Random-effects meta-analysis

Random-effects meta-analysis is a statistical technique used in meta-analyses to combine the results of multiple studies that measure the same effect or outcome. In a random-effects meta-analysis, it is assumed that the true effect size of the intervention being studied varies across studies due to differences in study design, population characteristics, and other factors.

In contrast to fixed-effects meta-analysis, which assumes that the true effect size is the same across all studies, a random-effects meta-analysis allows for some degree of variability in the effect size estimates across studies. This variability is modeled using a normal distribution, which takes into account both within-study and between-study variance.

The main advantage of random-effects meta-analysis is that it can provide a more conservative estimate of the true effect size, as it takes into account the heterogeneity and variability in the results across studies. This can be particularly useful in cases where there is substantial variability in the study populations, interventions, or outcome measures being used.

However, it is important to note that random-effects meta-analysis requires a larger number of studies than fixed-effects meta-analysis to achieve sufficient statistical power. Additionally, the assumptions underlying the random-effects model may not hold true in all cases, and the results of the meta-analysis should be interpreted with caution and in the context of the specific research question being addressed.

From:
https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link:
https://neurosurgerywiki.com/wiki/doku.php?id=random-effects_meta-analysis

Last update: **2024/06/07 02:51**