

Meta-Analysis

Frequentist Random Effects Results

Alan Ho

Abstract

Using Bayesian hierarchical (random effects) models for the meta-analysis with various priors for the heterogeneity parameter τ , it was found that there was a significant treatment effect for depressive symptoms (mean = 0.97, 95% CI), anxiety (), and worry symptoms. However, there was substantial heterogeneity present specifically in the depressive symptoms subgroup where τ was estimated to be between 0.58-1.12 where $\tau > 0.5$ is considered substantial. In short, as with the frequentist meta-analysis results, the treatments did appear to have an effect but there is much uncertainty surrounding the treatment effect size though the 95% credible interval suggests that this effect might be at least what Cohen would indicate as medium (e.g. 0.39-0.41 found for Bayesian and Frequentist results), In terms of estimate shrinkage, there is Bevan et al. is most affected where their reweighted effect size is more than halved.

Contents

List of Figures

List of Tables

```
# setwd('..')  
print(getwd())
```

```
## [1] "C:/Users/uqaho4/Desktop/perinataldep2019/perinataldep2019/R"
```

```
dir(getwd())
```

```
## [1] "effect_sizes.R"  
## [2] "forest_plot.R"  
## [3] "frequentist.R"  
## [4] "functions.R"  
## [5] "funnel_plot.R"  
## [6] "meta_analysis_report.html"  
## [7] "meta_analysis_report.nb.html"  
## [8] "meta_analysis_report.pdf"  
## [9] "meta_analysis_report.Rmd"  
## [10] "REPORT-frequentist-results-2019-08-10.pdf"  
## [11] "REPORT-frequentist-results-2019-08-10.Rmd"
```

```
dir(file.path(getwd(), 'R'))
```

```
## character(0)
```

```
# source('frequentist.R')
```