Reviewer's report

Title: Factors affecting Study Efficiency and Item Non-response in Health Surveys in Developing Countries: The Jamaica National Healthy Lifestyle Survey

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Reviewer: hendriek C boshuizen

Reviewer's report:

General

This paper describes the design and item non-response of a Health Survey. Such a report is useful as background to further studies based on data from this Health Survey. The paper now states it is a paper on item-non-response, but most of the paper describes the study design in very much detail. I believe the authors should choose whether to make this a descriptive paper on the study (design and execution) (including something on item response) or a (much shorter) paper on item non-response (where design of the study is only given for those points that matter).

A flaw in the design of the sampling procedure (which the authors mention in the discussion) is that one person per household is sampled, which means that in the sample persons from smaller households, and especially from single persons households, will be overrepresented. This could have been solved by post-stratification weighting when household size is known, but unfortunately this information has not been collected in the present survey. This flaw, however, is mainly a problem when wanting to produce estimates representative for the population, and not so much for finding relationships.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Item non-response is due to many reasons, among which on only unwillingness to respond (sensitive questions), but also lack of knowledge. For instance, with income it is also possible that subject find it hard to estimate an average income, especially if income is strongly variable. The latter aspect could use some more discussion in the paper.

The most problematic form of non-response is non-ignorable non-response, that is when respondents that not answer differ on this question from those who answer. For instance, those with a high number of sexual partners refuse to answer more often than those who are monogamous. This can not be solved by imputation, as is now suggested in the discussion.

The language needs revising, as at many places it is unclear what is meant. Examples: page 6: maximum 2% error rate at the 5% level of significance. The term level of significance indicates that the sample size calculation has been done for some form of comparison, while the rest of the sentence suggests that it is based on wanting to estimate prevalences with a certain accuracy. Also: 2% error: is this 2% absolute (denominator: total population) or relative (denominator the persons with diabetes/hypertension).

page 12: .. had twelve in stead of 11 ED’s, St Catherine had the largest shortfall (11/396): Stated like this, this means that St Catherine 396 EDs, which I do not think is meant here.

page 12: It is not clear why other ED’s than planned were studied.

In the discussion/conclusion much emphasis is given to the fact that interview duration is longer in older persons, and that this leads to less efficiency. However, the difference is only a few minutes on a 45 minutes interview, which in practise will not be that important.

It is stated (page 11) that age and education were so highly correlated that they could not be entered simultaneously in a model. This seems rather strange. Although there no doubt will be a statistically significant correlation, I find it hard to believe that the correlation is so high (> 0.6-0.8) that it causes problems in a multivariate model.

The design of the study should be described more concisely.

Introduction: The part saying diseases are important in Jamaica could be omitted. In stead the benefit of a
health survey relative to using other sources should be mentioned. Conclusion: Much is made from the high non-response on income. However, also in developed countries income questions have high non-response.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

page 5: previous survey would have underestimated the prevalence. Either an underpinning or a reference for this statement should be given.

Discretionary Revisions (which the author can choose to ignore)

The design of the study could be clarified by giving a flow-schema

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interest