**Supplementary file 3**

**Notations of statistical models used in this study (results of these models are in Supplementary file 1)**

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| --- | --- |
| Fromula | Variance components (normally distributed with the mean of 0 and given values |
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denotes the *i*th effect size, is the intercept, and are regression coeffects, is the kth country, is the *j*th state code and is the *i*th effect size, and z(ln(checklist duration)), Sampling-variance and log10(range size) are fixed effects (predictors; see Method).