Abstract:

There are many advantages to individual participant data meta-analysis which combines data from multiple studies. These advantages include greater power to detect subgroup effects, increased sample heterogeneity, and the ability to perform more sophisticated analyses. However, a fundamental challenge is that it is unlikely that all the studies to be combined use the same measure for the construct of interest. We propose that this situation can be viewed as a missing data problem and use multiple imputation to fill in missing measurements. We apply our method to 5 longitudinal adolescent depression trials where 4 studies used one depression measure and the fifth study used a different depression measure. None of the 5 studies contained both depression measures. We make use of external information in order to produce more accurate imputations and present diagnostics to check the quality of the imputed data. Our method allows for analyses to be conducted on the same depression measure across all 5 trials.