PEER REVIEW COMMENTS

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Title: Virtual surgical consultation during the COVID-19 pandemic: a patient oriented, cross sectional study using telephone interviews

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Reviewer 1: Mr. Mac Horsburgh — patient reviewer

You have identified an important area for medical research, created an appropriate research design and have impressively integrated patient partners into your research. I find your conclusions to be logical and supported by the data you presented. Your findings will be useful for physicians and patients. I am a patient partner to a number of sepsis-related research initiatives. Interestingly enough, I recently underwent my first virtual surgical consultation. I have filtered your observations through this particular lens as well as my overall experience as a survivor of a near death experience. 1. If I could add anything to your research, it would have to do with highlighting the importance of good patient-physician communication as a prerequisite to good patient outcomes. I particularly identified with the patient who said she "couldn't read' the surgeon she spoke to on the phone. I had the same experience recently and it is a disconcerting one.

Thank you Mr. Horsburgh for taking the time to review our paper. I completely agree that open and effective communication is one of the most important aspects of providing medical care and the switch to virtual consultation adds many new challenges to this. We had many participants comment on that same experience which developed into the theme "not as personal". I believe we were able to capture participants' feelings on that matter under that theme and subthemes. I have added a few sentences regarding this to the interpretation section.

I support the recommendations that you have made re: if possible trying to arrange for a video call. A framework here that I like to use is that the best form of communication is face to face where you can identify nonverbal cues, clarify assumptions and freely ask questions. The worst form of communication is the written word because it is easy to jump to conclusions and misinterpret what people are saying. Telephone conversations are somewhere in the middle with, in my view, video calls being much superior to straight phone calls.

You make a good point here. Unfortunately, almost all of the virtual consultations that our participants had with their surgeons were over the telephone. Without an adequate sample size of video consultation it is hard to compare and contrast them and see where video may be superior. This can hopefully be an area of future research.

2. Further on the topic of communication, I appreciate your observation that conclusions about surgical consultations may not be generalizable to all physician appointments. In my experience, surgeons are a unique breed of medical doctors in that they often score low on empathy whereas most other physicians score higher on this scale. Also of interest here is the research that promotes the idea that female surgeons are better communicators than male surgeons. The question in my mind that arises is whether or not the surgeons who conducted the phone calls were better or worse communicators than an average of other physicians, an impossible question to answer but one which in my view highlights the importance of clarifying that, as always, good patient-physician communication is the sine qua non of good patient care and outcomes.

Yes, it would be interesting to see how surgeons measure up compared to other physicians when it comes to empathy and how this may be impacted by doing the appointment virtually.

Unfortunately, the scope of our project was only looking at surgical consultations so it would have to be looked at another time.

3. Further on the communication issue, I recently attended a webinar hosted by the Manitoba Institute of Patient Safety. The topic was patient/physician communication. The webinar introduced me to the issue of patient medical literacy and the need for a physician to assess that in communicating with their patients. It would have been interesting to have a sense of how this concept applied to these patients and physicians and if it made any difference in their satisfaction levels?

The topic of patient medical literacy is an important one and it can be really challenging for a care provider to gauge this accurately over a virtual format. I have added this to the discussion section.

Regardless of these concerns/thoughts overall, I was impressed with this research. It was coherent, logically thought out, touched upon an important ongoing issue and presented credible findings that will be helpful and guide further research in this area.

Thank you again, our hope is that this research can inform surgeons on the patient perspectives of virtual care and allow for a more effective method of communication.

Reviewer 2: Dr. Sanjay Beesoon — Alberta Health Services, University of Alberta Faculty of Medicine and Dentistry

This is an important and timely piece of work. I think there is some room to improve strength and the quality of the paper. I made a few suggestions. [Editor's note: these have been transferred below] The authors set out to study the advantages and disadvantages of remote consultation using a mixed method approach co-designed with patient advisors – this is a commendable initiative. This is a timely and interesting piece of research in the context of the COVID-19 pandemic during which, remote consultations have become the norm. The authors did a good job setting clearly the context why it is important to research this subject. The objective is well defined and the appropriate methodologies were used for data collection, quantitative and qualitative analysis. The 32-item checklist presented in table is quite impressive. However, the manuscript can be improved if the authors consider the following suggestions:

Thank you Dr. Beesoon for taking the time to review our manuscript. I have done my best to address your comments below.

1. Since seven surgeons have agreed to refer their patients for this study, it would have been great to gather surgeons' (and possibly Family Physician's) attitudes and experiences with remote consultations. I believe this can be easily done within a few days. [Editor's note: This is an interesting idea for future work. It is not required for publication of this study in CMAJ Open.]

Yes, this would be a very interesting thing to look at. Unfortunately, we didn't initially set out to get the providers' perspective and so it would require a change to our ethics and a bit more ground work than I have the capacity to do at the moment. We hope that it will be something we can gather in a future study.

2. I do not see a rationale for using the 2 age categories used (1) 30-65 (2) 66 – 87. I think the data can be stratified into further categories – possibly 30 -45, 46 – 60, 61-75, 76 -87

Thank you, I have further broken the age categories down in the tables

3. There is no info on whether the surgical consultations were pre-op or post-op

You are correct, we didn't specifically ask if it was a pre or post-op appointment. We did ask if it was an initial consultaiton or a follow-up appointment but the follow up could have been for pathology results, imaging follow up or post-op follow up. I have added this to the limitation section.

4. There is no info on the invasiveness of the surgeries, which can impact how [patients] experience their remote consultations.

Correct, we did not gather this information either. It would be interesting data to have as I'm sure we would see differences based on the type of operation. We didn't want to limit the surgical consultations to those only having surgery, as many patients that see a surgeon may never end up getting an operation.

5. Was the remote consultation the only surgical consultation of these patients? If they have had prior in-person surgical consultation, this will enable them to have a benchmark to compare their remote consultations.

Just over half of our participants (55%) had prior experience with virtual consultation. We didn't specify if this was with a surgeon or another physician but does give them some benchmark to compare to.

6. In some similar studies, patients have expressed privacy concerns – I do not see comments on privacy in this manuscript– Even if patients did not raise this as an issue, it is a real concern and can be mentioned in the discussion.

This is a good point. We did have a question on the interview guide regarding privacy, however, only two participants had concerns. I have added it to the results and interpretation section.

7. Any comments on cost savings to the health care system? [Editor's note: This could be addressed in the Interpretation if you are able to find relevant literature, but is not essential.]

This isn't something that we looked at in our study the goal was to use a patient oriented approach to understanding patients' experiences with virtual surgical consultation. It is noted in the literature and I have put a citation in the interpretation section.

8. It will be great to read something about the policy implications of this work and how it factors in the general digital health strategies of different health authorities in Canada.

Thanks, I did try to add a bit of this to the interpretation section. With the rapid increase in utilization of virtual care is there is a definite need for proper regulation and advisory as well as to have it properly integrated into the other digital health platforms. Alberta is actually one of the leading provinces in this regard, Saskatchewan is still lagging a bit behind.

Reviewer 3: Dr. Melita Avdagovska — University of Alberta

The manuscript aims to describe the perspectives of patients with remote consultations.

Introduction 1. Need clarification about 'remote consultation' and 'virtual consultation platforms'. Would these be considered as part of telemedicine? Are these platforms part of clinical information systems? How are records being kept? Was it done before COVID-19? Some of this information is in the interpretation section.

Methods 1. Would you please clarify the ethics process behind surgeons providing patient contact information to the research team? Were patients contacted or informed by the surgeon that their contact

information will be shared with a research team? 2. Why was verbal consent considered to be the best approach? 3. “A brief, semi-structured interview guide was codeveloped with patient partners. The guide contained both open and closed ended questions that related to overall satisfaction with and the advantages and disadvantages of the remote consultation process. Interview duration ranged from two to eight minutes. Interviewing ceased once no new themes were identified, and a retrospective analysis of themes showed data saturation had been reached. Interviewing ceased once no new themes were identified, and a retrospective analysis of themes showed data saturation had been reached” -> a. Your study appears to be a survey study with closed and open-ended questions rather than mixed methods. How were you able to gather all relevant information within 2 to 8 minutes if you were conducting a qualitative study? b. Without any field notes, how did you know you reached saturation and ‘ceased’ interviews? c. Would you please explain your qualitative approach? d. Can you please also add your interview guide? e. Did the interviewees have the opportunity to discuss all their perspectives? 4. In the COREQ checklist, under ‘number of data coders’ states 1; however, it states “patient partners undertook qualitative analysis by identifying themes and contributing to interpretation. A. Please explain. Results 1. “Forty-five patients were contacted to participate” a. So 100% response rate? 2. “We developed our thematic framework” a. Framework? Please explain. Were the themes predetermined? Interpretation 1. Page 18: The two paragraphs seem to be very repetitive. Also, if geography is an important factor for ‘remote consultation’ studies, maybe it should be introduced in the ‘introduction/background’ section? 2. This section needs to be more succinct and focus on the findings rather than information that probably fits better in the introduction. Limitations 1. “Because our sample was primarily telephone consultations; (n=41)” a. Was it 45 (as stated on page 12) or 41? [Editor’s note: it is not always clear when you are referring to the data collection for this study or the patients’ experiences in virtual surgical consults.] 2. “it was difficult to assess the effectiveness of video consultation” a. Was the goal to assess ‘remote consultations’ or a particular type of consultation? 3. “Additionally, some interviews took a few minutes to complete which could limit the quality of the qualitative data” a. This requires a more detailed explanation in the methods section.

Thank you Dr. Avdagovska for taking the time to review our manuscript. I have done my best to address your concerns below. Thank you. I have made some changes to the wording in order to keep things consistent. Everything has been switched to 'virtual consultation' and I have made some clarifications in the introduction. This would encompass both telephone and video appointments and would be considered a part of telemedicine. They are not directly related to clinical information systems or electronic medical record. Typically a surgeon will dictate a note on the appointment that will be both uploaded to the EMR and sent to any relevent parties. Virtual consultations were being performed prior to COVID but nowhere near to the extent that they are being used now. Some clinics were doing almost exclusively virtual appointments when COVID numbers were high. I have attached my ethics application as well as my email memo to the surgeons. I asked the surgeons to mention the study to their patients and ask if a resident (myself) could follow up. We had initially set out an email recruitment strategy from the medical office assistants but the surgical offices didn't have email addresses for many of their patients. This promted an adendum to our ethics allowing for phone recruitment. Page 3, line 1 Verbal consent was determined the best approach as the entire project was done virtually. The participants had a virtual consult with their surgeon and then a telephone interview with myself. I did give them the option to have the consent emailed or sent to them in another way but everyone consented to do it over the phone. Thank you for your comment. We have decided that the methodology wasn't sound enough for this to be called a true mixed-methods project. We are changing it to a "cross sectional study using telephone interviews." The interview time does not include the study description or the verbal consent as I didn’t start recording the interview until consent had been given. As you can see by the guide, the majority of questions only require simple one or two word answers. We only had several open ended questions and then a further probing question at the end. The guide was co-developed with our patient partners and one of the

things they emphasized was the importance of keeping the questions limited to not over-burden participants. This project was being done during the first few months of COVID and patients had many issues to consider with the changes to appointments, OR's being cancelled etc. and we wanted to repect thier time. We stopped interviews when no new themes were being identified. We did review the transcripts as we went and regular meetings with the patient partners were held to discuss saturatiton of themes and for peer debriefing. We used a method that was developed by Guest et al. (https://doi.org/10.1371/journal.pone.0232076). This allowed us to look retrospectively at the data to see the rate that new themes were being brought up relative to the themes we already had established to ensure data saturation had been reached. Page 3, line 23 Interviews were transcribed and uploaded to Nvivo. The data were then read through completely prior to starting the analysis. We then began coding which was done independently by two of the research members for all of the interviews. Our two patient partners were each given a sample of interviews to also code (this wasn't done in NVivo, it was done in microsoft word or by printing and highlighting). We had frequent team meetings throughout the process for peer debriefing. Once we had all the interviews coded, we started to separate the data into themes and subthemes using a thematic analysis approach. We used both an inductive and a deductive approach. The inductive approach to draw themes from the data and a deductive approach to classify themes into advantages and disadvantages as the two general categories. Again, this was done over virtual meetings with discussion about the best way to structure the themes. We then performed a final review and revisions with all team members to ensure that the data was adequately represented, and all of the themes and subthemes were appropriate. Page 3, line 24 Yes, I have added it. Appendix 1 I tried to give them as much time as needed to answer questions. They were prompted at the end if there was anything else that they wanted to add. Yes, I can see how this wasn't entirely clear. The patient partners didn't feel like they would be comfortable navigating Nvivo, which is were all the data were coded. We decided as a group that I would put the actual data into Nvivo and we would then use this software to house all codes. I have updated the COREQ. This was my mistake and not clearly stated in the manuscript. 60 participants were contacted, 45 consented to an interview. Page 3, line 35 Please see my response above as to our analytic approach. I have also revised this section in the manuscript to hopefully allow more clarity and confidence in the methods. The only framework that was used were 'advantages' and 'disadvantages' which was done via a deductive approach based on our research question and interview guide. All other themes were determined inductively using a thematic analysis approach. Page 3, line 26 I have restructured the interpretation section so hopefully it will be less repetitive. I have added a sentence in the introduction/background section regarding Canadas' geographic challenges for specialist services. Page 2, line 15 Thank you. I tried to re-write the interpretation section to better follow the specifications laid out by CMAJ Open. Sorry, I can see how this is not clear. We conducted all of our interviews via telephone; however, the virtual consultations that the participants had with their surgeon were a mix of telephone (41) and video (4) appointments. I have changed the wording. Page 10, line 2 Our goal was to assess virtual consultation, not any particular type. It just happened that the vast majority of surgeons did their vitual consults over the phone so we didn't get a very heterogenous sample. However, if this is how most surgeons are doing their virtual consults then our sample is representative of that. It would have been interesting to see if participants liked the video format better or if it would have changed their responses but we weren't able to do that. It will be a potential area for future research. Yes, I agree. This is one of the main shortcomings of our project. I have done my best to explain it above and added some citations to the methods section but I can understand your concerns. They were brief interviews with many closed ended questions, only requiring a few word responses. I have attached the interview template for you to look at as well. The interview time doesn't include the project description or verbal consent process. Page 3, line 24, page 10, line 8