

Title Registration for a Systematic Review: WASH Promotion Programmes for Improving Sanitation and Hygiene Behaviour in Low- and Middle Income Countries: A Systematic Review

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TITLE OF THE REVIEW

WASH Promotion Programmes for Improving Sanitation and Hygiene Behaviour in Low- and Middle Income Countries: A Systematic Review

BACKGROUND

Diarrhoeal diseases are the second highest cause of death in low income countries and the fifth highest cause of death in the world (WHO 2011). Providing clean drinking water and improved sanitation for the entire world would hypothetically avoid 2.9 billion cases of diarrhoea annually, which is 53% of the total number of cases. Investing in clean drinking water and sanitation would gain 320 million productive days each year in the 15–59 year age group, an extra 272 million school attendance days a year, and an added 1.5 billion healthy days for children under 5 years of age (Hutton & Haller 2004). Effectiveness of these interventions is proven in several systematic reviews, however sustainability of these interventions remains an issue, and in a number of studies it is shown that impact falls over time (Cairncross 2010, Waddington 2009).

A lot of programmes have been developed and are currently being applied in practice to promote uptake and use of sanitation and hygiene, including sanitation marketing, community-led total sanitation, national government subsidies programmes, community-based cross subsidies, vouchers, cash transfers and others. It is not always clear which of these programmes are most effective in relation to behaviour change (uptake, adherence, sustainability), and other outcomes such as health outcomes (e.g. decreased morbidity and mortality due to diarrhoea), education outcomes (increased knowledge, skills and attitude), gender and human rights. However, for policy makers and other decision makers this is crucial information in order to make better decisions and improve development practice.

OBJECTIVES

First an extensive sensitive overview of existing systematic reviews will be performed, and identified reviews will be mapped against a logical framework (Theory of changes) (“Phase 1”). In this way gaps will be identified and research questions can be refined if necessary. Second, the research questions will be answered by systematically searching for individual studies (“Phase 2”).

Research question 1: What is the effectiveness of interventions aiming to promote sanitation and hygiene behaviour change in communities in low- and middle income countries?

Research question 2: How do the perceptions and experiences of participants in terms of the programme’s applicability, feasibility, appropriateness and meaningfulness influence sanitation and hygiene behaviour change?

EXISTING REVIEWS

Seven existing systematic reviews were identified, which were published recently (between 2008 and 2014).

Four systematic reviews provided narrative/descriptive information on (1) the type of approach that was used to promote WASH interventions (i.e. social marketing principles (Evans 2014, Mah 2008), financial incentives (Gopalan 2014)), (2) the type of behaviour change model (Dreibelbis 2013), or (3) the type of behaviour change outcome (Vindigni 2011).

Only two systematic reviews reported qualitative/quantitative data and found an improved behaviour due to a financial incentive-based sanitation programme (increased latrine ownership (1 experimental study), Gopalan 2014) and a marketing- or education-based hygiene promotion programme (improved hand washing/defecation behaviour (2 experimental studies), Khanal 2013).

Finally, two systematic reviews also showed quantitative data on the effectiveness of WASH interventions on health-related outcomes (no difference on nutritional status in children (Dangour 2013), reduction duration/incidence of diarrhoea (Khanal 2013)).

In addition, three state-of-the-art publications in the line of the research question were found.

(1) A 3ie funded synthetic review (Waddington et al (2009)) highlighted the importance of behavioural factors in determining uptake and sustainable adoption of WASH technologies. The proposed systematic review will be of added value by giving a comprehensive and up-to-date overview of which WASH interventions + type of approach are effective to improve behavioural factors.

(2) A 3ie-funded systematic review (Winch et al 2013) answers the question “What factors affect sustained adoption of clean water and sanitation technologies?”. These researchers use a theoretical model (Integrated Behavioral Model for Water, Sanitation, and Hygiene) as a tool to identify these (contextual/psychosocial/ technological) factors. The proposed systematic review will use uptake, adherence and sustainability as primary behavioural change outcomes whereas the systematic review from Winch identifies potential influencing factors to these outcomes.

(3) In an Evidence paper from the Department for International Development – UK Aid (2013), several systematic reviews have assessed the impact of WASH interventions on both health- and non-health (e.g. behavioural) related outcomes. The proposed systematic review will be of added value since it will consider specific approaches (e.g. social marketing) that were not evaluated in the Evidence paper, including e.g. social marketing and financial incentives.

In summary, based on the analysis of existing systematic reviews, it was shown that a systematic collection, extraction and analysis of qualitative/quantitative data on the effectiveness of sanitation and hygiene promotion programmes on behaviour change outcomes is relevant and timely.

INTERVENTION

Intervention:

Programmes conducted to promote uptake and use of the following sanitation and hygiene interventions will be included: latrine use, sewer connection, drainage system, hand hygiene, faeces disposal practices, including promotional approaches such as social marketing principles, community-led total sanitation and financial incentives (national government subsidies programmes, community-based cross subsidies, vouchers, cash transfers). Any combination of the interventions listed above will be included. Programmes using no promotional approaches will be excluded.

Comparison:

Programmes with other forms of behaviour change promotion or no intervention provided.

POPULATION

Communities (both children and adults) in low- and middle-income countries which are classified according to the Human Development Index categories (United Nations Human Development Report 2014). Subgroups including gender, age, disability, and rural/urban location will be constructed (if applicable). Studies performed at an individual, household level or in school settings will be included, whereas studies in other institutional settings (e.g. hospitals) will be excluded.

OUTCOMES

In order to answer the primary question (effectiveness of interventions), systematic reviews reporting the following outcomes will be selected:

Primary outcome: behaviour change (uptake, adherence, sustainability of/to sanitation and hygiene interventions, such as increased hand washing, increased latrine use, improved faeces disposal practices).

Secondary outcomes: changes in knowledge, skills and attitude resulting from sanitation and hygiene interventions; incidence of waterborne pathogens; morbidity and mortality due to waterborne pathogens; gender related outcomes; outcomes related to human rights.

Systematic reviews reporting data on secondary outcomes will only be included if also data on primary outcomes (behaviour change) are available.

In order to answer the secondary question (implementation aspects), systematic reviews reporting qualitative data concerning perceptions and experiences of participants in terms of the programme's applicability, feasibility, appropriateness and meaningfulness will be selected. Only systematic reviews that also report primary outcomes concerning the effectiveness of interventions will be included.

STUDY DESIGNS

Phase 1:

We will include systematic reviews that (1) at least searched two electronic databases, (2) report their search strategy and (3) report their selection criteria. We will exclude systematic reviews that do not include any (quasi-)experimental study.

Phase 2:

In order to answer the primary question (effectiveness of interventions), the following study types will be selected: Impact evaluations using an experimental design (randomised controlled trials (RCTs) with assignment at individual or household/community level (cluster, e.g. Pattanayak 2009)) or quasi-experimental design (non-RCTs with baselines and concurrent control groups matched by confounding variables, studies applying statistical matching methods to survey data, e.g. Sood 2014). Studies that do not control for endogeneity of programme placement or self-selection into the intervention group (observational studies) will be excluded due to serious problems of confounding (e.g. Barnard 2013). Also research methodology reports/manuscripts, editorials and economic analyses will be excluded.

In order to answer the secondary question (implementation aspects), studies reporting qualitative data concerning perceptions and experiences of participants in terms of the programme's applicability, feasibility, appropriateness and meaningfulness will be selected. Only studies that also report primary outcomes concerning the effectiveness of interventions will be included, as well as "sibling studies" (studies reporting qualitative data concerning an intervention that was described in one of the included studies on effectiveness of interventions, but published later as a separate study).

REVIEW AUTHORS

Lead review author: The lead author is the person who develops and co-ordinates the review team, discusses and assigns roles for individual members of the review team, liaises with the editorial base and takes responsibility for the on-going updates of the review.

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ROLES AND RESPONSIBILITIES

Please give a brief description of content and methodological expertise within the review team. It is recommended to have at least one person on the review team who has content expertise, at least one person who has methodological expertise and at least one person who has statistical expertise. It is also recommended to have one person with information retrieval expertise. Please note that this is the *recommended optimal* review team composition.

- **Content:** Hans Mosler is the coordinator of several Watsan research projects in low- and middle-income countries resulting in more than 40 peer-reviewed publications. He is specifically experienced in WASH behaviour change. Axel Vande Veegaete has performed numerous assessment and evaluation missions for development and rehabilitation programmes for the International Federation of the Red Cross and Red Crescent Societies and Belgian Red Cross in the field of water, sanitation and hygiene in Burundi, India, Malawi, Mozambique, Namibia, Nepal and Rwanda (1998-2003).
- **Systematic review methods:** Emmy De Buck, Taryn Young, Hans Van Remoortel, Axel Vande Veegaete and Karin Hannes co-authored several systematic reviews, including systematic reviews in the domain of humanitarian aid. Taryn Young and Karin Hannes are both involved in the Cochrane Collaboration and co-authored several Cochrane systematic reviews. Karin Hannes is also involved in the Campbell Process & Implementation Methods Group and is particularly experienced in qualitative evidence syntheses. Thashlin Govender is first author of several publications in the epidemiological field on the health and sanitation status of specific low-cost housing communities as contrasted with those occupying backyard dwellings in the City of Cape Town, South Africa.
- **Statistical analysis:** Alfred Musekiwa provides biostatistical support to the University of Pretoria (South Africa), and statistical consulting within CDC, National Institute of Communicable Diseases (NICD) and National Department of Health (NDoH) including giving statistical support to PhD and MPH degrees in health sciences. He has computer proficiency regarding the following statistical software packages: Stata, SAS, Epi-Info, SPSS.
- **Information retrieval:** Vittoria Lutje has 13 years of experience as a specialist in the retrieval and assessment of scientific and clinical information. She designs and tests highly specialized search strategies for Cochrane systematic reviews and other systematic review groups.

POTENTIAL CONFLICTS OF INTEREST

The authors are not aware of any conflicts of interest arising from financial or researcher interests.

FUNDING

This review is funded by zie.

PRELIMINARY TIMEFRAME

Note, if the protocol or review are not submitted within 6 months and 18 months of title registration, respectively, the review area is opened up for other authors.

- Date you plan to submit a draft protocol: 18.03.2016
- Date you plan to submit a draft review: 28.02.2017

DECLARATION

Authors' responsibilities

By completing this form, you accept responsibility for preparing, maintaining, and updating the review in accordance with Campbell Collaboration policy. The Coordinating Group will provide as much support as possible to assist with the preparation of the review.

A draft protocol must be submitted to the Coordinating Group within one year of title acceptance. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the Coordinating Group has the right to de-register the title or transfer the title to alternative authors. The Coordinating Group also has the right to de-register or transfer the title if it does not meet the standards of the Coordinating Group and/or the Campbell Collaboration.

You accept responsibility for maintaining the review in light of new evidence, comments and criticisms, and other developments, and updating the review every five years, when substantial new evidence becomes available, or, if requested, transferring responsibility for maintaining the review to others as agreed with the Coordinating Group.

Publication in the Campbell Library

The support of the Coordinating Group in preparing your review is conditional upon your agreement to publish the protocol, finished review and subsequent updates in the Campbell Library. Concurrent publication in other journals is encouraged. However, a Campbell systematic review should be published either before, or at the same time as, its publication in other journals. Authors should not publish Campbell reviews in journals before they are ready for publication in the Campbell Library. Authors should remember to include a statement mentioning the published Campbell review in any non-Campbell publications of the review.

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Emmy De Buck

24 September 2015