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COMMENTARY

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Effectiveness of Solar Disinfection Water Treatment Method for Reducing Childhood Diarrhea

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Commentary

The objective of this review was to pool out the available evidence on the effectiveness of solar disinfection water treatment method for reducing childhood diarrhea. Searches were conducted in Medline/PubMed, Scopus, Google Scholar, Cochrane Library databases and reference of other studies published through December 2019. Studies that compare the diarrhea incidence among the intervention group who were exposed to solar disinfection water treatment and the control group who were not exposed to such water treatment were included. The outcome of interest was the change in observed diarrhea incidence, the risk from baseline to post-intervention. Selected studies were critically appraised by two independent reviewers. Effect sizes were expressed as risk ratio, and their 95% confidence intervals were calculated for analysis. We identified 10 eligible studies conducted in Africa, Latin America and Asia that includes 5795 children aged from 1-15 years old. In all identified studies, SODIS reduced the risk of diarrhea in children, and the effect was statistically significant in 8 of the studies. The estimated pooled risk ratio of childhood diarrhea among participants used solar disinfection water treatment method was 0.62 (95% CI: 0.53–0.72). This overall pooled results indicated that the intervention of solar disinfection water treatment was significantly reduced the risk of childhood diarrhea by 38%. In this systematic review and meta-analysis, the intervention of solar disinfection water treatment significantly reduced the risk of childhood diarrhea. However, the risk of bias and marked heterogeneity of the included studies precluded definitive conclusions. Further high-quality studies are absolutely needed to determine whether solar disinfection water treatment is an important method to reduce childhood diarrhea. There are so many ways to determine the disinfection water treatment where the maximum positive value will be taken in consideration to apply the method to reduce diarrhea. Moreover in recent times studies have shown that increase in the cases of diarrhea which leads to more research in this field.

A few investigations utilizing the viability of sun powered purification water treatment strategy for diminishing loose bowels have revealed heterogeneous results, requiring a deliberate audit to give a comprehensive outline of flow proof. Along these lines, the goal of this audit is to pool out the accessible proof on the viability of sun powered purification water treatment technique for lessening youth the runs.

Searches will be directed in PubMed/Medline, Scopus, Google Scholar, Cochrane Library databases, and reference of different examinations distributed through in December 2019. Studies that look at the loose bowels rate among the mediation bunch who were presented to sun based sterilization water treatment and the benchmark group who were not presented to such water treatment were incorporated. The essential result of the investigation is the change in watched looseness of the bowels rate hazard from gauge to post-mediation. Randomized controlled preliminary investigation structures will be incorporated. Chosen studies will be basically assessed by two autonomous analysts. Extricated information will incorporate insights concerning the intercessions, populaces, study techniques, and results of centrality to the survey question and destinations. Impact sizes will be communicated as hazard proportion, and their 95% certainty stretches will be determined for investigation.

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