|  |  |  |  |
| --- | --- | --- | --- |
|  | W06 Ex. 4 | W06 Ex. 3 | W05 Ex.1 |
| Framework | Bayesian | Bayesian | Bayesian |
| Purpose | Random-effects meta-analysis | Random-effects meta-analysis | Random-effects meta-analysis |
| Data | accommodates treatment and placebo data | accommodates treatment and placebo data | does not accommodate treatment data, only placebo |
| Transformation of data | models number of responders as binomially distributed with study-specific pj and nj | models log-odds as normally distributed | models log-odds as normally distributed centered around study-specific θj with study-specific precision prec\_s |
| Priors | uniform priors for µ, β, and τ | - normal prior for µ  - halfnormal prior for τ | - normal prior for µ  - gamma prior for prec\_tau |
| Random effects | study-specific pj are transformed into log-odds and modeled as a linear regression µ + β\*cj + ηj , study-specific error terms ηj are modelled as normally distributed around 0 with precision τ.prec | - study-specific effects are normally distributed around µ | random effects θj are normally distributed, centered around the global effect µ with precision prec\_ τ |
| PPC | included | not included | not included |
| Output | - predictive distributions of placebo response rate p1.star and treatment response rate p2.star; which are derived by back-transforming the log-odds onto a probability scale  - posterior distributions of µ, β and τ | - posterior distributions of τ, µ and θ | predictive distribution of placebo response rate, which is derived by back-transforming the log-odds θ ~ N(µ, prec\_τ) onto a probability scale |
| Normal parameterization | mean, precision | mean, standard deviation | mean, precision |
| Ease of use | requires more coding | easier to apply | requires more coding |