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LETTER TO THE EDITOR

Meta-research in geriatric medicine: tips from an associate editor

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Systematic reviews and meta-analyses should be considered the top of scientific evidence. [1] Therefore, the interest of scientific community in meta-research is increasing, even if many published works can be considered redundant, paradoxically increasing the limitations of original studies, rather than critically synthetize them [2]. This consideration may be applied to geriatric medicine [3], since the interest in meta-research (i.e., the part of scientific research regarding systematic literature reviews, meta-analyses, umbrella meta-analyses, network meta-analyses and similar) from geriatricians and health personnel dedicated to older people is rapidly increasing [4].

As associate editor for Aging Clinical and Experimental Research (ACER), I received about one–two systematic reviews per week. This figure further increased during the COVID-19 epidemic. Even if the works published by ACER are revised by two or more independent reviewers and by myself, I decided to write a letter summarizing the most common issues that I found during my activity and for giving some practical indications (tips), to further increase the quality of systematic reviews sent to ACER, as recently shown by some paper in this direction [5–8].

The first tip that I can give is to carefully check if the same or a similar work is already present in the literature. This is, in fact, the first thing that I do when I receive a work (i.e., I simply copy and paste the title of the review submitted in the most common databases). Moreover, in the title, as indicated by the PRISMA statement [9], please remember to indicate if it is a systematic review and/or meta-analysis; this must be reported already at the title level and not only in the manuscript. In my experience, I would like to remember that, often, abstracts are not fully informative during the first submission to ACER. Again, we have PRISMA indications specific for abstracts that can help to better identify the main findings of the work and to detail the relevant methodological aspects. Finally, moving to the introduction part, I warmly suggest to report the aim having in mind the PICO(S) question (participants; interventions, if any; comparison; outcomes; study design).

I would like to spend some more words regarding the methods. First, remember to mention if a protocol exists and if was registered: this is an indication of the transparency of the work. If not registered, it would be nice to enclose it to the supplementary material. At methodological level, one of the most common issues that I found is the search strategy. Search strategy is an essential part of a systematic review and should reflect the PICO question. Even if I understand that for following these indications, the number of papers to revise could dramatically increase; the search strategy should include all potential eligible papers, for finding a good compromise between sensitivity and specificity of a search strategy; my (sincere) suggestion is to refer to an expert librarian. Regarding the search strategy, other two points are important to remember: first, it should be reported in full at least for one database (consider the supplementary material if too long); second, it should be recent (ideally less than 6 months).

Again, in the Methods section, when reporting that a task was made in double (e.g., data extraction), please remember to put the initials of people doing this task for higher transparency. The quality of studies included must be assessed using validated tools that can vary according to their nature: my tip, it is not to use the shortest tool, but the best among those available.

Furthermore, in the statistical analysis section, consider reporting for systematic reviews why a meta-analysis was not performed. Sentences such as "a high heterogeneity was found" are not permitted and a clear motivation of why a meta-analysis was not proposed, should be reported. Conversely, when reporting the details of statistical analysis, I found some issues in two relevant aspects, i.e., publication bias and heterogeneity. Regarding the first, I suggest using not only funnel plots (that can be included in the supplementary material, if requested), but also appropriate statistical

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tests (such as Egger's test or similar). Regarding heterogeneity, if detected, meta-regression and sensitivity analyses should be proposed for addressing this issue. My recommendation, it is to remember that we are facing with literature regarding older populations. Therefore, some moderators, such as age, prevalence of some common comorbidities (e.g., dementia) or geriatric syndromes (e.g., frailty), disability, number of medications, should be always considered [3]. Finally, in this direction, a good way to present the results is the GRADE system. Every time that it is possible, please remember to use, again for better underlining the strength of the evidence and not only the statistically significant results.

The last tip that I can give, is that we must remember systematic reviews and meta-analyses are the best scientific evidences available and that are often the basis of guidelines that drive our daily clinical practice. Meta-research, as every field of scientific literature, requires to strictly follow some methodological indications to have reliable data. I hope this letter has further increased the awareness to meta-research in geriatric medicine and given some practical tips for the authors sending their works to ACER.

Declarations

Conflict of interest None.

Statement of human and animal rights Not needed.

Informed consent Not needed.

References

1. Stevens KR (2001) Systematic reviews: the heart of evidence-based practice. AACN Adv Crit Care 12:529–538
2. Ioannidis JP (2016) The mass production of redundant, misleading, and conflicted systematic reviews and meta-analyses. Milbank Q 94:485–514
3. Shenkin SD, Harrison JK, Wilkinson T et al (2017) Systematic reviews: guidance relevant for studies of older people. Age Ageing 46:722–728
4. Veronese N, Torbahn G, Demurtas J et al (2020) Interest in meta-research in geriatric medicine: a survey of members of the European Geriatric Medicine Society. Eur Geriatr Med 11:1079–1083
5. Catikkas NM, Bahat Z, Oren MM et al (2022) Older cancer patients receiving radiotherapy: a systematic review for the role of sarcopenia in treatment outcomes. Aging Clin Exp Res. https://doi.org/10.1007/s40520-022-02085-0
6. Abud T, Kounidas G, Martin K et al (2021) Determinants of healthy aging: a systematic review of contemporary literature. Aging Clin Exp Res. https://doi.org/10.1007/s40520-021-02049-w
7. Yeap SS, Tanavalee A, Perez EC et al (2021) 2019 revised algorithm for the management of knee osteoarthritis: the Southeast Asian viewpoint. Aging Clin Exp Res 33:1149–1156
8. Reginster J-Y, Veronese N (2021) Highly purified chondroitin sulfate: a literature review on clinical efficacy and pharmacoeconomic aspects in osteoarthritis treatment. Aging Clin Exp Res 33:37–47
9. Sarkis-Onofre R, Catalá-López F, Aromataris E et al (2021) How to properly use the PRISMA Statement. Syst Rev 10:1–3