Author's response to reviews

Title: Monitoring the health of gender minority populations: Validity of natal sex and gender identity survey items in a U.S. national cohort of young adults

Authors:

Sari L Reisner (sreisner@hsph.harvard.edu)
Kerith J Conron (kconron@fenwayhealth.org)
Laura Anatale Tardiff (laura.anatale.tardiff@channing.harvard.edu)
Stephanie Jarvi (stephanie.jarvi@gmail.com)
Allegra R Gordon (argordon@hsph.harvard.edu)
S Bryn Austin (Bryn.Austin@childrens.harvard.edu)

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Monitoring the health of gender minority populations: Validity of natal sex and gender identity survey items in a U.S. national cohort of young adults

Dear BMC Public Health editors and manuscript reviewers:

Thank you for the helpful review of our manuscript and invitation to revise and resubmit to BMC Public Health. As noted before, the content of this manuscript has neither been published nor is simultaneously being considered for publication elsewhere.

We believe that the review further improved the overall quality of the manuscript, and below detail (in italics) how each concern raised by the reviewers has been addressed. We thank the reviewers for their helpful comments and you for your consideration of our resubmission. If you have any additional question or requests, please do not hesitate to contact us.

Reviewer 1:

Major Compulsory Revisions

1. While limitations of the study population are discussed on page 16, this paper needs to address the additional limitation that the sample represents only the subgroup who was retained during years of follow-up (1996 to 2010). Only 7,831 of 16,882 original participants (46%) are included in this analysis. Can information be included regarding how these participants differ from the GUTS1 participants who were lost to follow-up or did not complete the relevant measures and were thus not included in this analysis? Without this information, it’s difficult to know to what extent these results apply to the group of young adult children of female nurses, or whether factors that affect retention may also create an even more narrowly circumscribed and potentially non-representative group.

Author response: Thank you for this comment about loss to follow-up in GUTS, and the potential that differential attrition may introduce bias to our findings. We have added a sentence to the Discussion to address this limitation. We did conduct analyses to examine whether those participants who were in our data analytic sample differed from the original cohort at baseline (i.e., to address the representativeness of our analytic sample relative to the entire GUTS1 cohort). There were no differences on age or race/ethnicity; however, the data analytic sample had a higher proportion of female respondents (maternal-reported sex) than the original GUTS cohort. We have added two sentences to the Methods describing this (please see page 6, lines 15-18). We have also added a sentence to the Discussion to describe this limitation (please see page 17, lines 3-5): “An additional limitation is that the data analytic sample represents only the subgroup of GUTS1 participants who were retained during years of follow-up from 1996 to 2010.”
Minor Essential Revisions

2. The second part of the title does not accurately reflect the paper’s focus on construct validity as well as cognitive testing. It could be reworded to begin with “Construct validity and cognitive testing of…” or alternately just “Validity of…”.

Author Response: We have deleted “cognitive testing” from the title and replaced it with “validity.” The title is now: “Monitoring the health of gender minority populations: Validity of natal sex and gender identity survey items in a U.S. national cohort of young adults.” We thank the reviewer for this comment.

3. p. 6, line 20: Please specify the type of correlation statistic used.

Author Response: We used a Pearson product-moment correlation coefficient (r). We have added “Pearson r=0.47-0.63” to address this comment (please see page 7, line 1). Thank you.

4. p. 6, line 22 and p. 7, line 14: Please specify the statistic used for #. I would assume Cronbach’s, but it’s not clear.

Author Response: Thank you. We have clarified that this was Cronbach’s alpha (α).

5. Explain the decision to categorize variables (e.g. dichotomizing gender nonconformity scores). Why throw out potentially meaningful data (with likely reduction in statistical power) by reducing to categories?

Author Response: The decision to categorize variables was made due to the highly skewed distribution of gender nonconformity scores. Our categorization approach is one we have used previously in GUTS and have, therefore, opted to use in order to be consistent with these previous publications. This categorization did not result in appreciably reduced statistical power, as evidenced by the estimated associations achieving statistical significance at the alpha 0.05-level.


6. Of the 26 participants who are coded as gender minority, the majority (14) did not identify as male, female or transgender. This jumps out, and needs more discussion. While we cannot know how these participants would have responded given only the options of male, female or
transgender, it suggests that it may be quite important to include the other option. It may be most important among youth, given both trajectories of identity formation and potential cohort effects regarding rejection of identities and acceptance of broader gender diversity, and it would be interesting to see if this would look quite different among older persons. Given that this group was represented by only 2 of the 9 participants in the cognitive testing, it also remains unclear whether or not this group may contain some who would not in fact be appropriately categorized as gender minority, though the responses of those 2 are reassuring.

Author Response: Thank you for this suggestion to point out the importance of having a response option beyond female, male, or transgender. We have added a paragraph to the Discussion (please see page 16, lines 10-16) that discusses the importance of having a non-binary or transgender response option.

Discretionary Revisions

7. Given that there is so little research on measurement of gender in health research, I do have some concerns that readers may extrapolate that this method of measurement is the best for all studies. While I agree it’s probably the best for large multi-use population data sets, individual research projects may require different measures to meet their aims beyond just identifying trans participants. This item includes on domain of biological sex (that assigned at birth, usually based on external genitalia) and one domain of social gender (identity). For some health studies, lived gender will also be relevant, and for others, different biological domains will be relevant (e.g. hormonal milieu or current anatomy). It would be good to make this point for those designing their own studies, so they are able to use their data and interpret their results. While I dislike self-referencing, I believe I’m still the only one to have written about this with regard to trans items in surveys (Chapter 8 in this book: http://www.cihr-irsc.gc.ca/e/documents/What_a_Difference_Sex_and_Gender_Make-en.pdf). This is really just an extension to methodology of work on domains of sex/gender by multiple people (e.g. Anne Fausto-Sterling, Milton Diamond).

Author Response: We have added additional text to the Discussion (please see page 17 lines 8-17-23) to address this reviewer comment. We now further contextualize our measures in and outside of population research, and cite the Bauer, 2012 book chapter. We suggest question development and validation to assess social, legal, and medical gender affirmation via skip patterns in order to assess sex- and gender-linked health pathways in gender minority health. Thank you!

8. It may also be worth commenting on the frequency of being transgender within the sub-sample of GUTS1. There were 26 participants out of 7,831, which gives a prevalence of 0.3%. This is similar to the estimates the authors and others have produced for adults in two U.S. states, which is interesting considering the young age of this group.

Author Response: Thank you for this suggestion. We have added a paragraph to the Discussion (please see page 16 line 10-12) that discusses the prevalence estimate of gender minority young adults in GUTS (0.33%) relative to other estimates.
9. On page 11, in the paragraph on response options, it may be worth noting that while the participant thought male and female options alone were relevant because they reflect the options on birth certificates, that in some jurisdictions there are third options such as “undetermined” that are assigned (e.g. in Ontario, Canada). I am not aware of any good reviews of current birth certificate options across jurisdictions, but researchers may want to ensure their options accurately reflect birth certificate options, which may or may not be from the jurisdiction in which participants currently live.

Author Response: Thank you for this comment. We feel that discussion of birth certificates outside the U.S. is beyond the scope of this paper since it is U.S.-focused. We have made additional efforts to ensure that our manuscript is explicitly focused on research in the U.S. For example, on page 17 we have revised as follows (new text underlined): “We recommend these two brief measures be used to monitor gender-related health disparities through cross-sectional and longitudinal population research in the U.S.”

Reviewer 2:

No revisions requested.