Reviewer’s report

Title: Reporting of sex and gender in randomized controlled trials in Canada: a cross-sectional methods study

Version: 0 Date: 19 Apr 2017

Reviewer: Shirin Heidari

Reviewer's report:

Thank you for the invitation to review this interesting paper. This is a timely topic and the paper makes an important contribution. The paper is well-written, the design of the study well thought, methodology clear and sound. Results are presented in a comprehensive and clear way, and the discussion is based on the findings of the paper. My only concern is that the authors have included single-sex trials in the study, which skews their analysis. I suggest that the authors remove all trials that only recruited /enrolled one sex/gender from the analysis to be able to present a more accurate picture of the reporting of analysis of sex and gender differences in RCT. I recommend publication of this paper following this revision, and I command the authors for this important piece of work.

Some comments that can help improve the paper:

The authors could explain why they decided to focus on papers published from January 01, 2013 to July 23, 2014. It would have been great to include a later time period to see whether the CIHR policy has had an impact. As the CIHR only introduce their policy in 2011 to ask all research grant applicants to indicate whether their research proposal addresses sex and gender and to provide justification for their response, most of the RCT findings reported in this time period would have been funded before 2011.

Reference 31 is to a PowerPoint presentation by the EASE Gender Policy Committee in 2015. The committee has since published it's guidelines in this same journal: 10.1186/s41073-016-0007-6

Methodology: the inclusion / eligibility criteria should be better articulated. For example, it is not clear whether or not single-sex trials were included (and if yes, why?)

Line 203: "We screened 256 records from the top"… were these sorted based on most recent on the top? Perhaps clarify whether the most recent 256 records were screened.

Line 218: "In the subset of multi-site trials that did report information on site location, 27/42 (64%) were conducted within Canada and 13/14 (93%) of those conducted outside of Canada
included at least one site in Canada. " This is not clear. If these were all multi-site trials and Canada was one of the sites in all of them, why some are considered conducted in Canada and others outside Canada. It's confusing.

Line 235: "Ten RCTs had eligibility criteria that restricted participation to women, and one RCT enrolled girls and one RCT enrolled boys". Were these excluded from the analysis? As they are single sex trials, there would not be a reason to look at sex / gender differences.

Line 245: "some trials used the term 'gender' when referring to the sex of their participants". This is not necessarily incorrect, as most trials do not perform a chromosome analysis to confirm the biological sex and rely on the self-reported gender of the participants. In this sense, the term gender is actually more accurate, as it refers to the way the participants identify themselves. This is worth discussing in the discussion section.

Line 263: "19 (19%) RCTs reported on some aspect of 'sex or gender'. For four of these, the study was focused on a specific population of women, men, boys or girls and this population was defined in the title." Were these all the single sex studies? You should perhaps mention that. I assume the 12 studies mentioned above are part of these 19?

Line 271: "sex or gender' was only mentioned in 11 (11%) of the RCTs". Were these all the single sex studies? That would make sense, as they probably need to justify why looking at only one sex/gender. Excluding these studies from your review is important in order to offer a more accurate picture of the extent to which sex/gender are considered important and worth mentioning in RCT that are meant to enrol both males and females.

Line 284: now here it gets a bit confusing. Earlier in the paper you mention that there were 12 RCT that enrolled only women, girls or boys. Then there is another statement about 19 papers (see my comment above) and now there is "Thirty-three of RCTs (33%) described exclusion criteria based on 'sex or gender". Does this mean that they excluded one sex or gender? That's how I read it. Of the "Nineteen of the 100 RCTs excluded pregnant/breastfeeding women (n=14), women of child-bearing age (n=1) or both (n=4)" how many included women outside these groups? Can you clarify these figures?

Line 308: "Almost all RCTs (98%) reported demographic characteristics by 'sex or gender' by identifying number of male/female participants in text or as part of their demographic table describing baseline characteristics." Did the author look at whether sex or gender was reported for recruited, enrolled and completed the study, including for those who was lost to follow up or those who discontinued the trials?

Line 315: you should remove the single sex studies from your analysis, as your findings are skewed. Naturally, the single sex trials will not carry out a gender analysis in the sense to look at sex or gender differences. And explain what you mean with "discrete analyses".
Line 334: see my previous comment re excluding the single sex studies.

Line 346: "For example, only 6% (six studies) of our sample…" were there any particular area or discipline that did better than others? It would be worth discussing it.

Line 359: "sex-treatment interactions" it is a rather awkward term. I suggest revising to: the effect of sex on treatment response or outcome, or something similar.

Line: 374: "and a tool for peer reviewers." Specify that this is for grant proposals?

Discussion: The discussion could be better organised and strengthened. The authors give examples of why and sex and gender reporting is important, and on and off refer to inconsistencies in terminology but do not meaningfully engage in a more-in-depth discussion on the complexities of sub-group analyses, the different underlying reasons for this failure to report sex-disaggregated data or gender analysis. Also, the discussion heavily focuses on "sex"-based differences and biomedical examples, and rarely discusses the importance of considering gender and how. That is a much harder task and most researchers are ill-equipped to address gender-dimensions beyond the biological sex within their research design or analysis, as there is a lack of understanding what tools there are and how these nuances should be captured and analysed. It would also be useful approaches, if there are any, that have improve sex/gender reporting.

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