Author's response to reviews

Title: Do people with risky behaviours participate in biomedical cohort studies?

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Author's response to reviews: see over
Dear Editor,

Please find comments on the reviewers feedback regarding the manuscript entitled “Do people with risky behaviours participate in biomedical cohort studies?”

We thank the reviewers for their comments. Detailed below are the comments on each point.

**REVIEWER 1**

**Overall comment**  
Research hypothesis

The abstract has now been altered and extra sentences included in the text highlighting a research hypothesis.

We believe that this paper makes a very important contribution to the literature. Adequate testing of the representativeness of participants included in important epidemiological cohort studies are not always subject to peer review. Often one or two sentences included in the method section of results-based papers, indicate “the study participants are representative”. With increased trends towards individual’s protecting their privacy, and lower overall participation rates in representative research studies, it is important that examination of cohort and other research recruitment methodologies, and quality of samples and estimates, are transparent and of a high quality.

The intent of every quality researcher should be to establish quality research and a part of that process is reporting openly on the value and worth of the sample and the data and the validity and reliability of the work, where and when they can. Recent detailed papers on representative cohort methodology, cohort sample selection, and cohort sample representativeness are relatively sparse in the literature and this paper adds to the methodological debate including trends of who is participating and how typical they are of the general community.

The aim of this paper, and the hypothesis tested, was not by how much, or in what direction, study participants were different from the community – just if they were different. Therefore the reviewer’s request for detailed research hypothesis is not the aim of this paper. The authors agree that the conclusion and major finding that “people in risky behaviours participated in this study in the same proportions as people without these risk factors” can not be directly transferable to other studies but is important, relevant and of importance to other researchers establishing very costly and very time consuming population based cohort studies.
Minor point 1  Calculation of weights

Additional information on how the cohort weights were calculated has been included in the text.

Minor point 2  Self-rated health status

“Self-rated” now added to the text.

Minor point 3  Loss to follow-up discussion

This paragraph has now been deleted.

Minor point 4  Cohort studies - representativeness

The sentence has now been modified.

Minor point 5  Table acronyms

The acronyms have now been listed below each table.

REVIEWER 2

Comment 1  Statistical analysis

Overall significance was examined using chi-square tests to produce the overall chi-square and p-values. Adjusted standardized residuals were obtained using the methods of Haberman (Haberman SJ. Analyses of qualitative data. Vol 1, New York, Academic Press, 1978) and were used to test deviations from expected values separately in each cell. Bonferroni corrections were applied for multiple testing. This explanation of using the adjusted standardised residuals has been added in the methods section and included in the footnote in Table 1 & 2, and the overall chi-square and p-values has been added in Table 1.

Comment 2  P values

Yes, we agree. Since we are comparing a relatively large sample with population figures we do find that even small differences result in significant results, hence, low p-values. Checking the figures in Table 1 has shown that there was an error in the population figures and significant test. We have found that the NWAHS (unweighted) were statistically significant from the Census data in each of the age groups.

Comment 3  Variables included in table 1 and 2
These variables were included because they were the only comparable data items from the Australian Census. Comparison was made on these four items against the Census figures, not the Estimated Residential Population figures as previously stated. The text has been amended accordingly.

Comment 4 Comparisons (Tables 3 & 4)

The data are weighted to compensate for non-responders bias. Unfortunately, no data are available on non-responders, although as indicated previously, the weighting compensates for non-responders so that the data are reflective of the whole population.

Height, weight, blood pressure and cholesterol were only asked of half of the respondents. This should have been made clear in the text and this shortfall has now been addressed and the discrepancy in the numbers made clearer in the article.

The physical activity data collected via the Health Monitor is directly comparable and is not a subset of the same population. The Health Monitor physical activity data is the best available data, the survey has adequate sample size and identical wording was used. These points are now made clearer in the text.

All data used in these analyses are from representative random samples of the population. The data have been weighted using identical procedures and the authors have no hesitation in concluding that these data and estimates represent the broader community (within normal sampling constraints).

Comment 5 Non-responders

The authors stand by their conclusions. The use of survey weights accounts for over and under representation of the sample. This adjustment is undertaken so that the findings can be made, or generalized, for the whole population from which the sample was drawn. The advantages of using weighted data are that any sample percentages calculated from the data are unbiased estimates of population percentages.

Many of the final conclusions in subsequent analyses will be about the population at whole. As the study of the population is the main purpose of the research we wish to highlight any adjustments that have to be made before this generalization to the population takes place.

Notwithstanding, amendments to the conclusion (and abstract) have been made to accommodate the reviewers comments and to make these points clearer.

Minor Revisions

Comment 1 Non-responders

No data are available on non-responders.
Comment 2    Australian insights

Unfortunately, there is not enough information to determine culture sensitivities and we are not aware of any other unique features that make these results non-generalize. In fact, this area of Adelaide is often cited as typical of the population from the state as a whole and indeed the country.