Author's response to reviews

Title: Analysis of sex and gender-specific research reveals a common increase in publications and marked differences between disciplines

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Author's response to reviews: see over
Oertelt-Prigione et al. “Analysis of sex and gender-specific research reveals a common increase in publications and marked differences between disciplines”

Rebuttal letter

Dear reviewers,
On behalf of all authors I would like to thank you for your thoughtful comments, which have given us the opportunity to improve the manuscript and better define certain passages that might have not been informative enough.
We are attaching a list of point-to-point responses to all your comments.

Best regards,
Sabine Oertelt-Prigione

Reviewer number 1

This article can be considered a starting point / state of the art for evaluating the further development of ‘output’ of research in the field of Gender Medicine. It gives a clear and quantitative picture of the rise (in numbers) in articles and also highlights differences between disciplines and type of research. The authors highlight the relative underrepresentation of management / treatment research which is fully justified.
In reviewing the article I refrained from evaluating the statistics as this is not my field of expertise.
I recommend the article for publication in BMC medicine as it is important and timely to have this information published.
However I would like to make some discretionary comments to the authors:
I really appreciate that the authors consistently mention sex and gender differences. However, they do not go into the conceptual distinction between the two concepts, although widely recommended by influential bodies. Besides today we still have to face the fact that especially in biomedicine most authors are conflating biological sex with socio-cultural gender. It makes the reader who is interested in this distinction (and interaction between sex and gender) very curious which proportion of the articles did address biological sex differences OR socio-cultural gender effects. But the authors are not to blame: because of the existing conflation at this moment in time, it would have been impossible to make this distinction based on the abstracts. May be they can include a footnote on the issue? It is thus more a suggestion for work that will be conducted after this firsts quick scan…..

The one concern raised was about the use and difficulty of distinction of the terms “sex” and “gender” in medical literature.

We have had to use the terminology interchangeably, not because we believe it to be correct, but because it is an unfortunate reality in practice. As acknowledged by the reviewer herself, several authors use the terms incorrectly and this makes a clear and correct distinction almost impossible at the moment.
Nonetheless, we added a passage in the discussion (last paragraph, page 2 of the discussion) explaining this limitation and the difficulties it associates with in research analysis.
Reviewer number 2

This is a very interesting and well done piece of work. It is thoughtfully planned and the results/discussion portion is intelligent and provocative. I have the following suggestions:

1. Methods: a fuller and more detailed description of the "test-mining algorithm based on the Lucerne platform-reference 14" would be most helpful to the reader, who otherwise has to retrieve and understand reference 14. I would consider this a useful but not a major compulsory revision.

   We added a more specific description of the program and its function. Please see paragraph 2 of the “Methods” section.

These are my suggestions for discretionary revisions which I think would help the usefulness of this paper:

2. Are the terms "sex" and "gender" used interchangeably by the authors in their search methodology? If so, this deserves some comment as to the rationale of doing so. Some disciplines might be more weighted to studying the impact of biological sex and others (like cardiology for example) more that of gender. This may be essentially an impossible separation or characterization to make, I realize, but I'd like to hear the authors' opinions about it in the body of the discussion.

   This concern was similar to the one raised by reviewer number 1. We addressed it as described above.

3. I thought the illustration were very useful and helped show in graphic form the important points the authors wanted to make about our progress in incorporating gender-specific analysis into scientific reports. The distribution of types of studies was interesting, as was the split between human and animal studies.

   We greatly appreciate your comments.

4. It would be worth the authors consulting the very early papers that dealt with the subject of gender-specific investigation in the scientific literature. I would specifically recommend Charney and Morgan, Journal of Women's Health 5:(6). 579.1996 and Markatz's editorial on that paper in the same issue (Merkatz R. Journal of Women's Health 5(6)Lp525.1996. While the sources used for this early work were only three American journals, I think the comparison between that first important analysis and this might be useful in terms of measuring our progress in successfully incorporating sex/gender as an important variable in investigation.

   We thank you for this suggestion. We were not aware of this early study, which is indeed very interesting. It is now mentioned in paragraph 3 of the discussion.

5. Finally, I would like to see a set of specific recommendations as to which disciplines needed the most improvement and in what particular types of investigation, i.e., animal studies, human studies, etc.) that looked at sex/gender were most-and least-abundant. While this is discussed in the paper, I think a summary set of what fields and what kind of investigation need improvement and
which have been most successful to date would be a very useful addition to the form of the report.

We included a list of the specialties that need to improve the analysis of differences in management in the Conclusions of the manuscript.

Reviewer number 3

The paper by Oertelt-Prigione et al. performed a detailed and informative analysis of publication trends for gender-related studies. It appears that gender-influenced works are rising over time. However, a specific lack of data on differences in clinical management between female and male patients could be identified.

The data are certainly interesting and may help defining the current status and the future research needs in the nascent field of gender medicine.

The work is well-written and contains clear and informative figures, thus it deserves to be published. However, I suggest that the authors address the minor points reported below in order to make the methodology at the base of the study clearer and easily understandable also to a broader and non-statistical savvy audience.

Major Compulsory Revision
none

Minor Essential Revisions
1) Article retrieval: explanatory sentences and background information have to be added regarding the designed search tool. What is a “text-mining algorithm”? What is the “Lucene Platform”? What it the “MeSH vocabulary”?

The terminology and meaning was further explained in paragraph 2 of the “Methods” section.

2) Statistical analysis: the performed analysis should be described in a more clear and understandable way. What is a “MySQL database”? What does it do and why was this chosen? What does it mean that the statistics were performed using “the Query Browser tool included in the MySQL GUI programs”? What is this tool and which kind of analysis does?

This was also improved in the “Statistical Analysis” section.

Discretionary Revisions
3) Studies involving human subjects: please add a few sentences commenting on these results in the results or discussion sections. Why is it relevant that human studies are conducted on large cohort? Can you add some speculative sentences about the implications for the field? In the abstract it is stated that “studies involving human subjects are frequently conducted in large cohorts with more than 1000 patients (24%).” What is 24% referring to? If it is referring to the number of studies with more than 1000 patients, than it does not appear to be a very high percentage and thus can not support the idea reported in the text. Please rephrase the concept in order to clarify the data and their implications.
We added “24% of all human studies” for clarification. However, as this passage does not further appear in the discussion, we did not include any additional references to this. However, if the reviewer feels this is needed, we will gladly do so.

4) Please enter the page number at the bottom of each page.

Page numbers have been added.