

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	The pandemic of online research in times of COVID-19
AUTHORS	de man, jeroen; Campbell, Linda; Tabana, Hanani; Wouters, Edwin

VERSION 1 – REVIEW

REVIEWER	Ilaria Montagni Bordeaux Population Health U1219, University of Bordeaux, France
REVIEW RETURNED	18-Nov-2020

GENERAL COMMENTS	My main concern about your short paper is that from the Abstract you concentrate on Likert scales. The problem you are addressing concerns all online questionnaire items in general. I will revise the paper with a broader perspective. The selection bias section is the clear example that what you are commenting on is a problem of online questionnaires in general, independently from the type of question item. Questionnaires are not exclusively composed of Likert items. Provide for suggestions 2, 3 and 5 some examples related to Covid-19. Mention in the last paragraph the Covid-19 context in order to be consistent with your title and the objective of your paper.
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REVIEWER	Daryl B. O'Connor University of Leeds, UK
REVIEW RETURNED	18-Nov-2020

GENERAL COMMENTS	<p>This is a timely, stimulating and provocative “communication article”. The authors raise a number of important points; however, I felt that the article could be a little more balanced and the tone altered to be more positive and supportive.</p> <p>In the introduction the authors state “While using this approach initially seems straightforward, it has a longstanding track record of challenges and uncertainties, from setting up the research to the analyses and reporting of results”. Please cite the supporting evidence/references.</p> <p>A general point – the authors should acknowledge that by adopting rigorous methods and having clear and appropriate research question there is nothing wrong with using online methods.</p> <p>Selection bias:</p> <p>It’s important that the authors acknowledge that using online methods is not new and there is already a great deal known about using these approaches (e.g., via MTurk, Prolific etc.).</p>
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	<p>Paragraph #1 in selection bias section: The second sentence sounds speculative and should be removed unless the authors can provide supporting evidence.</p> <p>The authors should cite the recent expert led position paper on Research Priorities for COVID-19 for psychological science paper which highlights the importance of high quality, open and rigorous research standards including a whole table on methods and approaches, importantly conducting online research is discussed. This is likely to be helpful to readers of this communication article https://onlinelibrary.wiley.com/doi/full/10.1111/bjop.12468</p> <p>The use of Likert scales:</p> <p>The authors state: "If and how Likert scales should be used in the assessment of latent variables has been subject of an ongoing debate". Please provide a reference.</p> <p>"3) Beyond validity of a scale" is a little unclear. Perhaps start with "Researchers should also...."</p> <p>In Point 5), it would be good if this could be separated into two paragraphs for ease of reading.</p> <p>Conclusion: Similar to my earlier point, I'd suggest that the conclusion and the Abstract is amended a little to be more supportive and positive. It would be good to recognise that online methods can be very useful, but equally it is important to be aware of, and attempt to mitigate their potential shortcomings and drawbacks.</p>
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REVIEWER	Professor Helen Ball Durham University, UK
REVIEW RETURNED	26-Nov-2020

GENERAL COMMENTS	<ul style="list-style-type: none"> • Are the issues raised by the article important to BMJ Open's broad and international readership that includes patients, researchers, policy makers, health professionals, and doctors of all disciplines? Yes – the issues raised affect all who may conduct research, act on the results of research, or be affected by research outcomes. If online studies are conducted uncritically without methodological rigour the results will be unreliable. • Is the article interesting and offering novel insights that have not been sufficiently considered in the existing published literature? Yes – while previous articles have considered the pitfalls of online surveys, the propensity to use Likert-scales and the problems therein have not been addressed. • Is the article well written and is the content clearly presented? Does it have a clear message? Yes – the article is well-written and the message is clear: don't use online surveys as a research tool unless you really know what you are doing! • Will the article help medical researchers, patients or related groups of readers to make better decisions? Yes – the article will help all groups mentioned better assess online studies and identify poor practice.
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	<ul style="list-style-type: none"> • Does the article demonstrate one or more of the following values: transparency, openness, collaboration, innovation, reproducibility, patient/ public involvement, improving peer review and journal best practice, and reducing research waste? <p>The article demonstrates openness.</p> <p>In a similar paper (pre-Covid-19) about Online Surveys I drew researchers' and reviewers' attention to the CHERRIES checklist (similar to PRISMA, CONSORT, and other checklists) for robust reporting the results of online surveys. This could be usefully drawn to readers' attention here: Eysenbach, G. (2004). Improving the quality of web surveys: The checklist for reporting results of internet e-surveys (CHERRIES). Journal of Medical Internet Research, 6(3), e34. doi:10.2196/jmir.6.3.e34</p>
REVIEWER	Jonald Pimentel University of Southern Mindanao Philippines
REVIEW RETURNED	09-Dec-2020
GENERAL COMMENTS	<p>Issue: Are the methods described sufficiently to allow the study to be repeated?</p> <p>On the issue of selection bias, online surveys sometimes suffer non-response due to some decline to respond, thus issues of missingness should be address whether it is missing at random (MAR) or Missing not at random or it can be nonignorable because the nonresponse is affected to some latent variable hence it will affect results in the conclusion. Further, potential abuse like identity theft should be address for the survey distributed online like in social media. It is also worth mentioning that in constructing questionnaires, content validity should also be address as well as running reliability test to address highly correlated items.</p> <p>Issue :Are the study limitations discussed adequately?</p> <p>Online is very limited due to selection bias, hence the authors should thoroughly include a well defined limitation of the study as not to affect the generalizability of the conclusion.</p> <p>On the use of Likert Scales. It is important to state the assumption of the used of the scale whether it is ordinal or interval so as to foresee the appropriate statistical method in the analysis. Also in the use of odd and even scales, example in 5 point scales the use of 3 as neutral should be avoided since it is a potential missing data since no information are obtain in that response. Rather, even Likert scale skill is encourage</p> <p>In general the paper have a good emphasis for online research.</p>

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Ilaria Montagni, Inserm Research Center for Epidemiology and Biostatistics (U897) , University of Bordeaux

Dear authors,

My main concern about your short paper is that from the Abstract you concentrate on Likert scales. The problem you are addressing concerns all online questionnaire items in general. I will revise the paper with a broader perspective. The selection bias section is the clear example that what you are

commenting on is a problem of online questionnaires in general, independently from the type of question item. Questionnaires are not exclusively composed of Likert items.

We agree with the reviewer that online surveys can include other types of questions apart from Likert scales. In particular the first part of the commentary (regarding selection bias) can relate to any type of questions. We made modifications to the commentary to make clear that these issues could relate to different types of survey questions.

However, from what we read and learned from colleagues, the use of rating scales has been a popular approach in assessing the psychosocial impact of COVID-19. We therefore think that it is worth to add an extra part that specifically addresses the use of such scales. We agree with the reviewer that a focus on 'Likert scales' may be too narrow, and hence, we propose to redefine our focus to 'rating scales'. We modified this throughout the manuscript.

"Provide for suggestions 2, 3 and 5 some examples related to Covid-19."

We assume that the reviewer's comment relates to the suggestions made regarding selection bias (i.e. the first part of the commentary). We agree with the reviewer that concrete examples could add more clarity to these suggestions. For each of these points, an example from the literature was added.

"Mention in the last paragraph the Covid-19 context in order to be consistent with your title and the objective of your paper."

We thank the reviewer for this suggestion and propose to add the following sentence to the conclusion:

"In conclusion, lack of in-person access to participants and timeliness may have pushed researchers to use online surveys and rating scales in particular."

Reviewer: 2

Dr. Daryl O'Connor, University of Leeds

Comments to the Author:

This is a timely, stimulating and provocative "communication article". The authors raise a number of important points; however, I felt that the article could be a little more balanced and the tone altered to be more positive and supportive.

We thank the reviewer for appreciating our work. We added modifications throughout the commentary to make it more balanced and supportive of online research.

In the introduction the authors state "While using this approach initially seems straightforward, it has a longstanding track record of challenges and uncertainties, from setting up the research to the analyses and reporting of results". Please cite the supporting evidence/references.

We added the following references to support this statement:

Eysenbach G. Improving the quality of web surveys: The Checklist for Reporting Results of Internet E-Surveys (CHERRIES) [Internet]. Vol. 6, Journal of Medical Internet Research. Journal of Medical Internet Research; 2004 [cited 2020 Aug 31]. p. e34. Available from: <https://www.jmir.org/2004/3/e34/>
Hobart JC, Cano SJ, Zajicek JP, Thompson AJ. Rating scales as outcome measures for clinical trials in neurology: problems, solutions, and recommendations. Vol. 6, Lancet Neurology. Lancet Publishing Group; 2007. p. 1094–105.

A general point – the authors should acknowledge that by adopting rigorous methods and having clear and appropriate research question there is nothing wrong with using online methods.

We agree with the reviewer and added the following sentence to the introduction:

“This approach may indeed circumvent barriers in data collection if based on rigorous methods and a clear and appropriate research question.”

Selection bias:

It's important that the authors acknowledge that using online methods is not new and there is already a great deal known about using these approaches (e.g., via MTurk, Prolific etc.).

We agree with the reviewer that the problem of selection bias in online research has been discussed before. We included the following statement in the second sentence of the first paragraph after the subtitle 'selection bias in online research'.

“Potential threats to sample validity are well known when using online studies.”

Paragraph #1 in selection bias section: The second sentence sounds speculative and should be removed unless the authors can provide supporting evidence.

We removed this sentence.

The authors should cite the recent expert led position paper on Research Priorities for COVID-19 for psychological science paper which highlights the importance of high quality, open and rigorous research standards including a whole table on methods and approaches, importantly conducting online research is discussed. This is likely to be helpful to readers of this communication article <https://onlinelibrary.wiley.com/doi/full/10.1111/bjop.12468>

The paper proposed by the reviewer is an important reference and was added to support the first sentence of the introductions:

“Assessment of the biopsychosocial impact of the COVID-19 pandemic has been identified as a pressing need”

The use of Likert scales:

The authors state: “If and how Likert scales should be used in the assessment of latent variables has been subject of an ongoing debate”. Please provide a reference.

The following references was added:

Kampen JK. Reflections on and test of the metrological properties of summated rating, Likert, and other scales based on sums of ordinal variables. *Meas J Int Meas Confed* [Internet]. 2019;137:428–34. Available from: <https://doi.org/10.1016/j.measurement.2019.01.083>

“3) Beyond validity of a scale” is a little unclear. Perhaps start with “Researchers should also....”

We rephrased this sentence based on the reviewers' suggestion

“For cross-validation purposes, researchers may also consider using scales that have been used in large representative surveys in their study setting (e.g. the Demographic and Health Survey, the European Social Survey, etc.).”

In Point 5), it would be good if this could be separated into two paragraphs for ease of reading.

We separated the initial paragraph in point 5: a paragraph discussing cross-comparison and the need for invariance. In point 6, we added more detail on how such invariance can be established.

Conclusion: Similar to my earlier point, I'd suggest that the conclusion and the Abstract is amended a little to be more supportive and positive. It would be good to recognise that online methods can be very useful, but equally it is important to be aware of, and attempt to mitigate their potential shortcomings and drawbacks.

We made the following modification to address the reviewers' suggestion:

"While using these methods can be particularly useful during the current pandemic,..."

Reviewer: 3

Dr. Helen L. Ball, University of Durham, University of Durham

Comments to the Author:

- Are the issues raised by the article important to BMJ Open's broad and international readership that includes patients, researchers, policy makers, health professionals, and doctors of all disciplines?

Yes – the issues raised affect all who may conduct research, act on the results of research, or be affected by research outcomes. If online studies are conducted uncritically without methodological rigour the results will be unreliable.

- Is the article interesting and offering novel insights that have not been sufficiently considered in the existing published literature?

Yes – while previous articles have considered the pitfalls of online surveys, the propensity to use Likert-scales and the problems therein have not been addressed.

- Is the article well written and is the content clearly presented? Does it have a clear message?

Yes – the article is well-written and the message is clear: don't use online surveys as a research tool unless you really know what you are doing!

- Will the article help medical researchers, patients or related groups of readers to make better decisions?

Yes – the article will help all groups mentioned better assess online studies and identify poor practice.

- Does the article demonstrate one or more of the following values: transparency, openness, collaboration, innovation, reproducibility, patient/ public involvement, improving peer review and journal best practice, and reducing research waste?

The article demonstrates openness.

In a similar paper (pre-Covid-19) about Online Surveys I drew researchers' and reviewers' attention to the CHERRIES checklist (similar to PRISMA, CONSORT, and other checklists) for robust reporting the results of online surveys. This could be usefully drawn to readers' attention here: Eysenbach, G. (2004). Improving the quality of web surveys: The checklist for reporting results of internet e-surveys (CHERRIES). *Journal of Medical Internet Research*, 6(3), e34. doi:10.2196/jmir.6.3.e34

We are grateful to the reviewer for the positive feedback and we added the use of the CHERRIES checklist to our suggestions (see suggestion three under "selection bias of online research")

Reviewer: 4

Dr. Jonald L. Pimentel, University of Southern Mindanao

Comments to the Author:

Issue: Are the methods described sufficiently to allow the study to be repeated?

On the issue of selection bias, online surveys sometimes suffer non-response due to some decline to respond, thus issues of missingness should be address whether it is missing at random (MAR) or Missing not at random or it can be nonignorable because the nonresponse is affected to some latent

variable hence it will affect results in the conclusion.

We thank the reviewer for making this interesting point. We agree that the issue of missing data is very important and several analogies have been drawn between selection bias and missing data. However, the suggestions regarding selection bias include preventive measures and not how to deal with data that may suffer from such bias. As we state in the first paragraph under the subtitle selection bias, addressing selection bias may require complex analyses, if possible to correct at all. Including the discussion on how to deal with missing data would require a much longer commentary and therefore we decided to limit the scope to preventive measures rather than post-hoc analysis.

Further, potential abuse like identity theft should be address for the survey distributed online like in social media.

Important point, but we think that this is beyond the scope of the article, as it relates to an ethical issue rather than a methodological one.

It is also worth mentioning that in constructing questionnaires, content validity should also be address as well as running reliability test to address highly correlated items.

We agree with the reviewer: the issue of content validity was added to the second point under measurement scales.

We discuss the issue of reliability under point 5. We agree that highly correlated items can pose problems. However, we think that a discussion on this issue may add too much detail to the commentary since it would require at least an additional paragraph to explain why and how highly correlated may affect outcomes. We therefore would rather not include this specific issue as a suggestion. We hope the readers understand that they can consult other resources for more detail to which we refer in the first paragraph after the subtitle 'the use of rating scales'.

Issue :Are the study limitations discussed adequately?

Online is very limited due to selection bias, hence the authors should thoroughly include a well defined limitation of the study as not to affect the generalizability of the conclusion.

We agree with the reviewer that being transparent about the procedures researchers used is paramount. The following sentence was added to suggestion three under 'selection bias of online research' to address this:

"If researchers choose to go ahead, robust reporting of the study procedures in the methods and discussion section is essential. The CHERRIES checklist may serve as a useful guide for this matter (2)."

On the use of Likert Scales. It is important to state the assumption of the used of the scale whether it is ordinal or interval so as to foresee the appropriate statistical method in the analysis.

We agree with the reviewer that the assumption of the type of scale is important. This has led to an ongoing debate with opposing views among prominent methodologist. As we mention in the first paragraph on the use of Likert Scales, we prefer not to participate in this debate and assume that Likert scales can be used. Our intention was rather to highlight some of the potential drawbacks of Likert scales rather than to present how they should be analyzed for which we refer to other references.

Also in the use of odd and even scales, example in 5 point scales the use of 3 as neutral should be avoided since it is a potential missing data since no information are obtain in that response. Rather,

even Likert scale skill is encourage

We agree with the reviewer that, in some cases, the neutral answer option of odd scales may correspond to potentially missing since, for example, it might be selected by participants who don't understand the question or who don't want to answer. However, from another perspective, one may think that a "neutral" answer also does provide information on the participants' stance. In agreement with the reviewer, we think that the answer options being odd or even is an important consideration in the development of Likert scales. However, we think that recommending to use only even Likert scales may trigger controversial reactions and we think that a discussion on the ideal number of items is scale dependent and requires a discussion that is beyond the scope of this commentary.

In general the paper have a good emphasis for online research.

We thank the reviewer for his appreciation of our commentary.

VERSION 2 – REVIEW

REVIEWER	Ilaria MONTAGNI Bordeaux Population Health UMRS1219, University of Bordeaux-Inserm
REVIEW RETURNED	18-Jan-2021
GENERAL COMMENTS	<p>The new manuscript has improved and reviewers' comments have been taken into account. I confirm the interest of the paper for researchers in particular. The article is well-written and the message is clearer. The value of reproducibility is present, as well as the reduction of research waste.</p> <p>I particularly appreciate the fact that authors have replaced "Likert-scales" with rating scales in general, the article addressing a wider scope. The Introduction section is now more relevant and consistent with the objective of the paper.</p> <p>Personally, I would not "self-mention" a study from one of the authors (ref 6), but I recognize it is relevant for explaining solutions concerning selection bias.</p>
REVIEWER	Daryl O'Connor University of Leeds
REVIEW RETURNED	19-Jan-2021
GENERAL COMMENTS	The authors have done a good job responding to each of the reviewers' comments
REVIEWER	Jonald Pimentel University of Southern Mindanao Philippines
REVIEW RETURNED	26-Jan-2021
GENERAL COMMENTS	I think the authors fully understood what they try to convey to potential online researchers especially the challenges and dangers of doing online studies using rating scales.