

A Study Within A Review: Comparing the Characteristics, And Assessing The Additional Impact Of Grey Literature Studies, On A Systematic Review And Meta-Analysis Of Approaches To Promote Handwashing And Sanitation Behaviour Change In Low And Middle-Income Countries

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Background: Grey literature can broaden the evidence base, minimise publication bias and highlight ongoing research but its inclusion could cause doubt, as it may lack peer review, and efficient search strategies can vary by topic and are labour intensive. Searching databases and grey literature sources yielded studies for inclusion in a handwashing and sanitation behaviour change systematic review. The study aimed to compare the included grey literature, to database studies.

Methods: A “Study within a Review” methodology was used which involved conducting a study nested within an ongoing systematic review, on a question related to the subject matter and content, but different to the review question. For the review, studies for inclusion were obtained from 12 databases and 24 websites. Studies from each source were compared for their characteristics, time spent on screening, and risk of bias, using Cochrane and CASP tools. Certainty of evidence was assessed using GRADE. Sensitivity analyses were performed where possible.

Results: Ten (14.28%) of 70 included studies were from grey literature sources, conducted

mostly in Africa and Asia, taking more time per study to search, screen and extract data as compared to database studies. A moderate risk of bias was seen in 66% (n=4) of quantitative grey literature studies, with one low and one critical, compared to database studies with 22% serious and 8% critical, risk of bias. Two qualitative grey literature studies had CASP-scores of <8/10. Using GRADE; 18 studies had low, 8 moderate (50% from grey literature) and 8 very low level (50% from grey literature) certainty of evidence, across 11 outcomes. Sensitivity analyses were not possible for quantitative studies; sensitivity analysis exploring the impact of including low quality studies in a qualitative deductive synthesis showed negligible impact.

Conclusions: Despite a relatively small yield and longer time spent screening, grey literature studies were a valuable additional source of information in a handwashing and sanitation behaviour change systematic review; they add to the body of knowledge and prevent bias and should not be excluded from future reviews.