
Title registration for a systematic review:

Community-Led Total Sanitation in rural areas of low- and middle-income countries: a systematic review of evidence on effects and influencing factors

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Submitted to the Coordinating Group of:

Crime and Justice

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Disability

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Nutrition

Social Welfare

Methods

Knowledge Translation and
Implementation

Other:

Plans to co-register:

No

Yes Cochrane Other

Maybe

Date submitted:

Date revision submitted:

Approval date:

Title of the review

A systematic review of Community-Led Total Sanitation approach in rural areas of low- and middle-income countries: effectiveness and influencing factors.

Background

In 2015, an estimated 2.3 billion people did not have access to improved sanitation facilities. Of these people, around 892 million practised open defecation (OD), mostly in rural areas of low- and middle-income countries (WHO/UNICEF 2017). The once predominant focus on the construction of toilets has been increasingly supplemented and sometimes replaced by interventions focusing on demand and sanitation behaviour change. Community-led total sanitation (CLTS), addressed in this review, has become a prominent demand-oriented strategy. Since its first implementation in 1999-2000, the CLTS movement has already been used in approximately 60 countries (see www.communityledtotalsanitation.org), some of which have integrated it as part of a national sanitation policy.

Policy relevance

CLTS has gained a reputation for being an inexpensive, simple, participatory, community-empowering, and effective strategy for the elimination of open defecation (OD). The potential of CLTS to improve human health and the sustainability of outcomes achieved through CLTS are nevertheless debated (e.g. Pickering et al. 2015; Crocker et al. 2017). Moreover, CLTS has been criticized because of the use of unethical practices (e.g. Bartram et al. 2012, Engel and Susilo 2014) and a risk of its acontextual and mechanistic applications (Bardosh 2015).

Prior to this review, we conducted an interview survey among 19 development practitioners experienced with CLTS implementation in 14 different countries (Ficek and Novotny 2018). We found a contrast between the predominantly positive assessments, popularity, and massive use of CLTS in practice and the so far very limited evidence of its results. We also realized that an evidence synthesis of the CLTS effectiveness would most likely be insufficient to inform policy and practice if variations in effects are not contextualized.

Objectives

- 1) What is the effectiveness of CLTS approaches in rural areas of low- and middle-income countries?
- 2) Which factors influence the implementation and results of CLTS approaches in rural areas of low- and middle-income countries and how?

The two research questions defined above will be accomplished through the following steps. First, we will systematically identify studies that analyze CLTS approaches and report on

their results. Second, we will appraise these studies along the predefined criteria developed for the purposes of this systematic review and determine the final sample of studies. Third, we will identify sanitation outcomes analyzed in the final sample of studies and typologically classify these outcomes. Fourth, we will assess the evidence on effectiveness of CLTS with respect to different types of outcomes (feasibility of meta-analysis will be considered on an ad-hoc basis). Fifth, we will identify factors influencing CLTS implementation and reported sanitation outcomes and typologically classify these factors. Sixth, we will examine and characterize how the theory of change behind CLTS is represented. Seventh, we will attempt to assess how different contextual and implementation factors affect results of CLTS.

Existing reviews

To our best knowledge we are not aware of any systematic review concerned specifically with either the results of CLTS approaches or factors which affect the use of CLTS approaches. However, there are several recent systematic reviews published since 2016 that are related to the present proposal:

De Buck et al. (2017) reviewed evidence on approaches to promote handwashing and sanitation behaviour with respect to their effectiveness and factors affecting their implementation. Novotny et al. (2018) reviewed evidence on which contextual factors and motivations influence which sanitation outcomes and how when focusing on rural community sanitation. A systematic review and meta-analysis by Garn et al. (2017) attempted to quantitatively characterize how different sanitation interventions affect sanitation conditions. Another recent systematic review by Sclar et al. (2016) examined the relationships between sanitation conditions and faecal exposure along main transmission pathways.

There are several systematic reviews that addressed the relationships between sanitation conditions and health of which a few also focused on the effects of sanitation interventions on human health (Freeman et al. 2017 represents a recent example). One systematic review also focused on the impact of sanitation on non-health outcomes such as cognitive development and school absence (Sclar et al. 2017).

In addition, there is a recent Cochrane review protocol which addresses the effects of interventions to improve sanitation, hygiene, water quality and supply on child development (Piper et al. 2017).

Intervention

We will focus on studies examining the results and implementation of CLTS approaches including their direct modalities. Although it might be difficult to find CLTS implementation in a “pure” form, its salient features can be summarized as follows:

- Focus on community-level action and use of social influence factors (e.g. social conformity, social networks, mutual collaboration, solidarity, and surveillance).
- Focus on the introduction of a new social norm around the unacceptability of OD as a key prerequisite for achieving the Open Defecation Free status of a community.
- Use of participatory facilitation towards self-assessment and community's own decisions rather than direct persuasion through information promotion.
- Use of triggering activities which utilize both positive and negative emotions and social motivations to create demand for community action and behaviour change.
- Emphasis on self-construction of latrines from locally available materials rather than externally provided or subsidized latrines to induce a sense of ownership.

We will include studies examining the direct modalities of CLTS (e.g. the use of CLTS in Ethiopian Community-Led Total Sanitation and Hygiene) and its combination with other approaches (e.g. with Sanitation Marketing in the Indonesian Total Sanitation and Sanitation Marketing programme). We learned from the survey among CLTS practitioners (Ficek and Novotny 2018) that the CLTS approach has often been adjusted to local context. We thus don't expect that all of the salient features listed above will always clearly be identifiable from scrutinized primary studies. However, we will attempt to distinguish CLTS approaches and their direct modalities from other community sanitation promotion approaches (e.g. SARAR, PHAST, CHAST etc.). These other approaches may be considered as comparators and the same applies to the no-intervention-settings.

Population

Population in rural areas of low- and middle-income countries (World Bank classification) with no restrictions on demographics.

For this review the defining parameters of subgroups, whether demographic, socioeconomic, sociocultural, ecological, or other parameters, in fact represent contextual factors and will thus be examined as in the research questions above. In addition, whenever reported in primary studies in our final sample, we will extract contextual characteristic of surveyed communities, villages, or regions.

We expect that most studies will consider individuals or households as the basic units of observation (though may simultaneously report community- or region-level contextual characteristics). Studies which consider entire communities, villages, or higher-level entities (e.g. districts) as the basic units of observation will also be identified but considered as a separate category.

Outcomes

As described in the Objectives section above, the identification of specific outcomes analyzed in primary studies will be one step in this review.

Instead of distinction between primary and secondary outcomes we distinguish proximate and ultimate outcomes based on the logical model of sanitation as in Novotny et al. (2018).

Proximate outcomes:

- Sanitation conditions such as measures of latrine availability and latrine use, prevalence of OD, parameters of latrine quality etc.
- Sanitation preferences such as willingness to adopt or pay for a latrine – these are choices that immediately precede sanitation conditions.
- Factors directly manipulated in CLTS interventions such as measures of perceived norms or attitudes may also represent proximate outcomes that immediately precede sanitation conditions if reported as direct consequence of CLTS interventions.

Ultimate outcomes:

- Measures of faecal exposure along principal transmission pathways (e.g. water quality parameters)
- Health conditions (e.g. diarrhoea prevalence, other diseases and mortality and morbidity thereof; anthropometric parameters; prevalence of human pathogens etc.).
- Non-health consequences (e.g. learning outcomes, cognitive development, school absence, gender inequality etc.).

Other outcomes typologically different from the categories above (including unintended adverse effects) will also be considered.

Study designs

To examine the effectiveness of CLTS interventions the quantitative experimental, quasi-experimental, and observational studies which will satisfy our appraisal criteria will be considered.

To identify factors that influence implementation and results of CLTS, primary studies applying quantitative, qualitative, and mixed methods will be considered.

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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

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: Josef Novotny
- Systematic review methods: Jiri Hasman
- Statistical analysis: Jiri Hasman, Josef Novotny
- Information retrieval: Jiri Hasman, Martin Lepic, Vit Boril

Funding

We have secured funding for the period 2015-2017 from the Czech Science Agency. We will seek another funding for 2018 onwards. We should submit an article based on this review to a good-quality academic journal during 2018.

Potential conflicts of interest

The authors declare no potential conflict of interest

Preliminary timeframe

Note, if the protocol or review is not submitted within six 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: Feb 2018
- Date you plan to submit a draft review: End of 2018