



Handwashing Research Summary: What we learned about handwashing in the first quarter of 2015

Between January and March 2015 16 relevant peer reviewed handwashing studies were published.

Measurement of handwashing behavior

Three studies measured handwashing behavior at different critical points. In Afghanistan, less than 40% of mothers reported washing their hands with soap after using the toilet; soap was present in 70% of households studied.¹ In the West Bank and Gaza strip, 85% of those surveyed self-reported always washing their hands before eating, particularly women and those with higher levels of education.² And in rural Cambodia, a small qualitative study found mixed views on the importance of handwashing before touching newborns, but none of the families interviewed had handwashing stations near the latrines, and no instances of handwashing before handling newborns were observed.³

Meanwhile, a study from India raised concerns about the extent to which observation bias confounds the spot-check method for measuring household hygiene conditions in longitudinal studies. The researchers found that when they repeated discreet spot checks over the course of a year in more than 10,000 household visits, soap availability increased from 49% to over 77%, despite hygiene not being addressed in the study.⁴

Behavior change

Interviews and focus groups with over 12,000 households in the Philippines found their handwashing behavior was determined by an interaction of behavioral and environmental factors. The principal motivators were perceived susceptibility to skin diseases, habit, disgust, the desire to be clean and pure, and social considerations. Children tended to adopt the handwashing behaviors of adults in their homes and communities, to be influenced by sanitation standards in schools, and tended to act out of habit and reject unfamiliar facilities and cleaning materials.⁵ A study of handwashing practices on the Gaza Strip and West Bank found a further deterrent to be water scarcity; they also noted that women were more likely (82%) to assist children with handwashing compared to men (40%).²

Several studies considered the effectiveness of various handwashing promotion methods. In water-scarce areas of southern Ethiopia, researchers compared how education, public commitment, and infrastructure (tippy-taps) impacted handwashing behavior; they found that infrastructure was the most effective method in building self-efficacy and achieving behavior change. They found education alone to be least effective – indeed, after the education-only intervention, handwashing behavior actually decreased. The authors speculate that delivering education only seemed to generate fear and deter potentially imperfect handwashing. The impact of the public commitment intervention was unclear.⁶

A participatory women's group in Bangladesh that discussed child health found that not only did mothers' knowledge of handwashing at critical times significantly increase, they reported that after consistent attendance, their children had 10% fewer fevers and 12% fewer respiratory infections.⁷ Another promising handwashing promotion route is education of health facility attendees by health workers. In



rural Kenya, 4-40 months after researchers installed handwashing stations and educated health workers, 40% of those attending the health facilities reported having been taught about the importance of handwashing after defecation.⁸

Handwashing 'hardware'

In the Philippines, children's handwashing behavior was impacted by safe, comfortable, private and clean physical structure as well as the availability and quantity of water, soap and other cleansing materials (particularly in the household).⁵ A review of datasets in India showed that the protective effects of the mother's/caregiver's reported personal hygiene practices were stronger when it was accompanied by an improved household access to piped water and toilet facility.⁹

In terms of handwashing station sustainability, researchers found that after installing handwashing stations and a limited supply of soap in healthcare facilities in rural Kenya, most were functional 4-40 months later.⁸ Another study in Kenya found that four months after installing handwashing stations and soap in households, they were 71-85% more likely to have handwashing stations, and 49-66% more likely to have soap available, compared to those who had not received the intervention, showing good short-term adoption rates.¹⁰

Benefits of handwashing

Diarrheal disease

In Afghanistan, mothers reporting handwashing with soap was associated with a 15% reduced risk of diarrheal disease for their infants.¹ A systematic review showed that handwashing with soap consistently reduced the risk of diarrheal diseases for people living with HIV.¹¹

Stunting

An analysis of three large datasets in India⁹ found that mother's/caregiver's self-reported practices of washing their hands with soap either before a meal or after defecation was associated with a 15% reduced risk of stunting.

Hand foot and mouth disease

A study from China found handwashing with soap before meals after exposure to someone with hand, foot and mouth disease at a public playground reduced the risk of disease transmission by almost a fifth (18.7%) – the same benefits were not achieved by handwashing without soap.¹²

Schistosomiasis

A systematic review concluded that the use of soap during contact with freshwater may help protect against schistosomiasis infection. Soap is toxic to the parasites (cercariae and miracidia) that cause schistosomiasis, and is also toxic to some freshwater snails that harbor them.¹³

Influenza

A case control study involving 486 families in Bangladesh where handwashing was infrequently practiced did not find family handwashing behavior to be associated with influenza in young children.¹⁴



Contamination

Two small food hygiene studies under experimental conditions^{15,16} demonstrated that handwashing with soap and handwashing with water alone both reduced hand contamination; when hands are soiled, handwashing with soap was significantly more effective; some contamination between hands occurred.

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