




CORRESPONDENCE

Methodologic lessons from published systematic reviews

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Eye (2023) 37:3876; <https://doi.org/10.1038/s41433-023-02599-5>André Ferreira ^{1,2,3,5}✉, Rafael José Vieira^{3,4,5} and Bernardo Sousa-Pinto^{3,4}

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TO THE EDITOR:

We read with interest two systematic reviews with meta-analysis [1, 2] recently published in your Journal on the role of Optical Coherence Tomography Angiography (OCTA) for assessment of retinal microvasculature in Parkinson's Disease. Although the conclusions were quite similar, some methodological differences can be highlighted, allowing to reflect on the role and consequences of methodological practices in the meta-analytical context.

Regarding the selection process, Katsimpris et al. [1] excluded studies classified as low quality as assessed with the Newcastle-Ottawa Scale (NOS). In their case, no studies were classified as such and therefore excluded. In spite of being an acceptable option, the authors could have instead opted for performing a sensitivity analysis excluding low-quality studies from the meta-analysis or a subgroup analysis according to risk of bias, as that would allow to understand the effect of studies' methodological quality on meta-analytical results. On the other hand, Salehi et al. [2] included only "peer-reviewed original research", therefore excluding grey literature. As consequence, one abstract [3] was discarded from this work which was included in the article by Katsimpris et al. [1].

Regarding the meta-analysis, both studies found high heterogeneity (>70%) when pooling all studies together. Salehi et al. [2] did not present the overall forest plot and conducted a meta-regression and subgroup analysis, demonstrating that the main factor contributing to heterogeneity was the device used. Katsimpris et al. [1] conducted a meta-analysis using the Hartung-Knapp/Sidik-Jonkman random-effects method. That is recommended in cases of expected high heterogeneity and small number of studies as it allows for obtaining wider confidence intervals and more conservative p-values [4]. However, strategies to identify heterogeneity sources were not implemented. In cases of high heterogeneity, identifying variables potentially explaining heterogeneity is particularly relevant. Often, in the meta-analytical context, the best solution for the research question may not be one single meta-analytical pooled value, but rather several values according to different participants' or studies' characteristics. In the authors' opinion and experience, a subgroup analysis by OCTA device must always be performed, as a standardised and reproducible quantification of OCTA parameters between devices is still lacking.

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AUTHOR CONTRIBUTIONS

AF and RJV conceived the idea for the letter; AF, RJV and BSP wrote and critically reviewed the letter.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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