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**EQUITABLE AND SUSTAINABLE WASH SERVICES:
FUTURE CHALLENGES IN A RAPIDLY CHANGING WORLD**

Do rural water supply interventions contribute to gender and social equality? a mixed methods systematic review

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Background

Awareness of inequalities in WASH services based on geographical location, socio-economic status, gender, disability and other social factors^[1] has resulted in implementation of WASH interventions that include mainstreaming of gender and social equality (GSE) considerations. WASH practitioners argue that such interventions will result in services that meet the needs of different groups, as well as challenge unequal power relations in society^[2]. For instance, more easily accessible water sources is thought to increase economic opportunities, as well as decrease risk of violence associated with water collection^[3]. Addressing gender relations within WASH interventions has also been shown to improve women's self-confidence in intra-household relations^[4], and participation in society, such as community-level decision-making^[5]. Despite the wide range of GSE outcomes thought to be associated with WASH interventions, evidence of this link is often anecdotal, based on assumptions, or reported only in the grey literature. Funding agencies, governments, civil society organizations and academia alike have placed a greater emphasis on rigorous evaluation of technical and health outcomes of WASH interventions. A lack of attention to GSE outcomes in WASH monitoring and evaluation, or development of validated tools to measure them^[6] has translated into knowledge gaps of if and how WASH interventions contribute to gender and social equality. Despite these challenges it is important to understand what kind of interventions are most often associated with GSE outcomes, which intervention components contribute to positive impacts on GSE outcomes, as well as which interventions may lead or contribute to negative impacts and reinforce inequalities. A comprehensive synthesis and greater availability of scientific evidence of GSE outcomes resulting from WASH interventions is therefore needed to support WASH intervention design, implementation, and evaluation.

Objectives

This review aimed to a) comprehensively and transparently synthesise evidence on gender and social equality outcomes in complex WASH interventions, including rural water supply; b) develop and test a set of hypotheses about causal relationships between WASH intervention components and outcomes; c) map definitions of different outcome measures; d) advance evaluation practices in the WASH sector by providing methodological guidance on how to include, assess and measure GSE outcomes.

Methods

We conducted a mixed methods systematic review of the literature following Campbell Collaboration policies and guidelines^[8]. Qualitative, quantitative and mixed method primary research published in English, Spanish and French, conducted in low- and middle-income countries was eligible for this review. All types of study

participants (including different gender and social identities), all types of WASH interventions from both rural and urban settings and any type of GSE outcomes were eligible for this review. The review included a multi-pronged search strategy. First, we searched for literature in English in 16 bibliographic databases and platforms (using subscriptions of Stockholm University) including Web of Science Core Collections, PubMed, WHO Global Health Library, Econlit and others. Second, we searched Google Scholar and 54 organisational websites in English, Spanish and French. Finally, we screened bibliographies of relevant reviews. Following initial consistency checking exercises, screening was conducted at two levels: title and abstract, and full text. Data was extracted and synthesised. Here we present a selection of review findings relevant for rural water supply interventions.

Preliminary results and conclusions

The review is currently ongoing and we report emerging results on a wide range of GSE outcomes measured in rural water supply interventions, including time use, educational and productive opportunities, and participation. We will present outcomes in terms of inclusive and transformative categories, mapped to a novel theory of change that describes how rural water supply and other WASH intervention components contribute to addressing gender and social equality. Inclusive outcomes relate to services that meet needs of specific social groups (e.g. toilets in schools), while transformative outcomes relate to social norms and power relations and are less commonly evaluated, (e.g. empowerment). Overall, we will highlight evidence on gaps related to inadequate reporting of gender and social equality outcomes in evaluation of WASH interventions. We will discuss the implications of these evidence gaps for policy and practice in the WASH sector and “leaving no one behind” approach. The findings will be of use for researchers, funders and decision makers in policy and practice, supporting more effective WASH and water supply intervention designs, allowing for gender and social equality mainstreaming.

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