

MATTERS ARISING

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# Comment on “Empirical comparisons of heterogeneity magnitudes of the risk difference, relative risk, and odds ratio”

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I am writing regarding the article “Empirical comparisons of heterogeneity magnitudes of the risk difference, relative risk, and odds ratio” by Zhao et al. (*Systematic Reviews*, 2022;11:26). This study makes a valuable contribution to the field of meta-analysis by providing empirical evidence about the comparative behavior of different effect measures. The finding that approximately half of the analyzed meta-analyses show low heterogeneity is particularly important for researchers conducting meta-analyses, as it helps inform methodological choices and interpretation of results.

However, I identified some numerical inconsistencies that I believe warrant clarification to ensure the accurate interpretation of these important results.

First, regarding Table S2 in the Supplemental File, I noticed that the sum of meta-analyses across the three categories ( $I^2 = 0\%$ ,  $0\% < I^2 \leq 1\%$ , and  $I^2 > 1\%$ ) does not equal the total number of analyzed meta-analyses (64,929) for any of the models or effect measures. This discrepancy may affect the interpretation of the proportion of low-heterogeneity meta-analyses in practice.

Second, I carefully reconstructed the histogram data for meta-analyses with  $I^2 > 1\%$  shown in Fig. 2A using the Degitizit software. For the relative risk measure, I found that the number of meta-analyses was 21,776 under the REML method and 21,875 under the DL

method. However, Table S2 in the Supplemental File reports different numbers: 37,607 for REML and 37,020 for DL. Understanding the source of this difference would be valuable for researchers who wish to build upon these findings.

I would appreciate if the authors could help clarify these numerical discrepancies. Their clarification would strengthen the utility of these important findings for future research and meta-analytic practice. The resolution of these questions would be particularly valuable for those who are conducting research on heterogeneity patterns in meta-analyses.

I thank the authors for their significant contribution to our understanding of heterogeneity measures, and I look forward to their response, which will help ensure the accurate application of their findings in future research.

#### Authors' contributions

The author read and approved the final manuscript.

#### Declarations

#### Competing interests

The authors declare no competing interests.

Received: 14 April 2024 Accepted: 2 January 2025

Published online: 27 March 2025

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