Negative data are also worth publishing!

Dear Reader,

Researchers are often disappointed if the outcome of their study is unexpected (the wanted effect was not observed) and even more so when it does not provide a clear answer to the research question(s) initially posed. One always hopes to reach sufficient and reasonable/understandable statistical difference(s) in performance(s) between experimental groups, in order to be able to draw clear conclusions on the study hypotheses tested. Finding clear differences between test groups facilitates writing the "story" of the paper; it will definitely help convince the reviewer and, once published, the reader of the overall scientific impact of the paper in advancement of scientific knowledge.

However, negative and statistically insignificant data that do not enable the authors to reject the null hypothesis are rather often gathered. Unfortunately, these are not usually publicly reported, not even if the study was conducted at the highest research standards also taking into consideration the smallest methodological detail which may have influenced the study outcome. Unsuccessful solutions to problems are indeed seldom published. Writing and publishing a paper reporting on the absence of clear findings or on completely negative data is difficult; no straightforward, attractive story can be written. As a consequence, such papers will not (easily) get through the peer-review process, as reviewers may always find reasons to reject the paper, simply because the research – having resulted in negative data – did not provide sufficiently innovative and definitive findings. Hence, the literature rarely contains papers reporting negative data or even data that contradict general knowledge already abundantly documented.

BUT are such negative data or insignificant results really not worth publishing?

Should the scientific community not be informed on the study approach and consequent negative outcome?

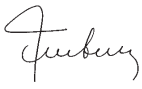
Much can indeed be learned from negative data, which definitely makes publishing them a valid option. The effort invested in conducting such a study may have been tremendous and reporting it may prevent fellow researchers from duplicating this research effort. All research findings need to be confirmed by independent research groups. If data are gathered which negate or cannot replicate the previous findings of other authors, the scientific community deserves to be informed; this reduces the potential positive bias in literature. It can even be considered unethical not to report negative data on the performance of dental products in an attempt to avoid damaging an existing relationship with the manufacturer.

Journals actually exist that focus on negative, unexpected and controversial data, such as the Journal of Negative Results in BioMedicine (JNRBM; https://jnrbm.biomedcentral.com).

As editors of JAD, we strongly believe that negative data also deserve to be published, as long as these negative data are generated by well-conducted experiments based on sound hypotheses. We believe that making both positive and negative data available to the interested scientific community reduces scientific bias.

Sincerely yours,

Bart Van Meerbeek



Roland Frankenberger