Appendix E – Exploration of heterogeneity between the studies included for meta-analysis

Sensitivity analyses were performed to explore the robustness of the effect estimate and its heterogeneity. The meta-analysis was repeated excluding studies with a high risk of bias or a medium risk of bias assessment in any domain other than “Selection of reported results”. The effect estimate increased (0.31, 95% CI: 0.15-0.47, p < 0.001), but heterogeneity remained practically unchanged ($I^2 = 72\%$, $x^2(25) = 88.87, p < 0.001$). Next, influence analyses were performed by repeating the meta-analysis while leaving one study out of each iteration and examining the influence of each separate study. The effect estimate varied between 0.26-0.31 in all iterations. Omitting either Ilgen, Talebian et al., or Thompson et al. decreased heterogeneity the most, to around $I^2 = 64-66\%$. The influence analysis additionally identified Costa Filho et al., Lambe et al., and Martinez-Franco et al. as influential studies. Removing all influential studies reduced the effect estimate (0.22, 95% CI = 0.15-0.29, p < 0.001) and removed heterogeneity ($I^2 = 0\%$, $x^2(22) = 16.64, p = 0.783$).

Martinez-Franco et al., Talebian et al., and Thompson et al. seemed to differ from the other studies: their participants had received training with the intervention directly before measuring diagnostic accuracy in the intervention group. Exclusion of these studies is discussed in the Main analysis section of the manuscript. The heterogeneity in the remaining studies by Costa Filho et al., Ilgen et al., and Lambe et al. can likely be partially attributed to statistical heterogeneity: for example, Ilgen et al. and Lambe et al. have negative effect estimates with a relatively large study weight. These characteristics set the studies apart from the average included study, but do not warrant exclusion.
References


