

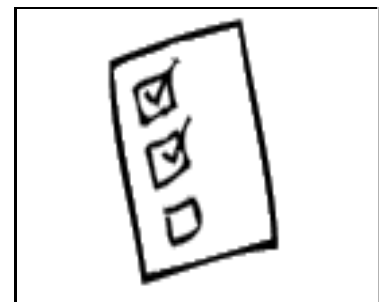
Around meta-analysis (5): Presenting AMSTAR

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It's been a year since Alistair wrote a blog [post](#) presenting PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses . [PRISMA](#) is, basically, a set of guidelines for writing meta-analytical papers. Recently I came across its close relative – [AMSTAR](#), Assessment of Multiple Systematic Reviews.

Both PRISMA and AMSTAR came from medical sciences, where systematic reviews and meta-analysis (I will use these terms interchangeably here, but they are not exactly the same) were established long time before they were introduced into ecological and evolutionary research. Not surprisingly, a large number of medical meta-analyses accumulated to date. Many of them cover similar topics, but they can vary in quality. Assessing existing meta-analyses as unsatisfactory can be used as a rationale for conducting yet another meta-analysis on the same subject. So, there was a need for a tool for such assessment, and that's how AMSTAR came around.

AMSTAR largely overlaps with PRISMA when it comes to what information should be presented in a systematic review. But it consists of only 11 key questions, and they include issues like whether statistics was used appropriately and how the results were interpreted. So, it is more about overall quality of a meta-analytical paper and reliability of the conclusions, than just about the reporting quality.



However, the total score in AMSTAR is strongly linked to reporting quality – to score a point for each of the 11 questions you have to get a clear “yes” from the person assessing you meta-analysis. And you will not get a “yes” unless you not only conducted your meta-analysis following recommended procedures, but also described what you have done explicitly. So, if you don't write down “we included grey literature” (or something with the same meaning), then you will get “no” or “can't tell”, and you loose a point.

Word of caution, a few questions in AMSTAR do not make much sense for most studies in ecology and evolution, at least not yet (e.g. almost nobody registers or publishes their study protocol before starting meta-analysis and we do not deal much with randomized controlled trials and conflicts of interests). Also, some of the questions are not formulated very clearly. They can be interpreted differently depending on the field and expertise of a person doing the marking, as I learned from my experience.

Nevertheless, as meta-analysis becomes increasingly popular in our field, it is time to make the best use of the existing tools in order to improve the quality of our meta-analytical papers. So, I would recommend using PRISMA when writing a meta-analytical paper, and then using AMSTAR to review what was written, in order to get our writing into the best shape possible.

Details

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