, the researchers found there are very few

studies on this risk. Graham and Polizzotto reviewed the scientific literature and found that the studies that have been done on this topic are small and limited in scope.

The researchers conclude that much more needs to be done to identify technologies that can be used to protect the [groundwater](#) from contaminants coming from pit latrines. In addition, the team says that more work must be done to understand the impact of global warming on coastal areas of developing countries. If global warming results in flooding of regions relying on simple pit latrines the end result could be widespread contamination of the environment, Graham says.

"Poorly built pit latrines or those that are sited improperly can be a human health risk," Graham said. "Additional research could identify technologies and guidelines that might help developing countries build safer pit latrines."

More information: The study appeared online March 22, 2013 in the journal *Environmental Health Perspectives*.

Provided by George Washington University

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