[9] Localio AR, Goodman SN, Meibohm A, Cornell JE, Stack CB, Ross EA, et al. Statistical code to support the scientific story. Ann Intern Med 2018;168:828−9.

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Research-on-research studies or methodological studies are primary research

Journal of Clinical Epidemiology has recently published a study of Faggion and Diaz Cavero [1], in which the authors presented types of primary and secondary research. According to the article, secondary research includes two categories—overviews and systematic reviews, whereas primary research includes three categories: human research (e.g., clinical trials, cohort, case series, and so on), animal research, and in vitro research [1]. Although the aim of the study was obviously not to classify all types of research conducted nowadays, this figure glaringly omits classifying the exact type of study that the Faggion and Diaz Cavero [1] have reported in their article. These kinds of studies have been called ''research-on-research'' studies or methodological studies [2], and their purpose is not to collate and summarize existing evidence that is presented in primary study reports; that is, these types of studies are not systematic reviews [2]. Instead, research-on-research or methodological studies use existing evidence, including (but not limited) to published articles or protocol registries, to analyze and create new data that are not related to the original aim of reports that are subject to analysis.

As Gene V. Glass put it in 1976: ''*Primary analysis is the original analysis of data in a research study. Secondary analysis is the re-analysis of data for the purpose of answering the original research question with better statistical techniques, or answering new questions with old data*.'' The data analyzed in methodological studies would not exist without researchers creating them *de novo* from reports that are units of analysis. Therefore, methodological studies about evidence (i.e., research on research) should also be considered primary research and included in classifications of primary research types.

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References

[1] Faggion CM Jr, Diaz KT. Overview authors rarely defined systematic reviews that are included in their overviews. J Clin Epidemiol 2019;109:70−9.

[2] Puljak L. Methodological studies evaluating evidence are not systematic reviews. J Clin Epidemiol 2019;110:98−9.

https://doi.org/10.1016/j.jclinepi.2019.04.013

How can metaresearch be classified?

We would like to thank Dr Puljak for her interest in our article and for providing an interesting point for discussion regarding the classification of the types of primary and secondary research reported in our study.

Dr Puljak suggests that metaresearch (or research on research) should be considered primary research, instead of secondary research [1]. However, the interpretation of the definitions of primary and secondary research may be challenging. For example, some authors suggest that secondary research uses existing data for analysis and/or synthesis, and primary research is an ''activity that generates new, primary data.'' [2]. However, metaresearch generates new data using existing data in the form of published materials (in most cases), resulting in a gray area. For example, a hypothetical metaresearch question on the evaluation of the association between risk of bias and the size of the treatment effect estimates in studies published in systematic reviews might be viewed as a source of new data (primary research), but it uses existing data (secondary research). Cochrane [3] defines ''secondary study'' as ''a study of studies: a review of individual studies (each of which is called a primary study).'' Again, a meta-research study may be considered a ''study of studies'' because it also extracts and evaluates information from primary studies. Thus, metaresearch may be seen as secondary analysis, as the definition ''answering new questions with old data'' [4] suggests.

A figure on primary and secondary research was presented in our article [5] to provide the reader with a chronological scenario about how the data are published (without any hierarchical differences regarding the importance of this research). Primary research is the first published, and secondary research is published posteriorly.

Although the issue on the classification of metaresearch is outside the main scope of our published article, it provides an interesting topic for further discussion within the research methodology community. One could argue that an easier classification for secondary research based on the assessment of what already exists is a more pragmatic approach. We also agree that a metaresearch study is not a classic systematic review on effectiveness or harm of interventions. However, metaresearch is also sensitive to biases; therefore, this type of research should provide a systematic approach to addressing the existing data used to generate new data.

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