

Issue 105 | June 28, 2013 | Focus on Sanitation for Preschool-Age Children

This issue focuses on sanitation for infants and preschool-age children. Many cultures consider the stools of infants harmless, or less harmful than those of adults. However, because of a much higher prevalence of diarrhea and higher egg counts for soil-transmitted helminths, children's stools often pose a greater health risk than those of adults. A 2013 review of water, sanitation, and hygiene (WASH) and enteric infections in children states that the safe disposal of children's stools has received relatively little attention in sanitation programs. A 2004 USAID report is the most thorough and recent review that was found on this topic. This issue contains the 2004 USAID review as well as selected studies and reports published since 2004.

We welcome suggestions for Weekly topics. Future issues will focus on menstrual hygiene management, innovation, water point mapping, mobile applications, and WASH in schools; more than 100 past issues of the Weekly are [archived](#) on the WASHplus website.

2004 LITERATURE REVIEW

- **Children's Feces Disposal Practices in Developing Countries and Interventions to Prevent Diarrheal Diseases: A Literature Review**, 2004. A Gil, USAID Environmental Health Project. ([Full text, pdf](#))

After a systematic search of the literature of studies published between 1986 and 2002, this report reviews the current state of knowledge of children's excretal practices in developing countries, the methodology used to assess it, and the epidemiological evidence that associates some of these practices with diarrheal diseases. The review aims to identify interventions that could improve the sanitary disposal of feces at the household level and interventions that have a high potential of reducing diarrheal diseases in children in developing countries.

JOURNAL ARTICLES

- **Burden and Aetiology of Diarrhoeal Disease in Infants and Young Children in Developing Countries (the Global Enteric Multicenter Study, GEMS): A Prospective, Case-Control Study**. *Lancet*, May 2013. K Kotloff. ([Full text, download](#))

[free but registration is required](#))

Diarrheal diseases cause illness and death among children younger than 5 years in low-income countries. The authors designed GEMS to identify the etiology and population-based burden of pediatric diarrheal disease in sub-Saharan Africa and south Asia.

- **Household Environmental Conditions Are Associated with Enteropathy and Impaired Growth in Rural Bangladesh.** *Am Jnl Trop Med Hyg, Apr 2013.* A Lin. [\(Full text, pdf\)](#)

This study assessed the relationship of fecal environmental contamination and environmental enteropathy. It compared markers of environmental enteropathy, parasite burden, and growth in 119 Bangladeshi children (≤ 48 months of age) across rural Bangladesh living in different levels of household environmental cleanliness defined by objective indicators of water quality and sanitary and hand washing infrastructure. Results are consistent with the hypothesis that environmental contamination causes growth faltering mediated through environmental enteropathy.

- **An Improved Tool for Household Faeces Management in Rural Bangladeshi Communities.** *Trop Med Int Health, July 2013.* R Sultana. [\(Abstract\)](#)

The objective of this study was to explore child defecation and feces management practices in rural Bangladesh with the aim to redesign and pilot a tool to facilitate removal and disposal of feces. Until 3 years of age, a child commonly defecates in the courtyard and occasionally inside the house. A heavy digging hoe was commonly used to remove child feces. Mothers preferred a redesigned "mini-hoe" and found it easier to use for removal and disposal of liquid feces. Promoting modified local tools may contribute to improving environmental sanitation and health.

- **Mothers' Beliefs and Barriers about Childhood Diarrhea and Its Management in Morang District, Nepal.** *BMC Research Notes, Oct 2012.* M Ansari. [\(Full text\)](#)

The study was carried out with the objective of determining mothers' beliefs and barriers about diarrhea and its management. Although a majority of mothers believed diarrhea was contracted due to natural causes, beliefs were also held about the supernatural origin of diarrhea. Thin watery diarrhea was considered the most serious. There was diversity in mothers' beliefs about foods/fluids and diarrhea management approaches. Similarly, several barriers were noted regarding diarrhea prevention and/or management such as financial weakness, lack of awareness, absence of education, distance from health care facilities, and senior family members at home.

- **Water, Sanitation, Hygiene and Enteric Infections in Children.** *Arch Dis Child, June 2013.* J Brown. [\(Full text\)](#)

Many cultures consider the stools of infants fed on breast milk harmless, or at least less harmful than those of adults because their feces are smaller, smell less, and contain less visual food residues. Additionally, most latrines are not designed to

accommodate, or may not be used by, small children. They might be afraid to use latrines because of the risk of falling in, bad smells, or the fear of dark spaces. Because nappies, child-sized potties, and washing machines are not available in many poor settings, defecation on the floor is common and potentially seen as the most practical option until the child is potty trained. To date, safe disposal of children's stools has received relatively little attention in sanitation programs.

REPORTS

- **The Application of Ecological Sanitation for Excreta Disposal in Disaster Relief: Experience, Selection and Design**, 2012. K Kinstedt. ([Full text](#))

This document evaluates four different Ecosan designs for use in emergency settings in a variety of countries and discusses the pros and cons of each. It emphasizes the need to pay attention to the safe disposal of children's feces.

- **The Chain of Infection Transmission in the Home and Everyday Life Settings, and the Role of Hygiene in Reducing the Risk of Infection**, 2012. S Bloomfield. ([Full text](#))

The evidence presented in this review on the global burden of hygiene-related diseases shows that infection outbreaks in the home and everyday life settings, particularly gastrointestinal, respiratory, and skin and wound infections, continue to exact a heavy toll on the health and prosperity of the global community. A significant proportion of these infections are preventable by getting people to practice better food and respiratory hygiene; hand, surface, and laundry hygiene; and other practices such as safe disposal of refuse and wastewater. In communities that lack access to adequate sanitation and clean water, this may also involve ensuring water treatment and safe storage and the safe disposal of feces.

- **Excreta Disposal and Hygiene Practices Following Child Defecation among Peri-Urban Households in Western Kenya**, 2011. R Rush. ([Full text](#))

This study examines child excreta disposal practices and associated hygiene practices among peri-urban caretakers of children under the age of 2. In addition, this study explores the barriers to and facilitators of safe excreta disposal and hygiene-related practices of caretakers at the household level.

- **Interventions to Improve Disposal of Human Excreta for Preventing Diarrhea**, 2010. T Clasen. ([Full text, pdf](#))

This review focuses on sanitation interventions to introduce or expand the provision or use of facilities for excreta disposal. This includes steps to reduce open defecation by constructing basic sanitation in accordance with the Millennium Development Goal target. It also includes interventions to improve the disposal of child feces, such as promoting potties when accompanied by the safe disposal of their contents.

- **Safe Feces Disposal for Younger Children**. 2010. WASHplus. ([Full text, pdf](#))

This excerpt from “Community Based Positive Prevention Training for Community Home Based Care Providers Facilitator’s Guide” provides diagrams and descriptions of small doable safe feces disposal actions for young children.

- **The Safe Squat: A Solid Investment for Insecure Sanitation Facilities**, 2013. S Melgen. ([Full text, pdf](#))

Evidence suggests that children in developing countries continue to openly defecate long after they are developmentally ready to be potty-trained, despite a recent focus to increase access to improved sanitation facilities. In 2011, the Safe Squat potty training tool was piloted in rural Kenya to facilitate children’s use of mud-floored pit latrines. The Safe Squat is a wooden platform that gives small children a temporary and secure base that is easy to clean.

- **Understanding Hand Washing Behavior: Results of Formative Research in Refugee Camp Populations in Thailand, Kenya and Ethiopia**, 2011.

International Rescue Committee. ([Full text, pdf](#))

Hand washing before drawing water for drinking can be promoted by pointing out that people might be ingesting fecal matter if the entire family is not washing their hands before drawing water, and by encouraging mothers and older children to teach younger children to wash their hands. Disgust, followed by a desire to properly nurture children, was identified as the strongest motivation for washing hands during focus group discussions in Ban Mai Nai Soi. The message “children are drinking shit!” might evoke disgust and a desire to nurture and protect young children.

Each WASHplus Weekly highlights topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID’s Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.

Please let WASHplus know at any time if you have resources to share for future issues of WASHplus Weekly or if you have suggestions for future topics. An [archive](#) of past Weekly issues is available on the WASHplus website.

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