Author's response to reviews

Title: Effect of questionnaire length, personalisation and reminder type on response rate to a complex postal survey: a randomised controlled trial

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Response to Reviewers Comments

Effect of questionnaire length, personalisation and reminder type on response rate to a complex postal survey: a randomised controlled trial

Reviewer: Phil Edwards

1) Methods, page 7: As per CONSORT guidelines the authors should describe their methods of randomisation, and explain how allocation was concealed from the researchers conducting the study.

Using a computer generated randomisation sequence participants were randomised to one of the four study groups. This has now been clarified in the manuscript (see page 7, line 91).

The study coordinators charged with receipting the return of completed surveys were blinded to two of the three survey design factors; the degree of personalisation and the type of reminder used. Although the long and short questionnaires were almost identical in appearance, the long survey weighed more and therefore it was impossible to conceal survey length from the study coordinators. The researcher who conducted data analysis was not involved in the receipt of questionnaires. This has been clarified in the manuscript (see page 9, lines 135 – 140).

2) Discussion: the description of the two questionnaires (given on page 8) suggests that the short questionnaire is not a subset of the longer questionnaire, but in fact comprises different questions. If so, we cannot attribute the increased odds of response to the shortness of the questionnaire alone, and some of the effect may be due to asking different questions. Some comment about potential confounding should be included.

For the most part the two questionnaires included identical instruments; the short version simply contained fewer items for each instrument. This has been clarified in the manuscript along with a more explicit reference to the corresponding additional file included with the manuscript. See page 8, lines 119 & 123.

There was one important difference between the two versions of the questionnaire. The measure of physical activity used in the long version of the questionnaire was the Recent Physical Activity Questionnaire (RPAQ) – a detailed, domain specific (household, work, transport, recreation) measure which asks participants to recall their physical activity over the previous 4 weeks. Conversely, in the short version of the questionnaire the short version of the IPAQ was used. The IPAQ asked participants to recall the time spent in physical activity () over the last week. While both instruments provide a measure of total physical activity, it is possible that the difference between these two instruments impacted on the response rate, independent of questionnaire length. We have added a discussion of this to the manuscript. See page 116, lines 310 – 315.

Minor essential revisions

3) Abstract: the p-value for the comparison of item non-response should be included (9.8% vs 5.8%) or alternatively a confidence interval for the difference.

The p value (p=0.04) for the comparison has been included (see Abstract, line 25).

4) Methods, page 8: the power calculation should include the baseline response from which a 10% difference can be detected (e.g. from 17% to 27%).

In calculating the required sample size, we assumed a response rate of 50% for the design factor under investigation and a response rate of 40% for the comparison design factor. Specifying an alpha level of .05 and a beta of 80%, 816 participants were required to determine statistically significant differences between the factors. As the margin of error is maximized when probability = 0.5, this estimation allowed for sufficient power to
detect a statistically significant effect at any percentage as long as the difference between the groups was at least 10%. This has been clarified in the manuscript. See page 8, lines 105-109 [s1].

5) Figure 1: something may be wrong with my printer, but one number appears to be wrong (NR to non personalised long questionnaire N=22 but should be N=226) and some numbers seem to be missing (the numbers of non-respondents allocated to postcard or pack should be included).

We thank the reviewer for identifying these omissions; Figure 1 has been amended accordingly.

6) Figure 2: this figure presents numbers responding over time for the four conditions but as the lines overlap the patterns are not all clear.

Figure 2 has been amended to reflect the above comments; it now provides a clearer representation of the data.

Reviewer: Jeanette Ziegenfuss

Minor Essential Revisions:

Abstract, background and Background, line 5: You state that minimizing non-response is important to ensure the generalizability of inferences. As nothing short of full participation ensures this absolutely, suggest softening this statement.

We have amended these statements accordingly. See page 4, paragraph 1.

Methods: procedures, line 127: Explain more about the consent form. Is it needed for a survey to be considered a complete? How often, if at all, is a survey returned without a consent form?

We took return of a completed survey as consent, regardless of whether or not a completed consent form was also returned. The consent form was used to identify those participants who agreed to be re-contacted latter to participate in additional, optional studies. Twenty-two participants did not return a completed consent form. This has been included in the manuscript. See page 9, lines 145 -147

Methods, line 149/Discussion: How sensitive were the results regarding item non-response to the assumption that implausible of otherwise errant results were considered missing?

Approximately 4% of all missing values were implausible. We have now included this in the results. See page12, line 216.

Discussion: Throughout it would be important to explicitly state the need of additional data included in the longer questionnaire, both with respect to the present study and the importance of this question theoretically. If important data elements are not captured to achieve a shorter questionnaire, the data is rendered less valuable, even with a higher response rate.

In the discussion we argue that ‘researchers should remain mindful of questionnaire length and carefully consider the trade off between the value of additional questions and the value of a larger more representative sample’, addressing the importance of this question theoretically. We have included additional information relating to the effect of questionnaire length on the data collected in our study more specifically. See page 14, lines 270 – 274 [s2].

Discussion: Relatively deprived and relatively affluent communities were purposefully sampled. How, if at all, might more mid-range communities have differed?
We did not set out to examine differences in the response rate depending on area-level SES. We selected one relatively deprived and one relatively affluent community from each city to maximise the representativeness of our findings. In all cases the communities selected were not extreme in their level of affluence or depravity. We have made this clearer throughout the manuscript.

Consistent with research examining the influence of socioeconomic status on participation in research, we speculate that the response rate for a mid-range community would be between the response rates achieved for the relatively deprived and relatively affluent communities. We have included discussion of this to the manuscript. See page 16, lines 317 – 320.

Discretionary Revisions:

Background, paragraph 1, line 3: suggest inserting “relatively” before unobtrusive"

The word relatively has been added. See page 4, line 3


We thank the reviewer for alerting us to this reference. It provides important information on the influence of survey length on response rate, however it reports on findings from a study evaluating the impact of questionnaire length when the length of the questionnaire is relatively short (<4 pages). The research we draw on examines the impact of questionnaire length when questionnaires are over 12 pages. For this reason we do not feel that it is sufficiently relevant to be included in the background material.

Background, last paragraph, line 62: suggest construing in terms of unit and item non-response instead of “response rate and quality”

The terms unit and item non-response have replaced response rate and quality (see page 6, line 63)

Reviewer: Timothy P Johnson

A few compulsory questions the author(s) should be asked to answer include the following:

• Although they report the number of pages included in the long vs. short versions of their questionnaire, they fail to indicate specifically how many items each version asks respondents to complete.

  We felt the best way to accurately yet concisely outline the differences between the two questionnaires was to include an additional file with the manuscript. We have made a more explicit reference to this additional file in the manuscript. See page 8, line 123.

• In Table 2, it was interesting to note that, although the overall item non-response rate favoured the short version of the questionnaire, section G (which asked for individual and household demographic information) actually produced a significantly higher non-response rate for the short version. This is not reported or discussed in text and it seems to be a curious omission.

  We have added a section in the discussion regarding this. See page 15, lines 297 – 300.