

Figure S1. Schematic showing the aggregation of studies based i) fraction type, ii) sample collection location and iii) case type reported by study. Two entries are included for Ahmed, W et al. and Kitamura, K et al. as these studies report data for multiple fractions. Studies are listed only if two or more studies fall within the same group.

* Baldovin, T et al. and Goncalvez, J et al. reports only qualitative data.

** Cases are reported. However no information was available to allow for normalization of daily cases by population size.

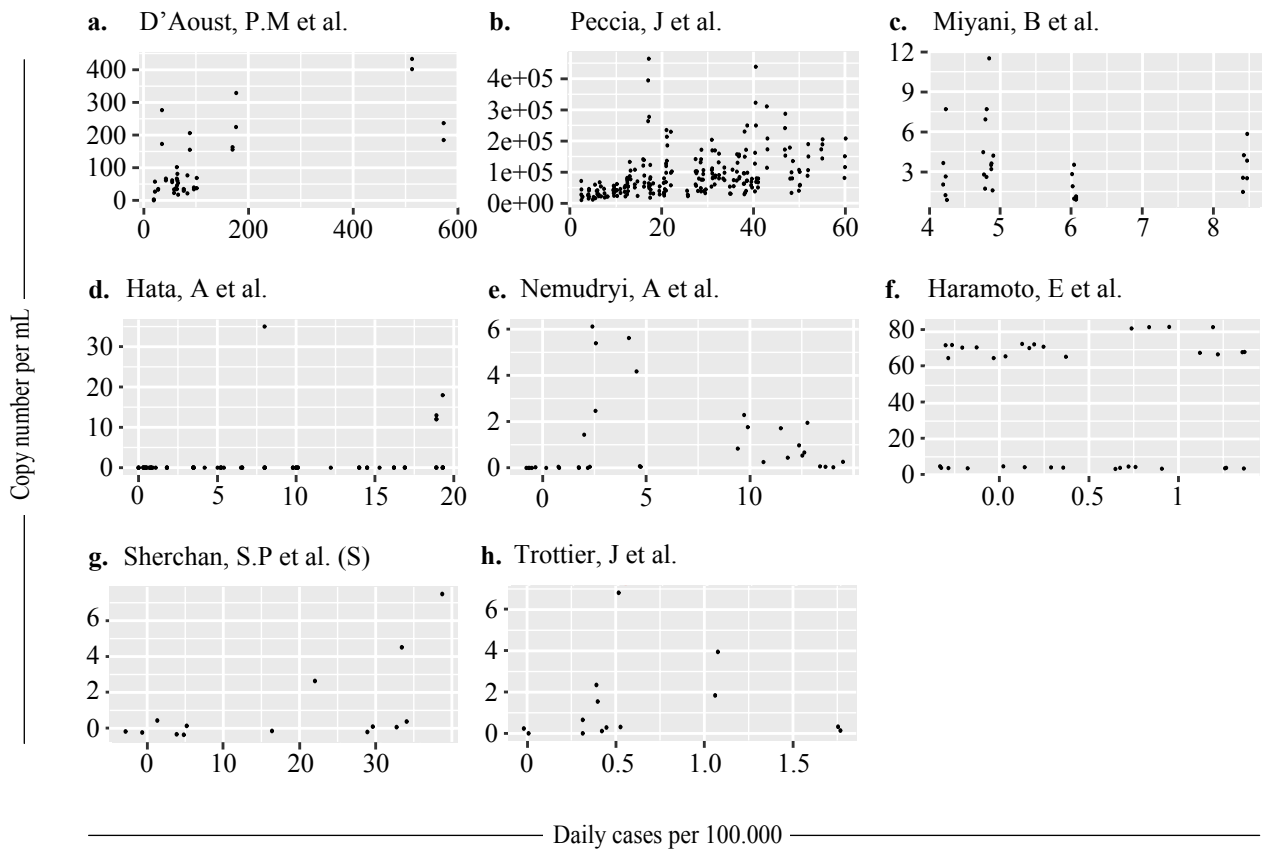


Figure S2. Individual correlations (per study) of SARS-CoV-2 measurements in wastewater with daily COVID cases reported. Daily cases are normalized by population size and reported as cases in 100.000 inhabitants. Only data for supernatant fraction (S) in Sherchan, S.P. et al. is presented, as supernatant and suspended solids fraction did not show positive results for SARS-CoV-2.

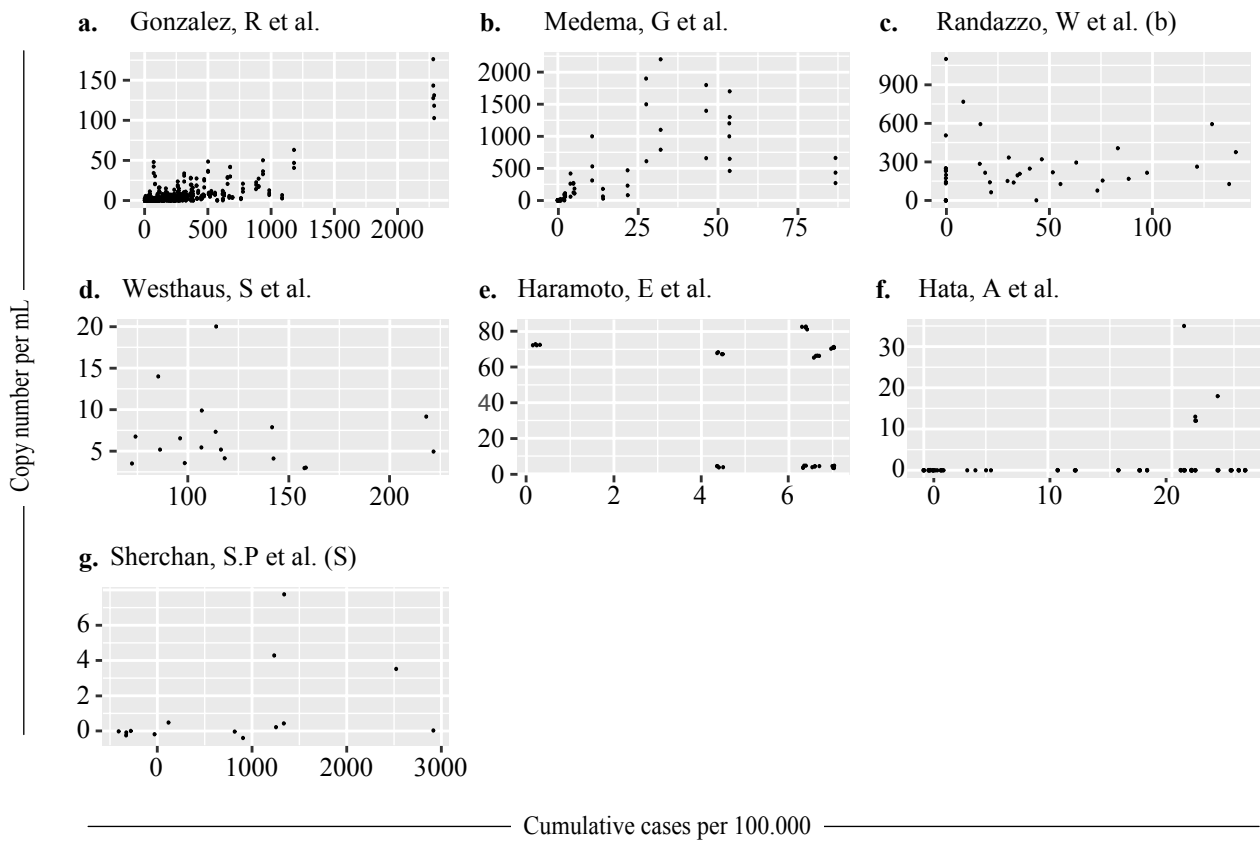


Figure S3. Individual correlations (per study) of SARS-CoV-2 measurements in wastewater with cumulative COVID cases reported. Cumulative cases are normalized by population size and reported as cases in 100.000 inhabitants. Only data for supernatant fraction (S) in Sherchan, S.P. et al. is presented, as supernatant and suspended solids fraction did not show positive results for SARS-CoV-2. Data for Ahmed, W et al. is not presented as only one sample per fraction type was positive for SARS-CoV-2.

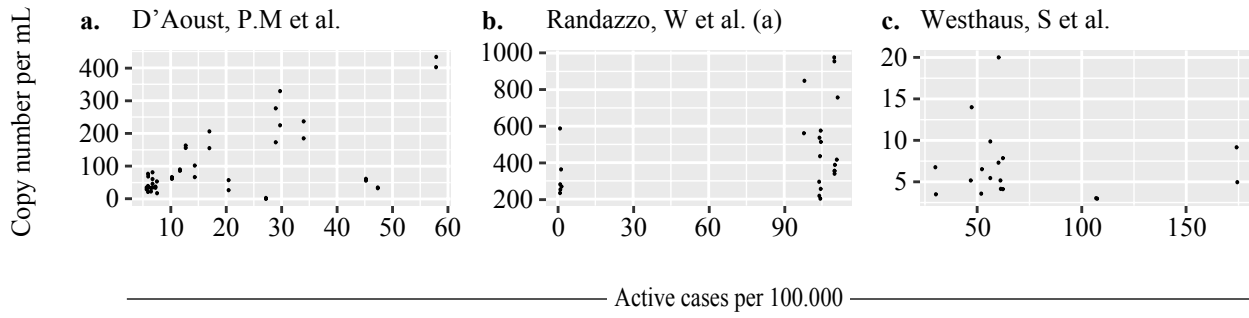


Figure S4. Individual correlations (per study) of SARS-CoV-2 measurements in wastewater with active COVID cases reported. Active cases are normalized by population size and reported as cases in 100.000 inhabitants.

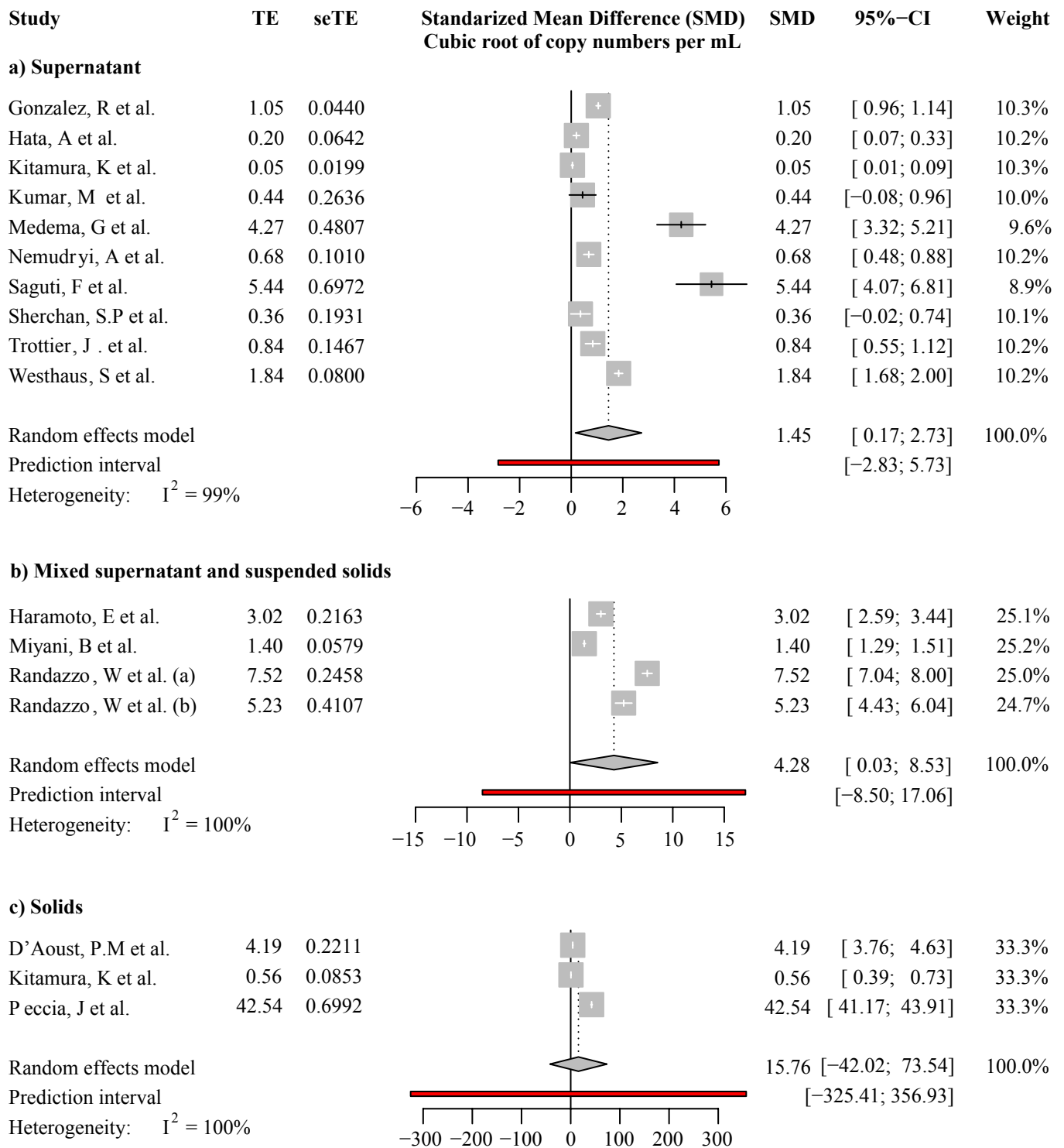


Figure S5. Forest plot of selected aggregations reporting weighted means of SARS-CoV-2 titers in wastewater after cubic root transformation. Pooled estimates for (a) all studies analyzing supernatant/filtrates (b) all studies analyzing mixtures without pre-processing, and (c) all studies analyzing solids. The forest plot includes data from all studies that reported SARS-CoV-2 titers as copy numbers per unit volume. CI-confidence interval.

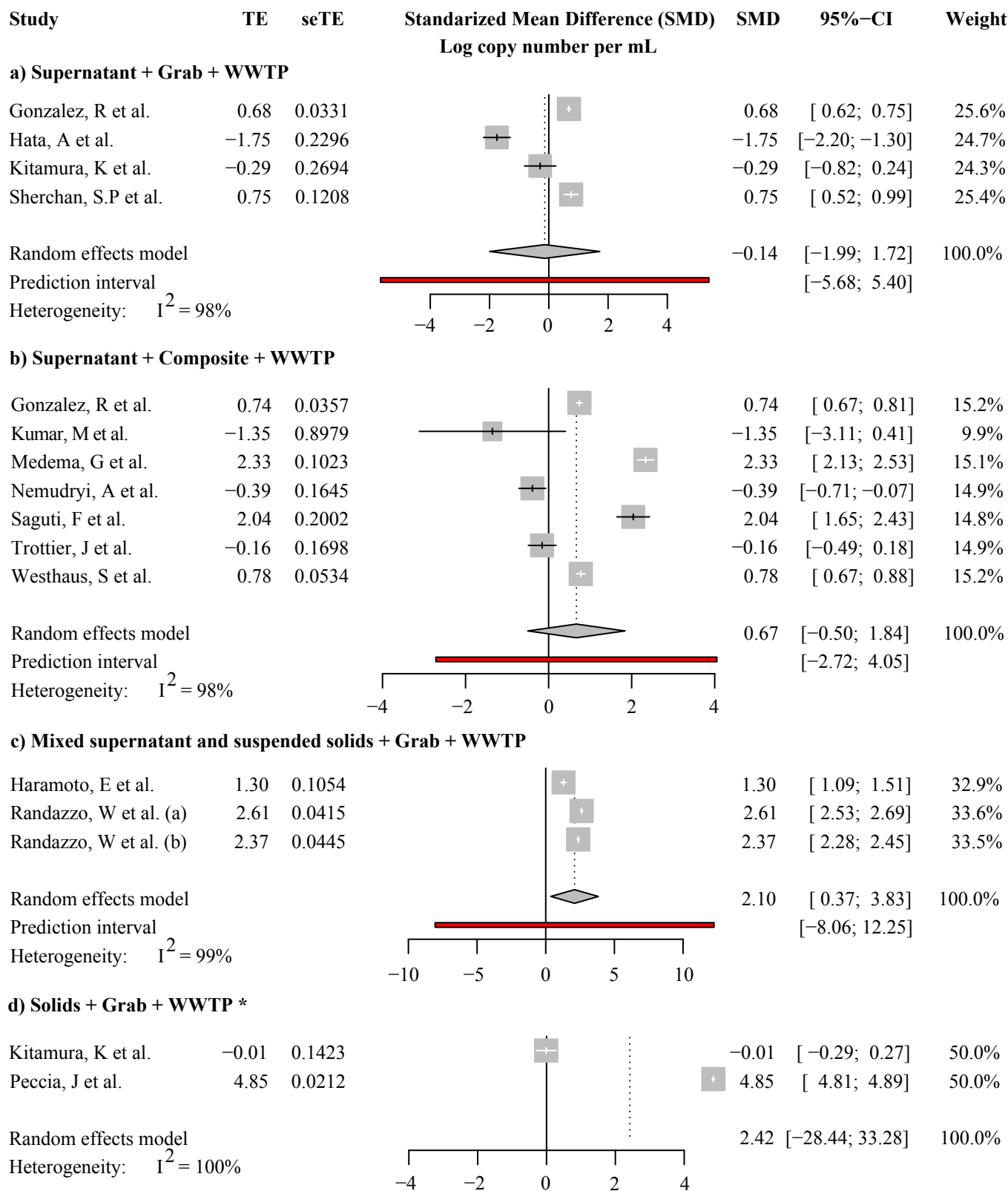


Figure S6. Standardized mean difference of SARS-CoV-2 log copy numbers per mL of wastewater. Studies are grouped based on fraction type and location of sample collection. Five studies are not included in the forest plot. These are: i) Graham, K et al. data is not presented as this study uniquely reports SARS-CoV-2 levels per unit of mass, ii and iii) Goncalvez, J et al. and Baldovin, T et al. reports only qualitative data for SARS-CoV-2 measurements in wastewater (quantification cycle for qPCR), and iv and v) Ahmed, W et al. and Sherchan, S.P et al. as these studies reported only two samples with a positive result for the detection of SARS-CoV-2 for the respective sample groupings. Kitamura, K et al. examined SARS-CoV-2 levels in both, solids and supernatant and suspended solids samples. Values for each type of sample are presented in the relevant group. Scales between fraction groups differ. * Prediction interval can not be calculated for two studies.

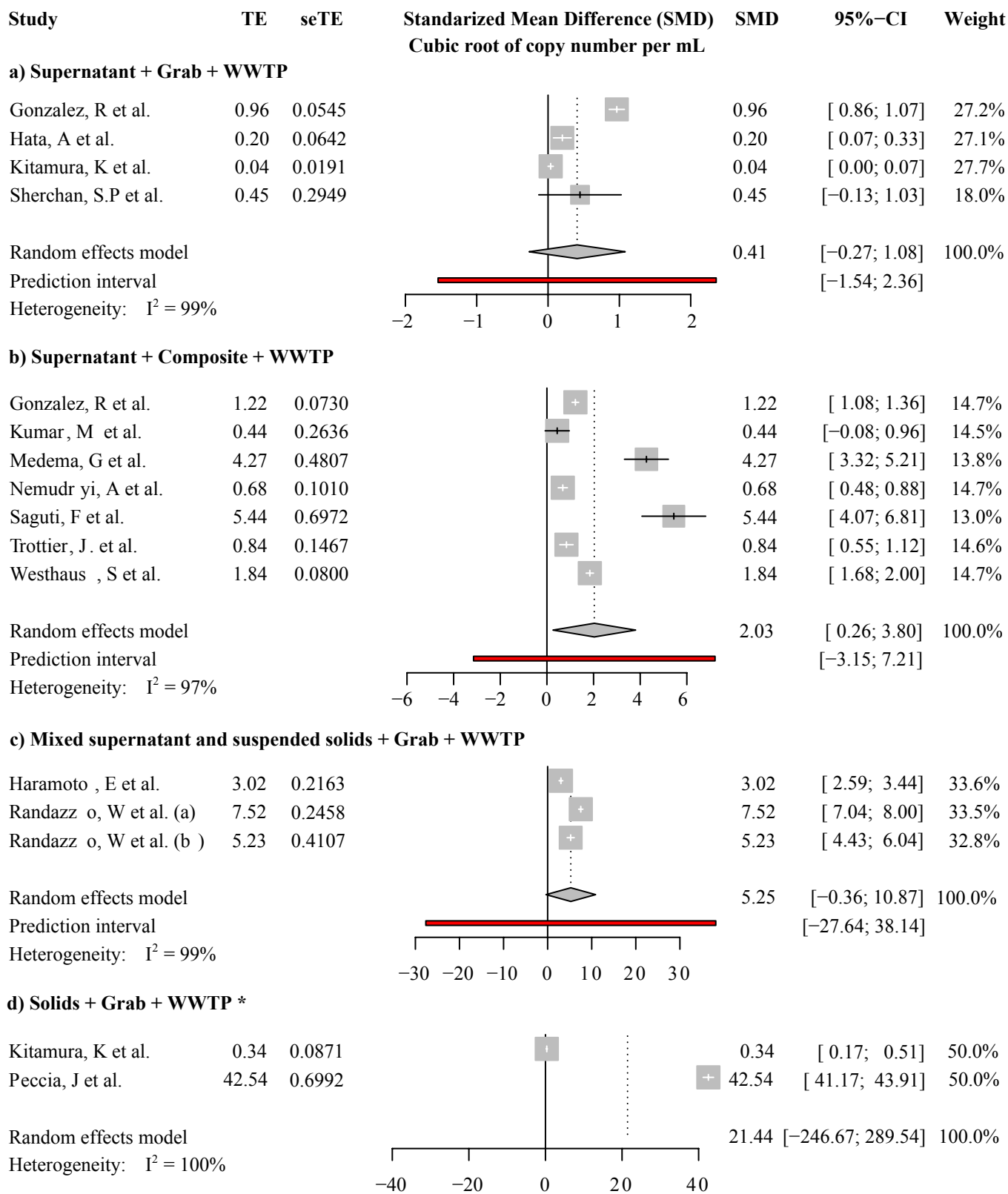


Figure S7. Standardized mean difference of SARS-CoV-2 cubic root of copy numbers per mL of wastewater. Studies are grouped based on fraction type and location of sample collection. Five studies are not included in the forest plot. These are: i) Graham, K et al. data is not presented as this study uniquely reports SARS-CoV-2 levels per unit of mass, ii and iii) Goncalvez, J et al. and Baldovin, T et al. reports only qualitative data for SARS-CoV-2 measurements in wastewater (quantification cycle for qPCR), and iv and v) Ahmed, W et al. and Sherchan, S.P et al. as these studies reported only two samples with a positive result for the detection of SARS-CoV-2 for the respective sample groupings. Kitamura, K et al. examined SARS-CoV-2 levels in both, solids and supernatant and suspended solids samples. Values for each type of sample are presented in the relevant group. Scales between fraction groups differ. * Prediction interval can not be calculated for two studies.

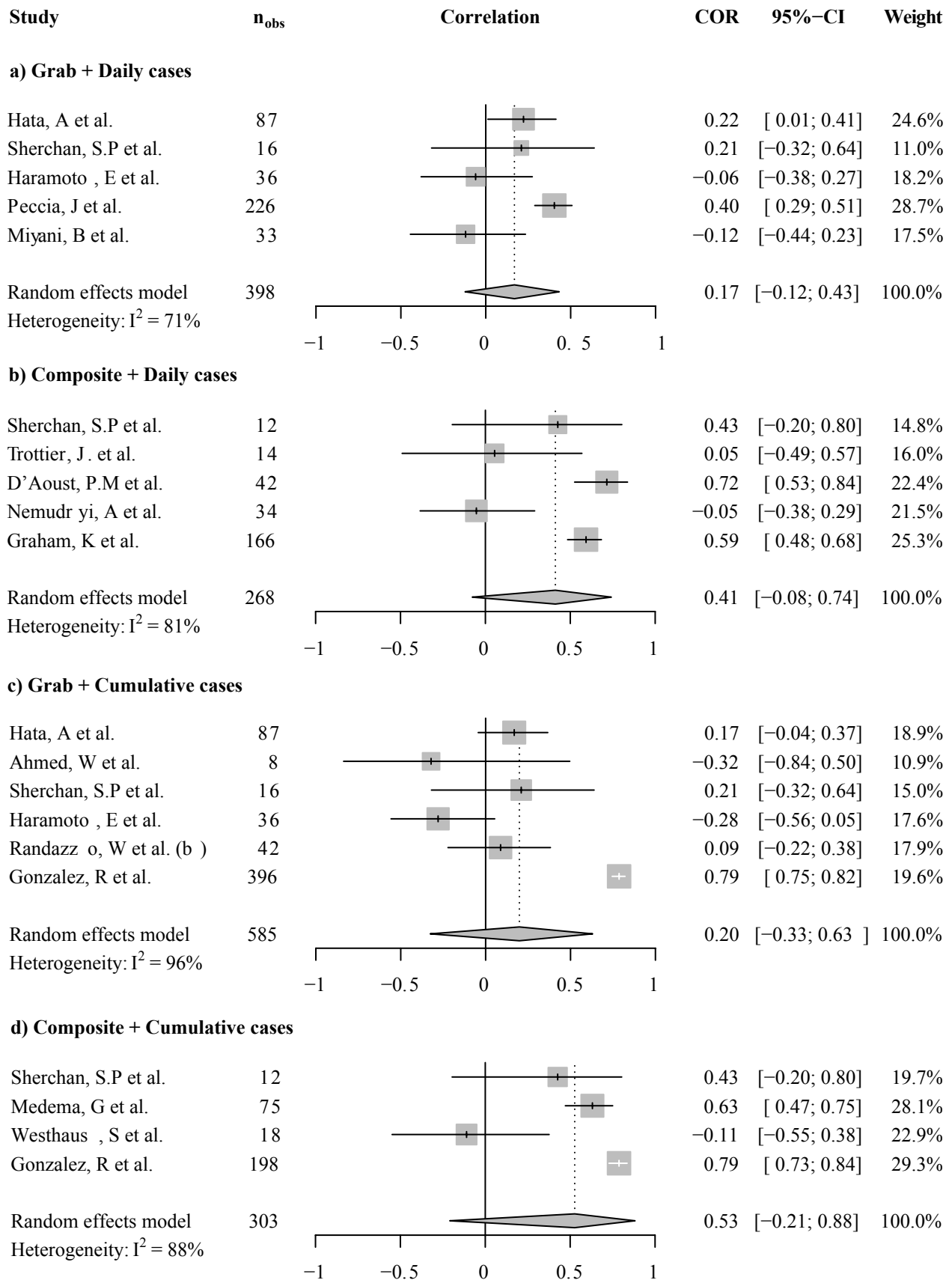


Figure S8. Forest plot of selected aggregation reporting Pearson correlations between SARS-CoV-2 viral RNA levels in wastewater samples and cases (i.e., daily cases and cumulative cases). Pooled estimates of correlation for studies utilizing (a) grab samples and reporting daily cases (b) composite samples and reporting daily cases (c) grab samples and reporting cumulative cases, and (c) composite samples and reporting cumulative cases.