Activist-driven transgender research methods are reckless and will lead to harms

Main article:

APPENDIX

Results: AMSTAR 2

My assessment of the Cornell review with AMSTAR 2 now follows.

1. Did the research questions and inclusion criteria for the review include the components of Population, Intervention, Comparator, Outcome (PICO)? Yes, though inclusion criteria were so broadly framed that the research question, presented only in the Cornell review’s title, almost vanishes. In effect, the inclusion criteria would capture any World Professional Organization for Transgender Health (WPATH)-recommended intervention [1]; studies could be of any design, with or without a comparator condition; “well-being” outcomes could be assessed either quantitatively or qualitatively; with no minimum follow-up period; and with no requirement for outcomes to be measured with validated instruments or expressed in terms of statistical estimates.

2. Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol? The authors say they developed their protocol in accordance with the PRISMA reporting guidelines. If indeed they tried to do this, they may not have understood what they were supposed to do. There is no statement that their protocol was developed before commencing the review. There is no evidence that their protocol was ever registered in the PROSPERO online registry at the University of York [2]. They did not make their protocol available on the Cornell web site.

3. Did the review authors explain their selection of the study designs for inclusion in the review? No.

4. Did the review authors use a comprehensive literature search strategy? No.
a. They only searched PubMed. This is a large database, but it only covers around two-thirds of the relevant scientific literature.

b. To have done their searches adequately, it would have been necessary to search a minimum of one additional database; either Embase or the Cochrane Central Register of Controlled Trials [3]. To have done their searches well, authors would have searched, at minimum, PubMed, Embase and the Cochrane database [3].

c. By restricting eligibility only to English-language studies, the review may also have missed studies published in languages with a significant “trans” literature, including studies published in Chinese, Dutch, French, German, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Serbian and Swedish. This creates a serious risk of selection bias [3].

d. Their search strategy was very crude and was unlikely to have captured even all relevant studies published in English.

e. They did not search conference proceedings or other types of “grey literature.” It is important to do this because around one-third of biomedical research presented at conferences is not subsequently published in the peer-reviewed literature [3,4].

5. Did the review authors perform study selection in duplicate? Unclear. They report that they assessed full texts of highly relevant articles in duplicate, but do not report about earlier stages of the screening process.

6. Did the review authors perform data extraction in duplicate? Not reported.

7. Did the review authors provide a list of excluded studies and justify the exclusions? No.

8. Did the review authors describe the included studies in adequate detail? No. The authors presented only the studies’ abstracts.

9. Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review? No. It is unclear why the authors apparently did not feel it necessary to assess the risk of bias in each study.

10. Did the review authors report on the sources of funding for the studies included in the review? No.
11. **If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?** The authors suggest that they attempted to pool data in meta-analysis, but this seems very unlikely. In their “Findings,” they say the following: “Pooling data from numerous studies demonstrates a regret rate ranging from .3 percent to 3.8 percent.” The authors may have been confused. They report a range of supposed “regret rates,” but this is a range of estimates from a few individual studies, and not a statistical estimate obtained through meta-analysis. Pooling data to obtain range estimates would have been superfluous.

12. **If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?** Not applicable.

13. **Did the review authors account for RoB in individual studies when interpreting/discussing the results of the review?** No.

14. **Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?** No.

15. **If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?** Not applicable.

16. **Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?** No

**Results: PRISMA**

My assessment of the Cornell review’s reporting, using the PRISMA checklist, now follows.

1. **Title:** Identify the report as a systematic review, meta-analysis, or both. **Not done.**

2. **Abstract:** Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study
appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number. Not done.

3. Abstract: Describe the rationale for the review in the context of what is already known. Not done.

4. Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS). Not done. “What does the scholarly research say about the effect of gender transition on transgender well-being?” is far too simplistic and vague.

5. Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number. Not done.

6. Specify study characteristics (e.g., PICO, eligible study designs, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. Not done.

7. Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched. Not done.

8. Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. Done, though the strategy itself was inadequate.

9. State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis). Not done.

10. Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators. Not done.

11. List and define all variables for which data were sought (e.g., PICO, funding sources) and any assumptions and simplifications made. Not done.

12. Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis. Not done.

13. State the principal summary measures (e.g., risk ratio, difference in means). Not done.
14. Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$) for each meta-analysis. Not done.

15. Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). Not done.

16. Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified. Not applicable.

17. Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. Partially done (no reasons for exclusion, no flow diagram).

18. For each study, present characteristics for which data were extracted (e.g., study size, PICO, follow-up period) and provide the citations. Not done.

19. Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). Not done.

20. For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. Not done.

21. Present results of each meta-analysis done, including confidence intervals and measures of consistency. Not applicable.

22. Present results of any assessment of risk of bias across studies (see Item 15). Not done.

   Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). Not applicable.

23. Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). Not done.

24. Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). Not done.

26. **Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.** Not done.

**REFERENCES:**

1. World Professional Association for Transgender Health (WPATH). Standards of Care, version 7 (2011)

2. PROSPERO International Registry of Systematic Reviews. University of York. Available: [https://www.crd.york.ac.uk/prospero/](https://www.crd.york.ac.uk/prospero/) [accessed 20 November 2019]
