Reviewer's report

Title: Is web interviewing a good alternative to telephone interviewing? Findings from the International Tobacco Control (ITC) Netherlands Survey

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Reviewer: Michael Erhart

Reviewer's report:

The current manuscript compares telephone and web-based modes of administration with regards to their effects on a health survey that focuses on smoking behaviour and attitudes. The topic is of methodological and contentual interest. The paper has a high Public Health relevance. However, there are some major shortcomings and critical issues, most of them associated with the actual statistical analysis strategy.

Major Compulsory Revisions

Page 4, para 1: It would be important to also contrast web-interviewing with paper and pencil administration of questionnaires.

Page 4, para 2: It does not come totally clear what the sampling error refers to. It also needs to be explained what the term probability sampling refers to and why self-selection precludes estimation of the sampling error.

Page 4, para 2 to Page 5, para 1: This presentation of 'error sources' could be supplemented by introducing a generally important dimension along which error could be classified: Precision versus Bias.

Page 5, para 1: This passage could be supplemented by some statements on differential item/test functioning across modes of administration: This would not only concern the question about different measurement (on average) results but also e.g. if the measure (and their indicators/items) are functioning in a similar discriminative, reliable and valid way across the different modes of administration.

Page 7, para 1, fourth last line: Please also provide the response rate as defined in page 8, para 1, last three lines. However, this information would be better placed in the results section.

Page 7, last para, lines 1-2: It would be important to know how the TNS NIPOBase was recruited, which are the inclusion and exclusion criteria, and why it is only representative for region.

Page 7, last two lines: The authors wrote “In this way, every member of the Dutch population with a fixed line telephone had the same chance of being sampled for
This survey." This is not totally true. Only every member of the TNS NIPObase had the same chance of being sampled.

Page 8, para 1, last three lines: It remains unclear what the “response rate” and “cooperation rate” refers to. Please indicate this in a half sentence / sentence. These information refer to results of the study and thus would be better placed in the results section.

Page 8, last para: This is a creative approach to test coverage error. Yet still the confounding between both coverage errors (web and tel. mode of administration) cannot be totally controlled.

Page 8, last para, line 1-6: These sentences could be moved to the statistical analysis section.

Page 9, para 1, line 1-8: sentences could be also moved to the statistical analysis section.

Page 9, para 3, line 1-4: These sentences could be also moved to the statistical analysis section.

Page 10, para 2: This section could be enhanced by including the information mentioned in the comments above. It would be helpful to make more salient what the different analyses aim at.

Page 10, para 2 and before: A fundamental Problem concerns the fact that in its current from the statistical analysis strategy does not permit to examine measurement error independent from coverage and response error, as the latter were not controlled. However if there are any differences in the socio-demographic or socio-economic make-up of the web and tel. Based samples, it is likely that these differences would also manifest in differences in the measurement results between the different modes of administration.

One possible solution would be to include such demographic and socio-economic variables as covariates in the statistical analyses. This however would demand applying e.g. multiple regression models.

In it s current from the manuscript on several times examine the question: Are there any differences between the samples – however it is not possible to identify which proportion of difference/error is attributable to which source of error between the samples.

This is a major shortcoming of the work.

Another major shortcoming refers to the rather sparse statistical analyses: In fact the authors examined only omnibus differences in the outcome distribution. In the ordinal scaled variables there were no attempts to examine for differences in the central tendency (e.g. U-Test); larger floor or ceiling effects (e.g. logistic regression) etc. In the interval scaled variables no attempts were made to examine for differences in the dispersion of the answers (e.g. Leven tests). It would be also interesting to see if there are any effects of the mode of administration on the strength of association between certain variables (e.g.
gender differences in smoking – are they more pronounced under a particular mode of administration?). Or are the items answered in an internally more consistent manner under a particular mode of administration? The internal consistency or the association between the different smoking questions could be computed and compared across samples (e.g. Feld Test for differences in Cronbach alph). Interaction between mode of administration and one outcome with regards to the prediction of another outcome.

Discussion: Of course the discussion is generally limited by the shortcomings mentioned beforehand.

Page 13, last para: See comments above: there is no valid conclusion possible on the measurement error without controlling for coverage and response error.

Page 14, first lines: This statement taps an important issue. I wonder if the authors tried to examine the effects of gender and age differences in the interviewing person on the outcomes.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I have no competing interests