Reviewer's report

Title: A bibliometric search of citation classics in anesthesiology

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Reviewer: Dylan Bould

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Discretionary Revisions

This is an interesting and worthwhile descriptive study of “citation classics” in anesthesiology.

The methods are generally thorough, appropriately aiming to identify papers in both the subspecialty literature and the higher impact more general journals. Subheadings could be used to more clearly identify the three search strategies used and the separate paragraph on the databases used. It is not clear to me why the authors excluded non-English language journals from the JCR 2008, could the authors confirm that they did not exclude non-English language journals from the other search strategies? It seems somewhat subjective that “articles that were no longer clinically relevant were removed” and it would perhaps have been more useful for the reader to be able to determine how useful the “citation classics” are by themselves.

If you are seeking to identify practice changing research, perhaps original articles should be analyzed separately from guidelines and review papers?

One of the main weaknesses of the study is that of lead time bias, hinted at by even the term “citation classic” and which is also mentioned in the manuscript. The authors write "arguably, influential articles that are most-recently published will be cited less often than older papers due to their shorter exposure to the medical community" but I don't think that point is arguable at all. In table 3, the authors note the papers that have been most cited from each year 2001-2008 and this is helpful to counter this bias, although as the authors suggest that it takes 20 years to be able to fully judge a paper by it's citations, perhaps they should go back further with this table?

It might also be interesting to conduct a further analysis to account for lead time bias, by dividing the number of citations of each paper by the number of years since publication to see if this identifies relevant "citation rising stars" to compare with your "citation classics". Even if this is not done for you whole data set it would seem appropriate to do this for the last 20 years and it would be most interesting to compare the findings with your current analysis.

A separate bias relates to the changes in citation patterns through digitalization of journals, increasing on-line access and an ever increasing number of both journals and publications. I suspect that this bias results in a non-linear change in
citation patterns over time and would be considerably more difficult to account for.

Another issue that could be further emphasized in the discussion of limitations is the question of why papers get cited. You may also find the following paper a useful reference to cite:


I think that although the citation of Boldt et al, 1999 is entirely appropriate in the introduction, where you write "while the United Kingdom and United States of America contribute to over half the anesthesia literature" I think you should cite the more up to date paper:


You write that "certainly the articles presented have made an impact on the practice of anesthesiology as all articles have been cited at least 100 times." While I don't dispute that the articles in tables 3 and 4 have made a significant impact on practice I am not sure of the logic of your argument - I am unaware of any data that shows that the number of citations a paper has correlates to its ability to change actual practice. In fact, this may be an appropriate suggestion for further research, perhaps with a qualitative methodology. Related to this point, there is no way of knowing whether the papers listed in tables 3 and 4 are the most influential papers in the field in terms of changing practice - how do you know that there are not other publications that have been cited less often by other researchers but at the same time have had a bigger impact in clinical practice? The suggestion that this list of papers should be used to shape guidelines and policy is an extremely bold statement and I do not think you have data to support this. I also do not think that this list is a particularly good "reference point to guide clinical practice". Certainly, in my own subspecialty of pediatric anesthesiology, few of the 20 papers listed are those that I would describe as essential reading for my residents and fellows. Nevertheless, your data has much academic, bibliometric and historical interest but you should probably make more guarded conclusions.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests