PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	How COVID-19 has affected general practice consultations and income – General Practitioner cross-sectional population survey evidence from Ireland.
AUTHORS	Homeniuk, Robyn; Collins, Claire

VERSION 1 – REVIEW

REVIEWER	Andrew Bonney University of Wollongong Australia
REVIEW RETURNED	01-Oct-2020

GENERAL COMMENTS	Thank you for the opportunity to review this useful and informative paper. The paper is well written, and covers the important topic of COVID-19 related challenges and changes to general practice. The intended outcomes are clearly articulated and addressed in the Results and Discussion sections. The survey sample size and response rates were encouraging. The Discussion stays within the bounds of the results to hand and the limitations are appropriately addressed. A minor concern I had was the weight given to non-peer reviewed references in lines 37 in page 3 in the Introduction. Reference (16) being is a newspaper report and I felt it would be better to state something like 'GPs had been reported as quickly noticing…' I felt the two reference statements in lines 30-34 regarding the workload in Irish general practice were a little vague and could do with rewording and unpacking. My major concern was with the description of the methods, statistical analyses and presentation of the results. 1. How was the survey instrument developed? Was the instrument piloted and if so what were the pilot results and changes made? 2. Can a copy of the survey questions be made available? 3. What was the missing data proportion? 4. You have described the number of ICGP members the survey was sent to, and the proportion of the total numbers of practices in Ireland that responded. I am interested in knowing the response rate from the practices and GPs you invited. 5. Are you able to provide a comparison of available characteristics of the practices / GPs that responded and corresponding characteristic of the Irish national practice / GP population to aid assessment of generalisability? – a table would help 6. Definition of 'city, town and village' according to nationally accepted criteria 7. Rather than a series of graphs, the survey data would be more easily interpreted by a table/s with 95% confidence intervals for the means and proportions as appropriate 8. All estimates (means, proportions) should have an indication of

	uncertainty – e.g. standard errors or 95% confidence intervals. 9. The sampling method is complex. The data were collected at a practice level and then reported as means per GP or RN for the sample. It is unclear whether practices were asked for consultation numbers and telehealth numbers etc. per individual clinician and then averaged by the researchers, or provided as practice totals / practice FTEs by the practices. Either way, this is not the same as the results gained from a random sample of individual clinicians. The clustering of responses within practices affects the standard errors of the estimates and hence widens the 95% confidence intervals. This needs accounting for in the analyses. 10. The above concern becomes more critical when applied to extrapolation to national estimates. In addition significant caution should be applied to extrapolation if you are unable to adjust or weight for characteristics of your sample and I feel this needs highlighting more than you have done. 11. Comparisons between estimates (means, proportions etc.) need substantiating with 95% confidence intervals or appropriate statistical tests, incorporating adjustment for the complex sampling method. In my opinion Pearson's r is not appropriate in complex sampling methods Summary I strongly recommend that these valuable and interesting data are analysed by a statistician familiar with complex sampling analysis techniques (e.g. multi-level modelling or generalised estimating equation), the data presented in a table format with 95% confidence intervals and comparisons between estimates supported by reference to the 95% CIs or appropriate statistical analysis. Extrapolation should be adjusted or weighted to national characteristics wherever possible. As this is a potentially important and informative paper, I hope the researchers will take on board my suggestions.

REVIEWER	Susanne Reventlow Univesity of Copenhagen, Department of Public Health, Section of General Practice. Denmark
REVIEW RETURNED	05-Oct-2020

GENERAL COMMENTS	Overall, this article deals with an interesting and relevant issue, namely how COVID-19 has affected general practice consultations, stress, and income in Ireland. However, if the authors would like it to be of interest for a bigger audience, some aspects have to be elaborated and discussed more in depth, for example by employing more scientific literature on e.g. organisational aspects of general practice consultation and different types of consultations including telemedicine. Workload and stress could be discussed more as well. The discussion of challenges for general practice and primary care during the COVID-19 period needs more attention in general as a research field. Overall, the article touches on a very important problem, but there is a need for more elaboration, clarification, and in-depth discussion involving scientific literature for it to be of general interest for a bigger audience. The introduction The introduction is clearly written. I would like a more thorough description of the ways in which general practice is a part of the overall healthcare system in Ireland, however. What does it mean to

	be self-employed? How is general practice part of community-based care? Does general practice in Ireland accommodate all types of patients, and does it have the overall responsibility for the care of patients with chronic diseases? A little more background on consultation types is needed, too: telephone and emails? Video consultations? Methods: The design, method, and material are lucidly described in appropriate detail. I am a little curious, however, on the following questions: • What was the original objective of this survey? Was there a special attention to for example burn-out among general practitioners? • Is it a recurrent study conducted by ICGP? • Were the survey questions pilot tested? Has the questionnaire been used on earlier occasions? • Which topics were included in the survey and why? On page 4, the authors write, “Consultation rates include face-to-face consultations, telephone consultations, home visits and visits to nursing homes,” but later the authors state that consultations also include telemedicine and video consultations? This is not quite clear. Results It is a little difficult to follow the presentation of the results concerning the consultation. This is partly due to the applied abbreviations for the health professionals used in certain places, but also perhaps due to the way the authors refer to pre-COVID-/during COVID and first and second survey. I suggest that the things that have to do with GPs are compiled, followed by the things that have to do with the practice staff. I would also suggest that abbreviations other than GP are written in full instead. As for the section on stress for GPs – I am a little concerned here, if it is unequivocal what the term changing work practices means? The section on practice changes is primarily about decrease in profitability and initiatives to reduce expenses. Perhaps another headline would be better, since it has to do with economics. Please explain more specifically what the term formal business performance assessment denotes. A reference to literature concerning payment and organisation of primary care could be of use here. The short section concerning decline in certain patient groups might be better placed under consultation. Could the authors describe these chances in more detail? What is meant by 6´s? It does not say anything about what types of patients get what types of consultations. Discussions: Strengths and weaknesses are well reported. The authors only superficially mention some important areas for discussion, e.g. the reduced practice profit – but they have to discuss this more in depth in relation to the organisation of primary care in comparable countries. It seems like a repetition when the authors mention – again - that there is no central register data from GPs in Ireland. This is also mentioned in the section about strengths and weaknesses. In the section on implications of COVID-19, the part on challenges and organisational changes for general practice is the most interesting part of this article and could be even more elaborated concerning telemedicine, video consultations, and primary care. Video consultations provide new opportunities but also challenges for the delivery of healthcare, both in a period of great strain and

	pressure, e.g. a pandemic situation such as COVID-19, and under normal life conditions. Could the authors elaborate on these issues? A great deal of the references are not scientific literature. I would like a more scientific discussion of structural changes in relation to COVID-19 and the impact of these on general practice. Some references could be brought into that discussion with great advantage – suggestions are provided below. There is a need for some clarifications. On page 9: what do the authors mean, when they write that clinicians in primary care have used telemedicine interventions? The authors mention both telemedicine interventions, digital care and video consultations, but it is a little difficult to follow how they use these terms, and what they refer to? Some references concerning video consultations which could be included in the discussion: Thiyagarajan A, Grant C, Griffiths F, Atherton H. Exploring patients' and clinicians' experiences of video consultations in primary care: a systematic scoping review. BJGP open. 2020;4(1). 6. Leng S, MacDougall M, McKinstry B. The acceptability to patients of videoconsulting in general practice: semi-structured interviews in three diverse general practices. Journal of innovation in health informatics. 2016;23(2):141. 7. Powell RE, Henstenburg JM, Cooper G, Hollander JE, Rising KL. Patient Perceptions of Telehealth Primary Care Video Visits. Ann Fam Med. 2017;15(3):225-9. 8. Peters L, Greenfield G, Majeed A, Hayhoe B. The impact of private online video consulting in primary care. J R Soc Med. 2018;111(5):162-6. 9. Donaghy E, Atherton H, Hammersley V, McNeilly H, Bikker A, Robbins L, et al. Acceptability, benefits, and challenges of video consulting: a qualitative study in primary care. Br J Gen Pract. 2019;69(686):e586-e94.

REVIEWER	Anna Gigli IRPPS National Research Council Institute for Research on Population and Social Policies
REVIEW RETURNED	23-Oct-2020

GENERAL COMMENTS	The paper illustrates the results of a survey organized by the professional body of GPs in Ireland and addressed to GPs. The survey was answered twice: once before the COVID-19 pandemic (February 2020) and once during it (June 2020). A maximum of 1 GP for each practice answered, responses referring to practices (not GPs) were analyzed using statistical tools. The paper is interesting and results, as the author stress may add “to the knowledge base in terms of the potential impact of the COVID-19 pandemic on general practice, including on stressors and finances, in the current void of such literature”. However, I personally found difficult to check statistics without knowing some raw figures. For example, how is the average consultation number per person per year computed? What is the number of FTE GPs in the whole of the Ireland (not only those who answered the survey)? We only know that there are 3378 members registered in the professional body, but don’t know how many are active, how many are retired,

	how many work full time, etc. As a general recommendation, the authors should choose a unified way to present percentages: since many numbers are reported in the paper, I suggest to round all of them (no decimal digits). Further, several percentages are wrong: I highlighted them and I suggest the authors should implement a careful double check. Below are reported specific comments. p. 5: line 22: “During-COVID-19, consultation rates have changed significantly as has the mode of consultation. Between 1104.85 FTE GPs, the daily average per GP was 23 consultations”; line 39: “The overall average consultation rate for GPs decreased from 29 to 27per day over the same period” Figures are contradictory. p. 6: the following sentence is unclear and apparently contradictory: “Across all practice sizes, there is an expected average decrease in profitability of 35.2% and an average of 17% for an increase in profitability. Only 19% of practices were expecting an increase in profitability.” The authors should clarify p.6 in the proportions of the chart (fig. 3) and in the percentages in p.6, I would include those practices (presumably 680-308= 372) who took no action, otherwise the results are imbalanced: denominator should be 680. p.7: figure 4 shows only a slight difference between single-handed and group practices. I would not stress it in the text (p. 7, last sentence before fig. 4), as it is not remarkable. p. 7 line 23: according to p. 4, FTE NP’s on duty on the day were 65%, not 64% p.7 lines 34-35: figures are again reported wrongly, in comparison with results (p. 6): 27% instead of 29.1% (changing practice requirements); 12% instead of 12.7 (income) p.7 line 54: 1632.10 FTE instead of 1647.75 p. 7 line 55: 1508.42/3378 = 44.6%, not 43% p. 8 lines 13-15: telemedicine shift not 12.4% to 51.5%: according to p. 7 line 28-30 correct figures are from 10.5% to 57%

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Andrew Bonney
Institution and Country: University of Wollongong, Australia
Competing interests: None declared

Thank you for the opportunity to review this useful and informative paper. The paper is well written, and covers the important topic of COVID-19 related challenges and changes to general practice. The intended outcomes are clearly articulated and addressed in the Results and Discussion sections. The survey sample size and response rates were encouraging. The Discussion stays within the bounds of

the results to hand and the limitations are appropriately addressed.
A minor concern I had was the weight given to non-peer reviewed references in lines 37 in page 3 in the Introduction. Reference (16) being is a newspaper report and I felt it would be better to state something like 'GPs had been reported as quickly noticing…'

Since the original writing of this paper, additional peer reviews have been published and we have used these instead. We have kept some press release coverage and news to support statements that have not been published elsewhere to substansiate some claims.

I felt the two reference statements in lines 30-34 regarding the workload in Irish general practice were a little vague and could do with rewording and unpacking. Thank you for this comment. This has been re-worded.
My major concern was with the description of the methods, statistical analyses and presentation of the results.
1. How was the survey instrument developed? Was the instrument piloted and if so what were the pilot results and changes made?
It was developed between GPs at the ICGP and the research team and tested with 8 GPs each time to ensure it questions were relevant and the survey was quick to complete. More details were added to the methods to reflect this.

2. Can a copy of the survey questions be made available?

Yes, we will include a copy of the survey in additional documents.
3. What was the missing data proportion?
The paper now includes this information where possible.
4. You have described the number of ICGP members the survey was sent to, and the proportion of the total numbers of practices in Ireland that responded. I am interested in knowing the response rate from the practices and GPs you invited.

This was not appropriate to include as not all in practices will be ICGP members – we only know approx. % of practices replying and this is a practice survey not an individual survey.

5. Are you able to provide a comparison of available characteristics of the practices / GPs that responded and corresponding characteristic of the Irish national practice / GP population to aid assessment of generalisability? – a table would help

A table with the practice characteristics has been added and further information regarding general practice in Ireland has been added.

6. Definition of 'city, town and village' according to nationally accepted criteria –
We used the definition from the Central Statistics Office, this has been incorporated in the text.

7. Rather than a series of graphs, the survey data would be more easily interpreted by a table/s with 95% confidence intervals for the means and proportions as appropriate

This was done.

8. All estimates (means, proportions) should have an indication of uncertainty – e.g. standard errors or 95% confidence intervals.

Figures have been replaced with tables, which include standard errors and confidence intervals when appropriate.

9. The sampling method is complex. The data were collected at a practice level and then reported as means per GP or RN for the sample. It is unclear whether practices were asked for consultation numbers and telehealth numbers etc. per individual clinician and then averaged by the researchers, or provided as practice totals / practice FTEs by the practices. Either way, this is not the same as the results gained from a random sample of individual clinicians. The clustering of responses within

practices affects the standard errors of the estimates and hence widens the 95% confidence intervals. This needs accounting for in the analyses.

Additional detail about sampling has been added. We decided to refocus the paper and will not include consultation rate estimates.

10. The above concern becomes more critical when applied to extrapolation to national estimates. In addition, significant caution should be applied to extrapolation if you are unable to adjust or weight for characteristics of your sample and I feel this needs highlighting more than you have done.

We have removed this section of the paper.

11. Comparisons between estimates (means, proportions etc.) need substantiating with 95% confidence intervals or appropriate statistical tests, incorporating adjustment for the complex sampling method. In my opinion Pearson's r is not appropriate in complex sampling methods
Summary
I strongly recommend that these valuable and interesting data are analysed by a statistician familiar with complex sampling analysis techniques (e.g. multi-level modelling or generalised estimating equation), the data presented in a table format with 95% confidence intervals and comparisons between estimates supported by reference to the 95% CIs or appropriate statistical analysis. Extrapolation should be adjusted or weighted to national characteristics wherever possible.
As this is a potentially important and informative paper, I hope the researchers will take on board my suggestions.

Significant changes to the analysis were undertaken and the paper has been refocused away from consultation numbers and onto the changes in consultation method, financial impact, and patient groups.

Reviewer: 2
Reviewer Name: Susanne Reventlow
Institution and Country: Univesity of Copenhagen, Department of Public Health, Section of General Practice. Denmark
Competing interests: none declared

Overall, this article deals with an interesting and relevant issue, namely how COVID-19 has affected general practice consultations, stress, and income in Ireland. However, if the authors would like it to be of interest for a bigger audience, some aspects have to be elaborated and discussed more in depth, for example by employing more scientific literature on e.g. organisational aspects of general practice consultation and different types of consultations including telemedicine. Workload and stress could be discussed more as well. The discussion of challenges for general practice and primary care during the COVID-19 period needs more attention in general as a research field.
Overall, the article touches on a very important problem, but there is a need for more elaboration, clarification, and in-depth discussion involving scientific literature for it to be of general interest for a bigger audience.

The introduction
The introduction is clearly written. I would like a more thorough description of the ways in which general practice is a part of the overall healthcare system in Ireland, however. What does it mean to be self-employed? How is general practice part of community-based care? Does general practice in Ireland accommodate all types of patients, and does it have the overall responsibility for the care of patients with chronic diseases? A little more background on consultation types is needed, too: telephone and emails? Video consultations?

Additional detail about the Irish healthcare system, general practice, and consultation methods have been added.

Methods:
The design, method, and material are lucidly described in appropriate detail. I am a little curious,

however, on the following questions:
• What was the original objective of this survey? Was there a special attention to for example burn-out among general practitioners?

The original purpose of the survey was to conduct it regularly to collect data regarding general practice consultations and working conditions as this data is not routinely collected in Ireland.

• Is it a recurrent study conducted by ICGP?
The first iteration of the survey was deployed in early 2020, and the original plan was to conduct it on a seasonal basis but this plan had to be changed due to COVID-19 hence updates regarding the pandemic response.

• Were the survey questions pilot tested? Has the questionnaire been used on earlier occasions? Additional detail on piloting and the questionnaire has been added to the methodology.

• Which topics were included in the survey and why?
This detail has been added.

On page 4, the authors write, “Consultation rates include face-to-face consultations, telephone consultations, home visits and visits to nursing homes,” but later the authors state that consultations also include telemedicine and video consultations? This is not quite clear.

This was rewritten to be clearer. In the ‘pre-COVID-19’ survey, we did not specify telephone or video consultation, instead it was called “Telemedicine” and in the ‘During COVID-19’ survey, we gave the option of specifying video consultations. For analysis purposes, we combined these for total figures.

Results
It is a little difficult to follow the presentation of the results concerning the consultation. This ispartly due to the applied abbreviations for the health professionals used in certain places, but also perhaps due to the way the authors refer to pre-COVID-/during COVID and first and second survey This has been updated to be consistent throughout.

I suggest that the things that have to do with GPs are compiled, followed by the things that have to do with the practice staff. I would also suggest that abbreviations other than GP are written in full instead.

We have altered how the results are compiled in accordance to your recommendation. We have left the abbreviations for practice nurses as PNs in tables due to formatting but they have been extended in the rest of the paper.

As for the section on stress for GPs – I am a little concerned here, if it is unequivocal what the term changing work practices means? This section has now been removed.

The section on practice changes is primarily about decrease in profitability and initiatives to reduce expenses. Perhaps another headline would be better, since it has to do with economics. Please explain more specifically what the term formal business performance assessment denotes. A reference to literature concerning payment and organisation of primary care could be of use here. Additional detail about the Irish health system has been added to the introduction to address this point and the section in results has been renamed and refocused as per your comment.

The short section concerning decline in certain patient groups might be better placed under consultation. This section has been moved up.

Could the authors describe these chances in more detail? What is meant by 6´s? It does not say anything about what types of patients get what types of consultations.

We have added more information about patients under 6 and over 70 - patients within these age thresholds receive free GP care in Ireland as of 2015 and often use GP services more frequently which is why we asked about them specifically. We did not ask what types of patients get what type of consultation so we cannot expand on that.

Discussions:
Strengths and weaknesses are well reported.
The authors only superficially mention some important areas for discussion, e.g. the reduced practice profit – but they have to discuss this more in depth in relation to the organisation of primary care in comparable countries.

Additional discussion comparing our study to other similar studies that have been published since the original submission has been included.
It seems like a repetition when the authors mention – again - that there is no central register data from GPs in Ireland. This is also mentioned in the section about strengths and weaknesses. This repetition has been removed.
In the section on implications of COVID-19, the part on challenges and organisational changes for general practice is the most interesting part of this article and could be even more elaborated concerning telemedicine, video consultations, and primary care. Video consultations provide new opportunities but also challenges for the delivery of healthcare, both in a period of great strain and pressure, e.g. a pandemic situation such as COVID-19, and under normal life conditions. Could the authors elaborate on these issues?

We have elaborated on these issues in the discussion and introduction.

A great deal of the references are not scientific literature. I would like a more scientific discussion of structural changes in relation to COVID-19 and the impact of these on general practice. Some references could be brought into that discussion with great advantage – suggestions are provided below.

We have elaborated on the impact of changing consultation methods and the impact of telemedicine in the discussion, with the help of these references and new publications that have been published since the original submission of this paper.

There is a need for some clarifications. On page 9: what do the authors mean, when they write that clinicians in primary care have used telemedicine interventions? The authors mention both telemedicine interventions, digital care and video consultations, but it is a little difficult to follow how they use these terms, and what they refer to?

Telemedicine would include telephone and video consultations as well as things like email and text consultations and electronic prescribing. We have removed the term digital care and added context into the paper.

Some references concerning video consultations which could be included in the discussion:
Thiyagarajan A, Grant C, Griffiths F, Atherton H. Exploring patients' and clinicians' experiences of video consultations in primary care: a systematic scoping review. BJGP open. 2020;4(1). 6.
Leng S, MacDougall M, McKinstry B. The acceptability to patients of videoconsulting in general practice: semi-structured interviews in three diverse general practices. Journal of innovation in health informatics. 2016;23(2):141. 7.
Powell RE, Henstenburg JM, Cooper G, Hollander JE, Rising KL. Patient Perceptions of Telehealth Primary Care Video Visits. Ann Fam Med. 2017;15(3):225-9. 8.
Peters L, Greenfield G, Majeed A, Hayhoe B. The impact of private online video consulting in primary care. J R Soc Med. 2018;111(5):162-6. 9.
Donaghy E, Atherton H, Hammersley V, McNeilly H, Bikker A, Robbins L, et al. Acceptability, benefits, and challenges of video consulting: a qualitative study in primary care. Br J Gen Pract. 2019;69(686):e586-e94.

Reviewer: 3

Reviewer Name: Anna Gigli
Institution and Country: IRPPS, National Research Council, Institute for Research on Population and Social Policies, Italy
Competing interests: none declared

The paper illustrates the results of a survey organized by the professional body of GPs in Ireland and addressed to GPs. The survey was answered twice: once before the COVID-19 pandemic (February 2020) and once during it (June 2020). A maximum of 1 GP for each practice answered, responses referring to practices (not GPs) were analyzed using statistical tools.

The paper is interesting and results, as the author stress may add "to the knowledge base in terms of the potential impact of the COVID-19 pandemic on general practice, including on stressors and finances, in the current void of such literature".

However, I personally found difficult to check statistics without knowing some raw figures.

For example, how is the average consultation number per person per year computed? What is the number of FTE GPs in the whole of the Ireland (not only those who answered the survey)? We only know that there are 3378 members registered in the professional body, but don't know how many are active, how many are retired, how many work full time, etc.

We have added additional details in the methods and results with the aim of making the results clearer. All of the key findings are now reported in tables instead of figures. We've removed the data about consultation numbers to remove the ambiguity regarding figure on the number of GPs in Ireland.

As a general recommendation, the authors should choose a unified way to present percentages: since many numbers are reported in the paper, I suggest to round all of them.

They have now been unified, we chose to include one decimal point.

Further, several percentages are wrong: I highlighted them and I suggest the authors should implement a careful double check.

Significant changes to the reporting have been made, thank you for these specific concerns. They have all been addressed with the updated analysis.

Below are reported specific comments.

p. 5: line 22: "During-COVID-19, consultation rates have changed significantly as has the mode of consultation. Between 1104.85 FTE GPs, the daily average per GP was 23 consultations"; line 39: "The overall average consultation rate for GPs decreased from 29 to 27per day over the same period" Figures are contradictory.

The information about the consultations has been removed and the number of GPs have been updated.

p. 6: the following sentence is unclear and apparently contradictory: "Across all practice sizes, there is an expected average decrease in profitability of 35.2% and an average of 17% for an increase in profitability. Only 19% of practices were expecting an increase in profitability." The authors should clarify

This was an error, it has been adjusted – it should have been 19 practices not 19%.

p.6 in the proportions of the chart (fig. 3) and in the percentages in p.6, I would include those practices (presumably 680-308= 372) who took no action, otherwise the results are imbalanced: denominator should be 680.

Thank you for this comment, this has been accounted for in the adjusted analysis; Tables 3 and 4 make special note regarding this and in the section titled 'Practice Income Impact'.

p.7: figure 4 shows only a slight difference between single-handed and group practices. I would not stress it in the text (p. 7, last sentence before fig. 4), as it is not remarkable.

The figure has been removed now, but the section has been altered.

p. 7 line 23: according to p. 4, FTE NP's on duty on the day were 65%, not 64% - This has been addressed.

p.7 lines 34-35: figures are again reported wrongly, in comparison with results (p. 6): 27% instead of 29.1% (changing practice requirements); 12% instead of 12.7 (income)
This figure and section has been removed.

p.7 line 54: 1632.10 FTE instead of 1647.75 – Corrected.

p. 7 line 55: 1508.42/3378 = 44.6%, not 43% - This has been corrected, we decided to simplify the figures as over 200 respondents did not provide any answers past the 4th question. Now, in both surveys responses were only used if the practice gave both FTE GP figures overall and for the day. All of the percentages have been double checked.

p. 8 lines 13-15: telemedicine shit not 12.4% to 51.5%: according to p. 7 line 28-30 correct figures are from 10.5% to 57%

Thank you for flagging these – we have updated the figures throughout the paper.

VERSION 2 – REVIEW

REVIEWER	Susanne Reventlow Section of genral practice and The Research Unit for General Practice, Department of Public Health, University of Copenhagen
REVIEW RETURNED	30-Dec-2020

GENERAL COMMENTS	I think the authors have done a good job with the revision of this article. I find the methods much better described, the added tables and the new result section make the article easier to read and see what knowledge this article add to the knowledge about primary care and general practice during this period. The authors have developed the discussion further. One last thing - The authors could elaborate a little more on the limitations of the study due to the design and methods.

REVIEWER	Anna Gigli IRPPS, National Research Council, Institute for Research on Population and Social Policies, Italy
REVIEW RETURNED	04-Jan-2021

GENERAL COMMENTS	The paper has improved on the general presentation (introduction and methods), but the results section is not suitable for publication, as there are a number of serious statistical mistakes. I suggest the authors ask the help of a professional statistician. Here are some statistical issues that need to be addressed: 1. Why outliers are removed from calculations? This is not

	statistically sound: you can remove an uncomplete questionnaire, but not outliers! See page 5, last sentence of Methods section 2. Confidence Intervals are computed even when unnecessary: percentages are mere observations not estimates. Furthermore: 3. In general I would like to see the absolute values, together with percentages in the tables, as I suspect that some percentages are wrongly computed. 4. For each table I would like to know the number of respondents Finally, in detail: Table 1: a) Total number of practice during COVID (=532) does not split correctly among single-handed (151) and grouped (382): 151+382 = 533 b) Provide 95% confidence intervals in brackets and only where there are estimates (i.e. means), do not add an extra column which is almost always empty c) Use absolute numbers rather than percentages, as it is not clear how % of practices with at least one part-time nurse are obtained d) the number of FTE GPs on the day of first survey is related to 527 practices, not 537 Table 2: a. The description of table 2 in the text is repeated twice. I suggest to eliminate lines 28-36 in page 7 b. report the total number of respondents c. provide absolute values and percentages in brackets. d. CI on percentages are not to be used Table 3: a) Report the total number of respondents b) provide absolute values and percentages in brackets. c) Is there an underlying hypothesis for which different results for single-handed and groups practices are expected? Personally I do not see it. Further, the results are quite similar, therefore I would report them together d) I do not understand the note *: what do the figures in brackets (90.5%, 87.6%, 92.9%) means? e) I would report comment ** in the main text, rather than in the table Practice income impact: this paragraph is very confusing: a) The total number of practices are now 530, before they were 532 (or 533 – see note 3a). Why? b) Report total number of respondents and provide absolute values as well as percentages: I suspect percentages are not correctly calculated c) The sentence “Across all practice sizes, there is an expected average decrease in profitability of 34.8% and an average of 17% for an increase in profitability. Only 20 (3.8%) practices were expecting an increase in profitability.” is contradictory. I already pointed this out in the previous version. d) Page 9 line 8: group practices = 363, single-handed practices = 141 sum up to 504. Why? e) P- 9 line 16: R square =0.04 means that there is no good fitting of the model, i.e. there is no statistical evidence that the profit loss increases with the practice size decrease, that is the opposite to your statement Table 4: a) Report the total number of respondents

	b) provide absolute values and percentages in brackets, as it is not clear how the denominators of percentages are computed c) are multiple answers allowed? d) I do not understand the note *: 233/(151+382)=43.7%, not 45.3%

VERSION 2 – AUTHOR RESPONSE

Reviewer: 2
Prof. Susanne Reventlow, Copenhagen University Section of General Practice
Comments to the Author:
I think the authors have done a good job with the revision of this article.
I find the methods much better described, the added tables and the new result section make the article easier to read and see what knowledge this article add to the knowledge about primary care and general practice during this period. The authors have developed the discussion further. One last thing - The authors could elaborate a little more on the limitations of the study due to the design and methods.

Thank you, the study limitations have been expanded in the discussion and abstract.

Reviewer: 3
Dr. Anna Gigli, Consiglio Nazionale delle Ricerche
Comments to the Author:
The paper has improved on the general presentation (introduction and methods), but the results section is not suitable for publication, as there are a number of serious statistical mistakes. I suggest the authors ask the help of a professional statistician.

The authors have reviewed the paper and had it checked by a professional statistician Dr Jean Saunders of CSCS Ireland. Her helped has been noted in the acknowledgements section. The changes she suggested have been included in the paper.

Here are some statistical issues that need to be addressed:
1. Why outliers are removed from calculations? This is not statistically sound: you can remove an uncomplete questionnaire, but not outliers! See page 5, last sentence of Methods section

Thank you for the advice, outliers will be included within the calculations. 532 practices responded to the first survey but 5 did not consent and one did not fill the survey, so thtere were 526 valid surveys. In the survey during COVID-19, 245 surveys were removed because participants only answered the first few questions or completed the survey despite saying ‘no’ on the consent question – leaving 538 valid surveys.

2. Confidence Intervals are computed even when unnecessary: percentages are mere observations withnot estimates. CI will be removed where you have stipulated.

Furthermore:
3. In general I would like to see the absolute values, together with percentages in the tables, as I suspect that some percentages are wrongly computed.

I have added absolute numbers in the tables along with the percentages.

4. For each table I would like to know the number of respondents – I have now added the total number of respondents for each value like this (n = XXX) or in the text as ‘523 practiced reported 1504.5 FTE GPs overall’.

Finally, in detail:
Table 1:

a) Total number of practice during COVID (=532) does not split correctly among single-handed (151) and grouped (382): 151+382 = 533
These figures have been updated and checked: 156 Single handed and 382 group = 538 total for the second survey.

b) Provide 95% confidence intervals in brackets and only where there are estimates (i.e. means), do not add an extra column which is almost always empty

This change has been made.

c) Use absolute numbers rather than percentages, as it is not clear how % of practices with at least one part-time nurse are obtained- Thank you this has been updated and made clearer in the text and table.
d) the number of FTE GPs on the day of first survey is related to 526 practices, not 537
This was updated and figures were checked by both proof reader and statistician.

Table 2:
a. The description of table 2 in the text is repeated twice. I suggest to eliminate lines 28-36 in page 7 – This was done.
b. report the total number of respondents – This has been reported in all tables now.
c. provide absolute values and percentages in brackets. – I reported them on separate lines to make it clearer I hope.
d. CI on percentages are not to be used – I have removed these now

Table 3:
a) Report the total number of respondents – This has been reported
b) provide absolute values and percentages in brackets. This has been changed throughout.
c) Is there an underlying hypothesis for which different results for single-handed and groups practices are expected? Personally I do not see it. Further, the results are quite similar, therefore I would report them together – We have now reported them together,
d) I do not understand the note *: what do the figures in brackets (90.5%, 87.6%, 92.9%) means?
e) I would report comment ** in the main text, rather than in the table

- This was changed.

Practice income impact: this paragraph is very confusing:
a) The total number of practices are now 530, before they were 532 (or 533 – see note 3a). Why?
b) Report total number of respondents and provide absolute values as well as percentages: I suspect percentages are not correctly calculated

c) The sentence “Across all practice sizes, there is an expected average decrease in profitability of 34.8% and an average of 17% for an increase in profitability. Only 20 (3.8%) practices were expecting an increase in profitability.” is contradictory. I already pointed this out in the previous version.

This might be an issue of clarity: for the 20 practices expecting an increase in profit, they expected an average of 17% increase in profit. For all of the practices who reported a decrease in profit (majority), they expected an average of 34.8% decrease in profit.

This section has been reworded to improve clarity.

d) Page 9 line 8: group practices = 363, single-handed practices = 141 sum up to 504. Why?[RH1] – Figures how now been updated, it was the number of responding practices to that questions. They’ve now been corrected and checked.

e) P- 9 line 16: R square =0.04 means that there is no good fitting of the model, i.e. there is no

statistical evidence that the profit loss increases with the practice size decrease, that is the opposite to your statement[RH2]

Now removed from the paper.

Table 4:
a) Report the total number of respondents – Complete.
b) provide absolute values and percentages in brackets, as it is not clear how the denominators of percentages are computed – This has been updated for clarity.
c) are multiple answers allowed? Yes
d) I do not understand the note *: 233/(151+382)=43.7%, not 45.3% - Note was removed, this related to a different item.

Thank you for your detailed comments. I have added absolute values and had our statistical analysis checked.

VERSION 3 – REVIEW

REVIEWER	Anna Gigli Consiglio Nazionale delle Ricerche, Italy
REVIEW RETURNED	23-Feb-2021

GENERAL COMMENTS	The statistical aspect of the paper has greatly improved. I am a bit puzzled by the fact that the absolute numbers reported in the results section keep changing from one version to the next. Hopefully this time the professional statistician should have double checked and corrected the figures. I report just minor points, to improve the clarity of the paper: 1. A table should be readable even without reading the text. Tables should be presented in a consistent way: for example, use the wording “number of respondents” in all tables), captions should explain the meaning of acronyms Abstract: 2. p.2 Lines 34-36: please define figures in brackets: if they are confidence intervals, quote its level (e.g. 95%, or 90%, etc) 3. p. 3 line 20: I do not understand this sentence “nor was it possible to determine casual relationships.” Results: 4. p.6 line 16: I do not understand the sentence in brackets 5. p.6 lines 27-33: I do not understand the sentence: “537 practices had a total of 1276.5 FTE GPs and 526 practices reported a total of 607.2 FTE nurses.” Do you mean that 537 practices answered to the question on GPs and 526 practices to the question on nurses? Please rephrase the sentences and remove the s.e. in brackets. Table 1: 6. see point 1 7. standard errors not necessary if you are calculating simple arithmetic means 8. p.8 lines 30-33: since the number of respondents is presented in the table, it is useless to report it in the text, too. Furthermore, reporting numbers in brackets next to percentages may confuse the reader. 9. p. 8 lines 38-39: “The differences of the mean consultations per GP or nurse pre COVID-19 and during were all significantly

	different." Please rephrase the sentence 10. p.8 lines 39-43: the sentence is badly written, the figures in brackets are not explained, the acronym IQR is never explained 11. Table 3 can be omitted, as the text is self-explicative 12. p. 9 line 26: usually the number in brackets near a percentage refers to the numerator of the percentage (as in line 28), in this case it represents the denominator (i.e. the number of respondents), and this causes confusion in the reader. I suggest to rephrase the sentence, for example: "out of 536 responses to item 7,…, 80% reported a decrease in profitability" 13. p. 9 lines 33-35: I do not understand the sentence.

VERSION 3 – AUTHOR RESPONSE

Comments	**Responses**
The statistical aspect of the paper has greatly improved. I am a bit puzzled by the fact that the absolute numbers reported in the results section keep changing from one version to the next.	Thank you – the data has changed due to previous reviewer comments regarding the inclusion/exclusion of outliers – this resulted in changes to number of practices included and overall means etc. The professional statistician has checked all data.
A table should be readable even without reading the text. Tables should be presented in a consistent way: for example, use the wording "number of respondents" in all tables), captions should explain the meaning of acronyms	Tables have been updated throughout.
Abstract: p.2 Lines 34-36: please define figures in brackets: if they are confidence intervals, quote its level (e.g. 95%, or 90%, etc) –	This data referred to the interquartile range of the median – this has been updated and is hopefully clearer.
p. 3 line 20: I do not understand this sentence "nor was it possible to determine casual relationships."	This has been re-written now as 'therefore, it was not possible to determine casual relationships.' This just highlights the fact that because the surveys were not carried out in a way that would allow response matching (they were anonymous), it wasn't possible to draw any definite conclusions about why the consultation rates changed.
Results: p.6 line 16: I do not understand the sentence in brackets	This has been rewritten for clarity.
p.6 lines 27-33: I do not understand the sentence: "537 practices had a total of 1276.5 FTE GPs and 526 practices reported a total of 607.2 FTE nurses." Do you mean that 537 practices answered to the question on GPs and 526 practices to the question on nurses? Please rephrase the sentences and remove the s.e. in brackets.	This is now reworded the sentence and S.E. in brackets removed throughout.

Table 1: see point 1 – Will be updating the tables so format and labelling is consistent throughout. standard errors not necessary if you are calculating simple arithmetic means	SE removed throughout. Table formatting has been updated.
p.8 lines 30-33: since the number of respondents is presented in the table, it is useless to report it in the text, too. Furthermore, reporting numbers in brackets next to percentages may confuse the reader.	Whole numbers were removed from text.
p. 8 lines 38-39: “The differences of the mean consultations per GP or nurse pre COVID-19 and during were all significantly different.” Please rephrase the sentence	This has now been rewritten.
10. p.8 lines 39-43: the sentence is badly written, the figures in brackets are not explained, the acronym IQR is never explained	IQR explanation and use is now included in method section.
Table 3 can be omitted, as the text is self-explicative.	Table 3 has been removed.
p. 9 line 26: usually the number in brackets near a percentage refers to the numerator of the percentage (as in line 28), in this case it represents the denominator (i.e. the number of respondents), and this causes confusion in the reader. I suggest to rephrase the sentence, for example: “out of 536 responses to item 7,…, 80% reported a decrease in profitability”	This has been rephrased.
p. 9 lines 33-35: I do not understand the sentence.	This has now been updated.