

Writing and scientific literature

Discussion

PAULO SALDIVA

Full Professor of the Department of Pathology of the Faculdade de Medicina da Universidade de São Paulo (USP), São Paulo, SP, Brazil – pepino@usp.br

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The discussion is the part of the article where the author faces the challenge of maintaining a balance between knowledge and conciseness. It is important to show the reader the implications of the findings, and, at the same time, not digress significantly from the objective findings. In other words, some level of speculation about the potential of the findings is expected, without, allowing the wings of imagination to lead the text to the ethereal realm of daydreaming devoid of reasoning on the data obtained. Bearing in mind the difficulties outlined above, some suggestions are provided on how to write a discussion.

Initially, it is appropriate to offer an objective and succinct summary of the results in the beginning of the section. For instance, *“The data obtained in this study demonstrate that treatment X showed positive results for the treatment of disease Y. The positive effects observed were consistent and robust when compared to different control procedures, such as X, Y, and Z”*. Soon after this brief review of the results section, it is important to point out the potential implications of the study. For example: *“the findings indicate that, given the circumstances and limitations established in the present study, treatment X has the potential to benefit patients with disease Y, without some of the adverse effects (or at lower cost, in less time, etc.) of the conventional treatments.”*

Subsequently, it is desirable to compare the results obtained with the literature, simultaneously presenting studies that are in agreement and in disagreement. If there are studies that differ from the obtained results, it is appropriate to show the possible reasons for the discrepancy, such as different protocols, treatment regimens, and evaluation methods, among others. It is not fair, or even ethically justifiable, to ignore deliberately the divergent studies. The author should not fail to make clear to the reader how the results of the study contribute to the subject. In other words, the author is in a privileged position to state what is new in the study, and should not avoid pointing it out.

After comparing the results obtained with those pre-existing, it is important to provide the biological foundations that give plausibility to the data. At this point, it is important to include measurements that were conducted to determine the mechanistic basis of observed effects,

and also refer to the existing literature that demonstrates the mechanisms described as responsible for the observed effects. This part of the discussion may be stated as *“The effects observed are consistent with an increase in conductance of the sodium channel, mediated by increased expression of protein Z. Measurements of gene expression of the gene that controls protein Z expression (Figure XX) support this hypothesis. In a study performed in rodents, Doe et al. (reference) have shown similar effects.”* This part of the discussion - the explanation of the mechanisms responsible for the observed effects - is prone to hyperbolic statements, i.e., arguments, which, albeit plausible, are not supported by the results. So, dear reader, be careful about this part!

In the discussion section, it is important to state clearly the limitations of the study. For example, the author cannot avoid discussing the weaknesses of the study, such as sample size, lack of complementary measures that would help prove the tested hypotheses, inconsistencies with previous studies, and other issues that deserve comment. An objective acknowledgement of the study's weaknesses does not affect its acceptance; on the contrary, it demonstrates the knowledge the individuals performing the study have on the subject, and their integrity. Therefore, do not attempt to ignore the study weaknesses. The study's reviewers are, as a rule, experts on the subject, and they will point out the deficiencies of the work being reviewed.

Finally, an elegant way to finish the discussion is to provide a summary of the conclusions that are allowed in light of the obtained results and on the same opportunity. For instance, *“In brief, the present results support the concept that treatment X has positive effects on disease Y, indicating that this approach is an additional alternative for patient management. If confirmed, the treatment used in this study opens new therapeutic perspectives for the control of an extremely important condition in terms of public health.”*

One last comment: the “rules” above do not necessarily represent the absolute truth. They reflect only the experience of someone who frequently writes and reviews scientific works. I sincerely hope that this text will be of some help for new researchers.

Good luck!