PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	A cross-sectional analysis to explore the Awareness, Attitudes and Actions of UK adults at high risk of severe illness from COVID-19
AUTHORS	Flint, Stuart; Brown, Adrian; Tahrani, Abd; Piotrkowicz, Alicja; Joseph, Anny-Claude

VERSION 1 – REVIEW

REVIEWER	Mary O'Kane Leeds Teaching Hopsitals NHS Trust, UK
REVIEW RETURNED	08-Oct-2020

GENERAL COMMENTS	I enjoyed reading your paper. I only have one observation. It has taken many healthcare providers a significant length of time to change to a different platform for consultations. As this survey was carried out between mid march and end of May, I suspect that is the reason for the higher prevalance of telephone consultations for patient care. As you mention, those who experience digital poverty will be further disdavantaged. I suspect this was also a highly motivated and well informed group who also wished to remain well; whereas I think those is the more deprive

REVIEWER	Kun Tang Vanke School of Public Health, Tsinghua University, China
REVIEW RETURNED	23-Oct-2020

GENERAL COMMENTS	In this manuscript, authors explored the impact of COVID on awareness, attitudes and actions of people at high risk for COVID with a UK population. The authors deployed a sound study design, well designed questionnaire, and a good analysis procedure. Thus they reach a convincing conclusion arguing that COVID has negative impact on many aspects of people's access to healthcare, mental health and lifestyle behaviours, especially for the negative cluster of people categorized by AI algorithm. I would suggest that this manuscript meets the publication criteria for the BMJ Open if all comments below were responded effectively. Major comments 1. On page 11 paragraph 1, the authors plotted histograms for each high-risk indicator and placed the plots in supplementary materials. However, figures were only plotted for individuals at the high risk group (for example, BMI > 40). It should also be informative to see the pattern for the low risk group (e.g., BMI < = 40), and compared the difference of patterns between high risk and low risk group. For the disease outcomes, I would suggest a

	common control group which are consist of participants without self-reported diseases. I would suggest to compared the difference of patterners (for supplementary figure 7 – 12) between high and low risk groups because it is important to explore whether the change of AAA of participants are stratified by any of the risk factors. I see that the authors may have done this analysis and report the results in the following paragraph (page 11, paragraph 2). But the way they report their results is not clear enough, and is confusing. Firstly, in reporting any OR value, the reference group should always be addressed. For participants with CKD, what was the reference group? Was it participants without CKD, or participants without any diseases? Readers could not judge from the current manuscript. In addition, do always report the confidence interval along with the OR estimate and P value. Moreover, authors mentioned 'older participants' in this paragraph. I suppose this is for participants older than 70 years, and I suggest always use the specific term for risk factors when reported results, and avoid using this fuzzy way such as older participants, because they are not specific enough. Secondly, I would suggest authors list all of these result in a table which is clearer for readers to read and compare. 2. In this paragraph, the authors used $P < 0.05$ as their significant criteria. Although I did not count, they conducted large amounts of hypothesis testing in this paper. In the situation when multiple hypothesis testing were implemented, the criteria should be adjusted in order to keep the false positive rate at 0.05. I would suggest the authors employ suitable multiple testing corrections (e.g., Bonferroni correction) and adjust the P level. As I mentioned above, reported P values without confidence interval makes little sense. And indeed some journals discourage authors from reporting P values. So, please report the CI with all other values. Minor comments 1. Number of participants for continuous BMI in Table 1 (Page 9, Line 9) was 1003, however, it was 1026 for the dichotomous BMI on page 9 line 46 ~ 50. Please check this inconsistency. 2. Please report confidence intervals along with coefficients or OR values in all tables. 3. In Table 5, some P values were reported as 0, while they shouldn't be in fact. Please report them as < 0.001 for example.

REVIEWER	David De Coninck KU Leuven, Belgium
REVIEW RETURNED	30-Oct-2020

GENERAL COMMENTS	I enjoyed reading your article titled 'Awareness, Attitudes and Actions of UK adults at high risk of severe illness from COVID-19'. Overall, I believe the article is timely, and investigates a relevant subgroup of the population in the context of the current crisis. It is a well-written article, particularly in the discussion. However, I would argue that in the initial stages of the article (including the key points, article summary) it it sometimes difficult to gauge exactly what you'll be investigating. You mention the general idea of investigating the impact of the COVID-crisis on at-risk people, but sometimes you do not precisely specify which impacts you'll be investigating. There is obviously a huge range of potential

	avenues of research, but it would be better to more clearly define yours early on. I found your analysis to be rather descriptive, for the most part. I would have been more interested to see the multivariate analyses in the text, rather than the supplemental material. For example, Table 3 is a descriptive overview of the changes in clinical management, but the results your report in-text are more interesting than the table. I would move the descriptive table back, and bring the analysis forward.

VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1
Reviewer Name
Mary O'Kane

Institution and Country
Leeds Teaching Hopsitals NHS Trust, UK

Please state any competing interests or state 'None declared':
None declared

Comments to the Author
I enjoyed reading your paper.
I only have one observation. It has taken many healthcare providers a significant length of time to change to a different platform for consultations. As this survey was carried out between mid march and end of May, I suspect that is the reason for the higher prevalance of telephone consultations for patient care. As you mention, those who experience digital poverty will be further disdavantaged.
Thank you for your comment. We agree that the timeframe may have impacted the types of care people were receiving and also that people experiencing digital poverty may have not have been recruited due to the online survey methodology used. We had mentioned this in the limitation section of the manuscript, and now that we have revised the strengths and limitations section after the abstract as requested by the editor, we've included a bullet point on digital poverty here also. Page 16

I suspect this was also a highly motivated and well informed group who also wished to remain well; whereas I think those is the more deprive
We agree, the online survey methodology and self-recruitment – like any other research that uses self-recruitment – may reflect a more motivated sample. Page 16

Reviewer: 2
Reviewer Name
Kun Tang

Institution and Country
Vanke School of Public Health, Tsinghua University, China

Please state any competing interests or state 'None declared':

None

Comments to the Author
In this manuscript, authors explored the impact of COVID on awareness, attitudes and actions of people at high risk for COVID with a UK population. The authors deployed a sound study design, well designed questionnaire, and a good analysis procedure. Thus, they reach a convincing conclusion arguing that COVID has negative impact on many aspects of people's access to healthcare, mental health and lifestyle behaviours, especially for the negative cluster of people categorized by AI algorithm. I would suggest that this manuscript meets the publication criteria for the BMJ Open if all comments below were responded effectively.

Major comments
1. On page 11 paragraph 1, the authors plotted histograms for each high-risk indicator and placed the plots in supplementary materials. However, figures were only plotted for individuals at the high risk group (for example, BMI > 40). It should also be informative to see the pattern for the low risk group (e.g., BMI < = 40), and compared the difference of patterns between high risk and low risk group. For the disease outcomes, I would suggest a common control group which are consist of participants without self-reported diseases.
All participants identified as in a high-risk group based on at least one of the UK Government criteria or self-identified (e.g., mental health). Participants with a BMI < 40 would therefore have another high-risk factor, and thus, are still at 'high risk'. Our analysis is therefore exploring any differences between the high-risk groups or people with multiple conditions or factors of high risk. Thus, there isn't a low-risk group in the study to plot.
We do not have a control group in this study (i.e., people without a high-risk factor). This study is exploring the impact on people at high risk only with inquiry specific to the impact on healthcare access, medications or elective surgery.

I would suggest to compared the difference of patterners (for supplementary figure 7 – 12) between high and low risk groups because it is important to explore whether the change of AAA of participants are stratified by any of the risk factors. I see that the authors may have done this analysis and report the results in the following paragraph (page 11, paragraph 2). But the way they report their results is not clear enough, and is confusing. Firstly, in reporting any OR value, the reference group should always be addressed. For participants with CKD, what was the reference group? Was it participants without CKD, or participants without any diseases? Readers could not judge from the current manuscript. In addition, do always report the confidence interval along with the OR estimate and P value. Moreover, authors mentioned 'older participants' in this paragraph. I suppose this is for participants older than 70 years, and I suggest always use the specific term for risk factors when reported results, and avoid using this fuzzy way such as older participants, because they are not specific enough.

Secondly, I would suggest authors list all of these result in a table which is clearer for readers to read and compare.
We thank the reviewer for the suggestions. We have included tables with the results which include the confidence intervals for each odds ratio (See Supplementary Tables 1-4). Results section pages 6-12. All participants in the study sample belonged to at least one high-risk group; thus, we are unable make inferences comparing high- and low-risk groups. In each scenario the reference group consists of participants who do not belong to the specified high-risk group. We have also clarified our sentences that refer to 'older participants'. Page 5.
2. In this paragraph, the authors used P < 0.05 as their significant criteria. Although I did not count, they conducted large amounts of hypothesis testing in this paper. In the situation when multiple hypothesis testing were implemented, the criteria should be adjusted in order to keep the false positive rate at 0.05. I would suggest the authors employ suitable multiple testing corrections (e.g.,

Bonferroni correction) and adjust the P level. As I mentioned above, reported P values without confidence interval makes little sense. And indeed some journals discourage authors from reporting P values. So, please report the CI with all other values.
Thank you for your comment. In alignment with the review, we have reported the confidence intervals and have included them with each odds ratio. Results section pages 6-12

Minor comments
1. Number of participants for continuous BMI in Table 1 (Page 9, Line 9) was 1003, however, it was 1026 for the dichotomous BMI on page 9 line 46 ~ 50. Please check this inconsistency.
We have verified the sample sizes in both lines. Only 1003 participants provided heights and weights which we were able to use for the continuous BMI calculation.
2. Please report confidence intervals along with coefficients or OR values in all tables.
We have included the confidence intervals for each odds ratio.

3. In Table 5, some P values were reported as 0, while they shouldn't be in fact. Please report them as < 0.001 for example.
Thank you for your comment and we agree. We have amended these to <0.01 in the table. Page 14.

Reviewer: 3
Reviewer Name
David De Coninck

Institution and Country
KU Leuven, Belgium

Please state any competing interests or state 'None declared':
None declared

Comments to the Author
I enjoyed reading your article titled 'Awareness, Attitudes and Actions of UK adults at high risk of severe illness from COVID-19'. Overall, I believe the article is timely, and investigates a relevant subgroup of the population in the context of the current crisis.

It is a well-written article, particularly in the discussion. However, I would argue that in the initial stages of the article (including the key points, article summary) it it sometimes difficult to gauge exactly what you'll be investigating. You mention the general idea of investigating the impact of the COVID-crisis on at-risk people, but sometimes you do not precisely specify which impacts you'll be investigating. There is obviously a huge range of potential avenues of research, but it would be better to more clearly define yours early on.
Thank you for your comment. We have added to the end of the introduction to specific that our focus is the impact of the COVID-19 lockdown on access to healthcare, health and lifestyle behaviours and mental health amongst UK adults identified as at high risk of severe illness from COVID-19. Page 4.

I found your analysis to be rather descriptive, for the most part. I would have been more interested to see the multivariate analyses in the text, rather than the supplemental material. For example, Table 3 is a descriptive overview of the changes in clinical management, but the results your report in-text are more interesting than the table. I would move the descriptive table back, and bring the analysis forward.
In line with the reviewer's comment, we have moved the findings of the multivariable analysis forward prior to each corresponding table. We have also moved the description of the first statistical analysis and findings relating to risk mitigating behaviours, concerns about COVID-19 and

interactions with others from the supplementary materials to the main paper. Results section pages 6-12.

VERSION 2 – REVIEW

REVIEWER	Kun Tang Vanke School of Public Health Tsinghua University China
REVIEW RETURNED	27-Nov-2020

GENERAL COMMENTS	Reading through the revised version is enjoyable. The research question is of good value, and well explored by high quality research design and data analysis. Main results are now presented in an appropriate way. I would suggest accept this paper.

REVIEWER	David De Coninck KU Leuven, Belgium
REVIEW RETURNED	15-Nov-2020

GENERAL COMMENTS	I was happy to see the revisions made to the manuscript. They adequately address the earlier concerns I had, and I feel the paper is now ready for publication. Thank you for the opportunity to review this interesting paper.