Supplementary material

Description of moderator analysis in random effects model

A random effects model generates information about the extent to which moderators influence the true effect sizes[1], and the extent to which moderator variables explain variation between studies and thus account for heterogeneity in the overall effect size. For categorical moderators, studies are categorised based on a particular characteristic (i.e. type of new-media), and all effect sizes falling in to a particular category are analysed together. If the effect size for a category of effects is significant, and is homogenous, this characteristic is said to account for heterogeneity in the overall effect size, i.e., it explains why there are discrepancies in the size of effects included in the meta-analysis.

Description of publication bias using the Fail Safe N and Duval and Tweedie’s Trim and Fill

Publication bias refers to the phenomenon that non-significant studies may be missing from the analysis because they are not published. The Fail-safe N procedure estimates the number of studies with non-significant effects that would need to be included in the analysis to nullify the observed effect. A larger Fail-safe N is desirable[2].

Duval and Tweedie’s The Trim and Fill method accounts for ‘small study’ effects[3]. Small study bias refers to the tendency for studies with small sample sizes but significant results to be included in published data sets, whereas studies with small sample sizes and null effects are less likely to be published. The inclusion of studies with small sample sizes and disproportionately large effects that are not
evenly distributed around the observed effect size may skew the effect size. The Trim and Fill method removes these small studies and ‘fills’ the distribution with hypothetical studies to revolve the uneven distribution. To the extent that the averaged corrected effect size remains unchanged after the application of the Trim and Fill, evidence exists that the sample of studies is unaffected by the small-study bias[4].


Table 1 List of search terms included in search strategy

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