

## Evidence Assessment: Summary of a Systematic Review

### Who is this summary for?

This evidence assessment is for Teachers, Doctors, Health Personnel, Community Health Workers and the partners involved involved in child health.

## Hand washing promotion for preventing diarrhoea

### Key findings

- Hand washing promotion at child day-care facilities or schools in high income countries probably prevents around 30% of diarrhoea episodes, and may prevent a similar proportion in schools in low- and middle-income countries.
- Among communities in low- and middle-income countries hand washing promotion prevents around 28% of diarrhoea episodes.

### Background

Diarrhoea causes many deaths in children below five years of age, mostly in low- and middle-income countries. The organisms causing diarrhoea are transmitted from person to person through food and water contaminated with faeces, or through person-to-person contact. Hand washing after defecation, or after cleaning a baby's bottom, and before preparing and eating food, can therefore reduce the risk of diarrhoea. Hand washing can be promoted through group or individual training on hygiene education, germ-health awareness, use of posters, leaflets, comic books, songs, and drama.

### Question

What are the effects of hand washing promotion interventions on diarrhoeal episodes in children and adults?

**Hand washing promotion for preventing diarrhoea in Cameroon:** According to the 2011 Demographic and Health survey, 21% of children under 5 suffer from diarrhoea in Cameroon. Special training sessions are regularly organised about the importance of washing hands with soap and water and hygiene in general, with practical demonstrations. These interventions could reduce the number of cases of diarrhoea among children in Cameroon.

**Table 1: Summary of the systematic review**

	<b>What the review authors searched for</b>	<b>What the review authors found</b>
<b>Studies</b>	Randomized controlled trials (RCTs), including cluster-RCTs.	Twelve randomized controlled trials and cluster-randomized controlled trials met the inclusion criteria.
<b>Participants</b>	Individuals (adults and children) in day-care centres or schools, patients in hospitals, communities, or households.	Individuals (adults and children) in day-care centres or schools, patients in hospitals, communities, or households.
<b>Interventions</b>	Activities that promoted hand washing after defecation or after disposal of children’s faeces and before eating, preparing or handling foods; for example, small group discussions and larger meetings on hygiene education, germs-health awareness interventions, multimedia communication campaigns with posters, radio/TV campaigns, leaflets, comic books, songs, slide shows, use of T-shirts and badges, pictorial stories, dramas, and games.	All trials used multiple hygiene interventions, except three which used only a hand washing intervention. One trial assessed the impact of provision of hand washing and diapering equipment on incidence and duration of infectious illness (including diarrhoea) in both children and staff. One other trial had three arms for the standard intervention, expanded intervention (which included the standard intervention and peer-monitoring of hand-washing), and control. One trial attempted to tease out the effects of the intervention alone from ‘monitoring’.
<b>Controls</b>	No hand washing promotion	No hand washing promotion
<b>Outcomes</b>	<p><b>Primary outcomes</b></p> <ul style="list-style-type: none"> <li>• Episodes of diarrhoea (self-reports collected through home visits; hospital/health centre/clinic records including admissions for diarrhoea-related dehydration).</li> </ul> <p>We defined diarrhoea as:</p> <ul style="list-style-type: none"> <li>• Acute/primary diarrhoea: passage of three or more loose or watery stools in a 24-hour period, a loose stool being one that would take the shape of a container; or definitions used by trial authors consistent with this standard definition.</li> <li>• Persistent diarrhoea: diarrhoea lasting 14 or more days.</li> <li>• Dysentery: stool with blood.</li> </ul> <p><b>Secondary outcomes</b></p> <ul style="list-style-type: none"> <li>• Diarrhoea-related death among children or adults.</li> <li>• Behavioural changes, such as changes in the proportion of people who reported or are observed washing their hands after defecation, disposal of children’s faeces, or before preparing or handling foods.</li> <li>• Changes in knowledge, attitudes, and beliefs about hand washing.</li> <li>• All-cause-under five mortality.</li> <li>• Cost-effectiveness.</li> </ul>	<p>The outcomes reported were:</p> <ul style="list-style-type: none"> <li>• Episodes of diarrhoea;</li> <li>• Hand washing behavioural changes;</li> <li>• Dysentery rates;</li> <li>• Changes in hand washing</li> </ul>
<b>Date of the most recent search:</b> 27 May 2015		
<b>Limitations:</b> This is a high quality systematic review, <b>AMSTAR =10/11</b>		
<b>Citation:</b> Ejemot-Nwadiaro RI, Ehiri JE, Arikpo D, Meremikwu MM, Critchley JA. Hand washing promotion for preventing diarrhoea. Cochrane Database of Systematic Reviews 2015, Issue 9. Art. No.: CD004265. DOI: 10.1002/14651858.CD004265.pub3.		

## Table 2: Summary of findings

Hand washing at child day-care centres and schools compared to no intervention			
<b>Patient or population:</b> Children			
<b>Settings:</b> Child day-care centres or schools			
<b>Intervention:</b> Hand washing promotion ( $\pm$ provision of hand washing materials)			
<b>Comparison:</b> No intervention			
Outcomes	Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)
<b>High income countries</b>			
Episodes of diarrhoea	0.70 [0.58-0.85]	4664 (9)	High
<b>Low- or middle-income countries</b>			
Episodes of diarrhoea	0.66 [0.43-0.99]	45 380 (2)	Low

### Applicability

The included trials were conducted in eight different countries: USA (five trials); China, Egypt, Kenya, Australia, Canada, Denmark, the Netherlands (one trial in each). These interventions may be applied in other low resources settings such as Cameroon.

### Conclusions

Hand washing promotion in high income countries and low- and middle-income countries may reduce the incidence of diarrhoea by about 30%. However, little is known about how to help people maintain hand washing habits in the longer term.

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