Author's response to reviews

Title: Implementation of the European Health Interview Survey (EHIS) in Germany. Further development of the German Health Update (GEDA)

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Version: 1 Date: 22 May 2017

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Point-by-point letter

Reviewer reports:

Reviewer #1:

1) In Methods section:
Could you explain more the stratified sampling selection and sampling frame? How many communities are in Germany? How many districts?

Where de SSUs selected into the PSUs by a simple random sampling?

Response: We thank the reviewer for this comment and have added the total numbers of communities and districts in Germany to the first subsection of the Methods section on the bottom of page 4.

The SSUs were randomly selected from the local population registers of the PSUs using an age-stratified random sampling procedure. Gross sample sizes for age groups were calculated according to their estimated response rates from prior pretests in order to approximate the age distribution of the population. Accordingly, age groups expected to have lower response rates were oversampled in this sampling stage. We have also added this information to the first subsection of the Methods section on the top of page 5.

2) Table 1 could have the same order than the text: health status, health determinants, health care, demographics/social variables.

Response: The order of the table is consistent with the Eurostat source it is adapted from. We agree that the orders in the text and the table should be in line. We have thus changed the order in the text according to the order in the table (see page 9, Lines 7 ff.).

3) In Discussion section:

It seems that the weight design sample does not show differences in education with the reference population, but the authors could discuss (as they do with the previous telephone surveys) if there are any difference by age and sex between the web and the paper response, since that is an important issue in data collection.

Response: The aim of using different participation options (SAQ-Paper and SAQ-Web) was to increase respondents’ convenience to participate in the study by providing the possibility to choose the medium which they are most familiar with to participate in the study. This was done in order to increase the response rate and the representativeness of the study sample. This strategy was developed based on a previous methodological study on “Mode differences in a mixed-mode health interview survey among adults” published from some authors which also contributed to this publication (Hoebel et al 2014; Arch of PH 72:46, Ref 29). The initial sampling frame is identical for SAQ-Web and SAQ-Paper respondents. The SSU is selected out of the same sampling frame for both participation options and then the SSU makes a self-selection which option she or he prefers. As the basic sample selection is the same, no sample deviation should be done by the mode of data collection. All data sets from both participation options together constitute the final study sample. Using this innovative strategy of providing the SAQ-Web option as well as incentives for study participation lead to a better filling of hard-to-reach respondent’s strata (e.g. in younger age groups) as compared to previous GEDA waves (Robert Koch Institute (Ed.) (2014) [Data and facts: Results of the study “German Health Update 2012”]. Berlin: Robert Koch Institute).
Reviewer #2:

4) Page 3. It is evident that the term 'interview' in the context of this paper is not used in its common meaning of a formal meeting or discussion, which involves personal interaction, whether face-to-face, over the telephone or similar. It might be worth stating that interviews in the context of health interview surveys refer to the process of collecting information by questioning about health, regardless of the mode of collection and not necessarily involving personal contact. This has been noted in relation to a previous paper by Lange et al (2014), which was written by some of the authors of this article, and was addressed very well at the time: https://static-content.springer.com/openpeerreview/art%3A10.1186%2F2049-3258-72-46/13690_2014_5065_AuthorComment_V2.pdf.

Response: We fully agree with the reviewer comment and have added a clarification explaining the broad meaning of the term interview in the context of HIS on page 6 at the beginning of the last paragraph:

“The meaning of the term interview in the context of a ‘health interview survey’ (HIS) has a broad understanding including personal face-to-face or telephone interviews as well as data collection in a written manner by self-administered questionnaires. In GEDA 2014/2015-EHIS the latter was used.”

5) Consider mentioning that Federal Health Reporting service is in fact provided by the RKI, which otherwise is not obvious.

Response: The Federal Health Reporting service is in fact provided by the RKI but in collaboration with the Federal Statistical Office (DSTATIS). Mentioning this correctly in the text would expand the paragraph and compromise the reading flow.

6) Page 7. 'those who refused participation in the survey by telephone, e-mail, fax or mail'. It might be better to say that the letter offered an opportunity to refuse participation by telephone, e-mail, fax or mail (if this is so), before saying that no reminders were sent to those who refused participation. This is to make it very clear that individuals were only contacted by mail, but had the opportunity to refuse by other means.

Response: We agree and we have rephrased the paragraph according to the suggestion (see page 7, line 2-4).

7) 'addressees who were found to be ineligible'. Suggest specifying that this was mainly due to no longer being resident at the address from which they were recruited, if that was the case.

Response: Thank you for this comment. Yes, addressees were found ineligible mainly due to no longer being resident at the address. We added this clarification to the paragraph accordingly on page 7.
8) Is it possible to provide any indication whether involving the newspapers was effective? What proportion of those papers that were approached actually published information about the survey?

Response: We considered the publishing rate being quite successful: 90 of the contacted 270 newspapers published information about the GEDA 2014/2015 - EHIS survey (we added this info on page 8, line 6). But its effectiveness has not been measured systematically. Participants were not asked if they have read any newspaper article or press release prior to their participation. Therefore we cannot say if there was a specific influence on participation or not. This is a very interesting research question which we might be able to approach in our next survey. Thank you for bringing this to our attention.

9) Given the considerable efforts made initially to reach potential participants with repeat mailings, were any attempts made to get consent for those questionnaires which were received without such? Some participants could have overlooked the consent form, and those individuals who submitted the SAQ-Paper in the first place may have been very willing to consent, had the questionnaire and the form been returned with an explanatory note. If this was not done, is it something that could be considered in the future?

Response: The actions taken to achieve as many signed consent forms as possible were not sufficiently described in the article before. We thank the reviewer to ask for more details. We have added more information about this in the paragraph accordingly (see page 8, lines 8 ff.).

After this reminder action we had 166 questionnaires left without a signed consent. These had to be considered as non-interviews.

10) Page 10. 'the reference population (Microcensus 2013)'. Suggest adding a couple of words explaining what Microcensus is, as this is not conducted everywhere (also insert a reference to the Microcensus website).

Response: Thank you for pointing this out. We added an explanation for Microcensus 2013 and added a web link to the reference (see page 12, line 1 and Reference 27).

11) In the first paragraph under 'Representativeness and weighting' it is somewhat difficult to follow which reference populations were used for which variables, and this confusion increases after looking at the busy column headings of Table 4. For example, the text suggests that the Microcensus 2013 reference population was used in relation to the age and federal state distribution, but Table 4 column heading mentions Microcensus 2013 in relation to education only. I would suggest editing this paragraph to include clear statements as to what population was used for what, e.g. 'the Federal Statistical Office (Destatis) reference population was used for…'. Also I would avoid using the name Federal Statistical Office in one place (Table 4), and Destatis in another (text), if these are the same or linked, as it gets confusing for the reader.

Response: Thank you for bringing this to our attention. There was a mistake in the manuscript. The reference population used for sex, age and region was not the Microcensus 2013. It was the population projection of the Federal Statistical Office. The Microcensus 2013 was only used as a
reference standard for the level of education. We have now corrected this in the text. We now consistently use Federal Statistical Office instead of DESTATIS in the text (See page 11, second paragraph).

12) Page 11. Is there any reason why 'education' is given in brackets in the list of variables?

Response: No, there is no need for this, we have removed the brackets.

13) As part of the Discussion it would be prudent to explicitly acknowledge and comment on selection bias arising from the recruitment methods.

Response: We added a sentence referring to the possibility that selection bias occurred at the different stages of the sampling procedure (see page 16, lines 6-8).

14) Page 14. 'European Commission issued a Grant project' is slightly confusing. Is the following meant: 'European Commission issued a grant for a project'?

Response: Yes, that’s correct we have revised this sentence (see bottom lines on page 14).

15) Page 15. 'response rates have continuously declined over the last decades [37–40]' Based on those references, a couple of words to suggest possible explanations for the decline would be very helpful here.

Response: It is not possible to draw causal inference for the reasons why the response rates have declines from the evidence presented in the cited studies. However, we have already discussed strategies in order to increase response rates on page 15 line 16 ff.

16) What was the reasoning behind differential incentivising with vouchers, and what was this based on?

Response: The decision for this particular incentive strategy was based on results from previous pretesting. We clarified this and described it in more detail on the bottom of page 7 and top of page 8 where the incentives are mentioned first. Thank you for pointing out this missing information.

17) 'Tolonin et al. demonstrated'. Suggest rephrasing the sentence or possibly inserting 'previously' before 'demonstrated', otherwise it could imply that GEDA came before Tolonin's work.

Response: We have rephrased the sentence as suggested.

18) Page 16. From 'The EU-wide harmonized EHIS 2 data source' onwards - this should really be part of the discussion, rather than the conclusions.

Response: We moved this paragraph to the end of the discussion section (see page 16, third paragraph).
19) References. Please provide web addresses for all resources that were accessed online, e.g. possibly references 23, 24 or any others.

Response: We have added web addresses to all resources that were accessed online (see reference list).

20) Table 2. Might be better to use Deutsche Post categories in the Table since these were the ones actually used, and give corresponding United States Postal Service categories in the footnotes.

Under which category are those individuals who returned the questionnaires without consent? 'Breakoff/Implicit Refusal'? Might be worth adding a comment about this to the footnotes, since this group is mentioned in the text.

Response: Thank you for bringing this to our attention. The Postal Service Codes used were clearly the German ones. For international comparison we have stated the United States Postal Service categories which are identical to the German ones (in the stated cases). To make the categories more neutral though we have changed the names of the categories in Table 1.

Cases of questionnaires being sent back without the signed consent form were classified under the category “Miscellaneous”. We added a comment about this to the footnotes of Table 1.

21) Table 3. Suggest specifying 'n recruited', 'n responded' or similar, rather than just n.

Response: ‘n responded’ is the correct specification. We now specify this in Table 3.

22) Table 4. Supplementary information in column headings would be easier to assimilate if it was given in the footnotes. Please also see Page 10 comment above in relation to reference populations.

Response: We have added information for the reference population in foot notes and removed the Endnote links. See also answers on the comments number 10 and 11.

23) Figure 1 and 2. Should these include figure titles?

Response: In the initial assessment we were told by the editorial office that figures should not include figure titles.

24) General recommendations. For any acronyms that are based on German names, such as GEDA, KiGGS, DEGS and BIK, it would be good practice to give their full German names not only in the list of abbreviations, but also when the acronym is used for the first time, both in the abstract and the main article, e.g. German Health Update (Gesundheit in Deutschland aktuell or GEDA). Where this would unnecessary clutter the text, such as spelling out KiGGS and DEGS both in English and German on page 3, perhaps these acronyms could be omitted until later, if they do not add vital information at that point.
Response: We have conducted no change as we think that the provided list of acronyms is sufficient and adding all German names to the manuscript would unnecessary clutter the text.

25) There are approximately ten web addresses provided throughout the paper. Moving them all into the references would declutter the text, help improve the flow and make it easier for the reader who would like to look up further information, as they would find all the links in one place.

Response: We have moved all web links from text to the reference lists.

26) It may be helpful to read the article from the point of view of a colleague who is not familiar with the terms or services specific to Germany or the field, and predict potential questions that could arise. Some of the suggestions above may help address this and improve readability of this otherwise high quality article, which will be of value to those facing similar issues and decisions.

Response: Thank you for all the suggestions made, it has helped us to improve the manuscript considerably.

We hope that the manuscript now can be published in the Archives of Public Health Journal.

Kind regards,

Cornelia Lange (corresponding author on behalf of all authors)