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Article title: The impact of delaying surgery during COVID-19 in Alberta: a qualitative study.

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Reviewer 1: Ms. Hazar Haidar McGill University and Université de Montréal

This a very interesting, well-written, and timely manuscript reporting patients' perspectives and experiences about delaying their surgeries due to COVID-19 pandemic.

Response: We thank the Reviewer for their time and thoughtful feedback. We greatly appreciate it.

A general comment related to qualitative studies is that quotes should as well be used within the text to better reflect and support your findings. While this is reflected in some of your findings, few sections are totally lacking quotes such as 2.1. Healthcare resources, 2.2. Communication, 3. COVID-19 related impacts, and 4. Uncertainty, and the reader should usually refer to the tables. I'd therefore suggest adding quotes to these sections. [Editor's Note: as per CMAJ Open style, quotes should be confined to tables or boxes that are cited within the text. It can be helpful to refer readers to specific quotes in the boxes, where appropriate.]

Response: Thank you for noting the absence of quotes for many of the themes and subthemes. We agree that having quotes imbedded into the body of the text augments the reporting of the results, however, to comply with the journal's formatting requirements we have moved all quotes to Tables 2-5.

I have some minor comments related to some aspects of the manuscript.

1. Abstract, p.3 of 42, lines 18-21: Please specify if these interviews were conducted throughout the pandemic or during the first wave, since currently with the 4th wave, patients are facing similar scenarios due to the drastic increase of hospitalizations and COVID cases.

Response: Thank you for the opportunity to add more detail about the methods used. We have added specific dates when the interviews were conducted: "we conducted interviews between September 20, 2021 and October 8, 2021."

2. lines 43-46: Please briefly clarify "diffuse and consequential". Also, the interpretation section could be rewritten in a nuanced and clear way to illustrate some of your interesting findings because you do not mention some of the consequences of delaying surgeries on patients' experiences, which constitute the core of your paper. [Editor's note: Please see comment on 'c' below.]

Response: Thank you for your suggestion. By "diffuse and consequential" we were trying to convey that the impact of delaying non-urgent surgeries had many effects on patients and that the effects were not inconsequential. As noted by the Editor in the comment below, the Interpretation section has specific formatting that prohibits us from addressing the Reviewer's suggestion regarding the interpretation section.

3. lines 49-54: Can be moved under a different “conclusion” section. [Editor’s note: CMAJ Open style is to have a single Interpretation subsection of the Methods that includes 2 sentences: 1 with the main study finding(s) and the second with the study implications.]

Response: Thank you for your suggestion. As noted by the Editor, there are formatting requirements that prevent us from including a conclusion section.

4. Introduction

a. p.4 of 42, lines 45-52: it is unclear how the “communication from healthcare providers” is a factor that mediate the impact of delays in access to surgical care. Please explain.

Response: Thank you for providing an opportunity to clarify. We have added some context to this sentence.

Page 4, paragraph 2: “Factors that mediate the impact of delays in access to surgical care include patient choice in the delay and the quality and quantity of communication from healthcare providers.(7, 8)”

b. You state that “it is unclear if these pre-pandemic factors are consistent with the effects of delaying surgery…” What are the pre-pandemic factors you’re referring to? Further, the sentence needs to be clarified.

Response: Thank you for pointing out the vagueness of this sentence. We have revised the sentence on page 4, paragraph 2 to read ”It is unclear if these pre-pandemic factors (poor physical and mental health and quality of life) are consistent with the effects of delaying surgery in the context of the COVID-19 pandemic because evidence of the impact of delayed surgeries during COVID-19 is still in its infancy.”

23. Methods. p.6 of 42, lines 3-6: in the data collection, please specify when did you reach saturation, at how many interviews. Is it 16?

Response: Thank you for providing an opportunity for adding this important information. No new themes emerged after interview 13, but we continued the interviews that were scheduled to ensure saturation had indeed been reached.

Page 7, paragraph 1: “Ten interviews were anticipated but interviews continued until saturation was reached (no new themes or novel data were identified) and recruited patients with varied ages, gender, type of surgery and geographical location. Saturation was achieved, no new themes were added, after the thirteenth interview.”

24. Results

a. In your manuscript as well in the quotes, there is a lot of mention for the term “fear”, however it is weird that it does not appear in any of your themes or descriptive codes. How would you explain that? Please clarify.

Response: We agree that “fear” and “worry” were endorsed by several participants. We felt that both fear and worry were captured collectively through our mental health subtheme and in our uncertainty theme (frequently fear and worry were a consequence of the uncertainty). We have added the word “fear” to the discussion around worry in both of these themes.

b. p.7 of 42, lines 42-43: when referring to figure 1 (page 26 of 42) one cannot clearly see the themes. Although the figure could be useful for a ppt presentation, I'd suggest a more organised and comprehensive figure or diagram representing the themes and subthemes.

Response: Thank you for highlighting that discrepancy between the themes and word cloud. We have moved this figure to an appendix (Appendix C).

c. p.9 of 42 lines 10-14: please nuance when you report "newly diagnosed depression". Was it diagnosed by a physician?

Response: We have added that this was physician diagnosed depression on page 10, paragraph 3: "The impacts on mental health ranged from disappointment to depression and anxiety. Participants expressed a feeling of depression with the delay of surgery and related to navigating the impacts of the delay. Feeling depressed ranged from passive comments of feeling low, (e.g., "Right now I'm a little depressed… but I keep telling myself let it go") to newly physician diagnosed depression."

d. p.10 of 42, lines 2-6: please modify the sentence so the term "because of" becomes less repetitive.

Response: We have revised the sentence on page 11, paragraph 2 to read: "Some participants also described changes to their sexual relationship with their partners because of difficulty with intercourse related to their unresolved health issues."

e. p.13 of 42, lines 47-48: I think that all mentioned themes are COVID-19 related, so the current theme 3. "COVID-19-related impacts" is somehow very general and confusing. Are you talking about social life (social activities, time off work, etc.) specifically, or are you talking about COVID-19 SPECIFIC impacts? My suggestion, if possible, is to try and find a more specific title to this theme that better reflects its content.

Response: Thank you for pointing out the challenging terminology. We agree that all themes contain COVID-19 related impacts. This theme was more precisely related to unique COVID-19 circumstances so we have taken the Reviewer's suggestion to call this theme "COVID-19 specific factors".

f. p.16 of 42, lines 52-55: please give an example of these approaches that have been offered to decrease wait time and increase efficiency of surgical care.

Response: We have clarified what approaches these studies suggest could manage surgery waitlists.

Page 18, paragraph 2: "Approaches to decrease wait time and increase efficiency of surgical care to create more capacity, and increase quality, during COVID-19 and beyond have been proposed.(33-35) These approaches include single entry system for surgical referral (i.e., central access and triage model), team-based care, and implementing guidelines that improve care and care processes.(33-35)"

g. p.17 of 42, lines 26-41: strengths and limitations: please remove brackets when mentioning strengths of your study. Also, I think there are more limitations to be mentioned. For instance, how the type of the delayed surgery might have impacted patients' experiences and answers? How participants' demographics might have impacted your findings?

Response: Thank you for highlighting some additional issues to discuss in our limitation section. These have been incorporated on page 19, paragraph 2:

“Limitations. While this study has several strengths (data collection continued after we reached thematic saturation to ensure a broad perspective of a varied patient sample, we used iterative member checking, we captured patient perspectives from diverse backgrounds and clinical areas and our team engaged in peer debriefing during analysis) our findings should be interpreted with limitations in mind. Participants were limited to a single province, during the largest wave to date of the COVID-19 which may differ from the unique experience with COVID-19 of each province. Moreover, while we tried to capture a variety of responses based on age, gender, geographical location, and type of surgery there were few patients that had (or planned to have) surgery at small community hospitals or were undergoing surgery for cancer; the reason for the small number of patients in these categories may be related to the small number of surgeries conducted at small community hospitals and that cancer surgeries were prioritized in Alberta during disruptions to surgical services.”

25. Minor modifications

a. Please note that quotation marks are sufficient to report participants’ quotes and there is no need to insert brackets. Thanks for modifying where applicable. For instance, p.8 of 42 lines 8-13, p.9 of 42, etc.

Response: Thank you for noting this. As per the journal formatting, all quotes have been moved to tables.

b. p.4 of 42, line 55: Add a comma after “with the continued rise in delayed surgeries”

Response: We have added a comma after this portion of the sentence.

c. p.6 of 42, line 8: add a comma after “type of surgery”

Response: We have added a comma after this portion of the sentence.

d. p.16 of 42, line 26: Please add “that” after suggests

Response: This error has been corrected.

Reviewer 2: Dr. Jasmine Pawa / University of Toronto / Public Health Physicians of Canada

Thank you for the significant work on this paper and the opportunity to review.

Response: Thank you for a very thoughtful and informative review of the manuscript. We appreciate your time and insight.

1. There is an inconsistency/error in the abbreviation in the first sentence regarding COVID-19 naming. See here for more information: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technicalguidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it.

Response: Thank you for this reference. We have updated the terminology to reflect the WHO nomenclature. This change is reflected on page 4, paragraph 1: “The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing the coronavirus disease (COVID-19) was declared a pandemic by the World Health Organization (WHO) in March 2020.”

2. P4/5 - not quite sure how the wave dates were obtained? They don't seem fully consistent with other sources - may be best to check this and use approximate months as opposed to exact dates.

Response: Thank you for noting this. The date for the waves were obtained from data collected by Alberta Health. However, since the specific date for the beginning and end of each wave is not precise, we agree with the Reviewer and have included months and years rather than specific dates. The dates are included in the methods section.

Page 5, paragraph 3: "This study took place in Alberta from September 14, 2021, until December 1, 2021. At the time of writing experienced four waves of COVID-19;(15) wave one (early March 2020 to early May 2020) resulted in a reported 30% decrease in surgical capacity, wave two and three had no strategic decrease in surgical capacity, and wave four (September 2021 to the time of writing in November 2021) resulted in all non-urgent surgeries being delayed (only emergent and urgent surgeries performed) with an estimated 60-70% decrease in surgical capacity.(1)"

3. P4/5 - Is there consideration that social media/news recruitment was likely to select towards those who felt strongly about this issue / certain ages / etc? Perhaps this should be mentioned in the limitations.

Response: Thank you for the opportunity to expand our description of the limitations of this study.

Page 19, paragraph 2: "Limitations. While this study has several strengths (data collection continued after we reached thematic saturation to ensure a broad perspective of a varied patient sample, we used iterative member checking, we captured patient perspectives from diverse backgrounds and clinical areas and our team engaged in peer debriefing during analysis) our findings should be interpreted with limitations in mind. Participants were limited to a single province, during the largest wave to date of the COVID-19 which may differ from the unique experience with COVID-19 within each province. Moreover, while we tried to capture a variety of responses based on age, gender, geographical location, and type of surgery there were few patients that had (or planned to have) surgery at small community hospitals or that were undergoing surgery for cancer; the reason for the small number of patients in these categories may be related to the small number of surgeries conducted at small community hospitals and that cancer surgeries were prioritized in Alberta during disruptions to surgical services. Finally, we chose to recruit patients through social media because recruiting through surgery clinics was challenging due to limited in-person visits during COVID-19 and to reach patients throughout the province; however, this may have selectively included patients who had strong responses and opinions on the delay of surgeries which may have skewed our findings."

4. P5 - Thank you for clarifying the relationships regarding health care providers and service delivery, helpful context. May also be helpful to include an additional sentence on reflexivity (not so much declaring bias one way or another but more reflecting on how one's own beliefs and experiences, such as experiencing the pandemic measures, may be interacting with the research). An example of some comments on reflexivity are here: "Reflexivity generally refers to the examination of one's own beliefs, judgments and practices during the research process and how these may have influenced the research. If positionality refers to what we know and believe then reflexivity is about what we do with this knowledge. Reflexivity involves questioning one's own taken for granted assumptions. Essentially, it involves drawing attention to the researcher as opposed to 'brushing her or him under the carpet' and pretending that she or he did not have an impact or influence. It requires openness and an acceptance

that the researcher is part of the research (Finlay 1998)." (Education Studies, University of Warwick. "Reflexivity." Last updated Oct 9, 2017. Accessed from https://warwick.ac.uk/fac/soc/ces/research/current/socialtheory/maps/reflexivity on April 5, 2021).

Response: We agree that more information about the position (biases and assumptions) of the study team are warranted. We have added a section for reflexivity and have provided additional information about the study team's experience with the pandemic response as related to this study.

Page 7, paragraph 2: "Reflexivity: Interviews were conducted by experienced facilitators (CS, JK, ES, NJ). The facilitators were female graduate students and a research associate with experience in qualitative methods, but not within the area of surgical care or COVID-19, who volunteered to conduct the interviews. Therefore, there were few assumptions or bias with regards to the results of the study. The facilitators and Principal Investigator (study team) had formal graduate training in qualitative methods or experiential training in interview facilitation and had graduate degrees in public health. The study team did not have previous relationships with the participants or their healthcare providers. The study team experienced the pandemic and the response to the pandemic differently with regards to disruptions to family and work life, however none of the members of the study team had surgery or were waiting for surgery during the pandemic."

5. Abstract & P5 - There is obviously a lot of debate within the terminology and approaches for qualitative methods. The use of Thorne's interpretative descriptive approach is clear and reflected in the references. It may be helpful to state/clarify that it has many links / is often based in nursing practice. While I don't have specific changes to suggest if "thematic content analysis" is felt to be the best description of the approach and applied - I would encourage the authors to reflect on approaches taken and references included future work, including the potential confusion with the term "content analysis," with some who argue that that "content analysis" is less a fit with qualitative methods…

Response: Thank you for your comments and suggestions on qualitative methodologies. We agree there is debate about the best approach. We chose interpretative descriptive approach because it aligned with our objective of describing the experience of patients within a clinical context. The methods for sampling and data analysis were directly based on the work by Thorne and the interpretative descriptive approach.

6. P6 - indicates the "majority" were women - is this closer to 55% or 95% for example...? May help in understanding participant views. I'm not sure if any information is available on the rough proportion of individuals by gender who had delayed surgery? Was there any difference in the findings from those who had already had their surgery completed and those who had not?

Response: We have now included the exact proportion that were women in the body of the manuscript on page 8, paragraph 4 to page 9, paragraph 1: "Briefly, the mean age of the participants was 47 years old (range=27-75), with the majority (62.5%) identifying as women." and in Table 1.

We considered the perspectives of patient who had and had not had their surgery completed but could not determine if there were any differences in perspectives between the two groups.

7. P7 - grammar issues in a few places throughout.

Response: Thank you for pointing out these errors. We believe we have addressed grammatical errors.

8. P13-14 - not quite clear on the COVID-19 theme - isn't there significant overlap with the other themes identified? In general, I wonder if some of the organization / naming of the themes could be improved/clarified?

Response: Thank you for raising this issue. We have renamed this theme – it is now "COVID-19 specific factors". We agree that there is overlap with other themes, however based on the overwhelming endorsement that the specific context of COVID-19 has added complexity to the impact of delaying surgeries we felt it necessary for COVID-19 factors to be a separate theme.

9. P15 - For the studies referenced, would be helpful to how the length of delays compared to the findings of this study.

Response: The Reviewer raises an interesting point. Unfortunately, we did not ask patients how long their surgery was delayed so we cannot comment on how the referenced studies compare to ours.

10. P16 - How do the delays / timeframes noted in this study compare to average wait-times / waitlists in non-pandemic times?

Response: As noted above. While this would be an interesting comparison, we did not capture length of wait from the participants and therefore cannot make the quantitative comparison between our study and others.

11. P16-18 I think a bit more information on what is novel in these findings and how they can be helpful with next steps may be beneficial. [Editor's note: please note that claims of novelty are not permitted in CMAJ Open, even if true. However, it is appropriate to point out any important findings that could have implications in policy or practice.]

Response: We have revised the interpretation section extensively to reflect the Reviewer's suggestions.

We note that these findings help identify the impact of delaying non-urgent surgeries during COVID-19 – an area of research that is sparce, on page 20, paragraph 2: "Our findings illustrate the direct and substantial impact delaying surgery has on patients, specifically the 1] individual-level impacts (subthemes: physical health, mental health, family and friend impact, work impact, quality of life), 2] system-level factors (subthemes: communication, healthcare resources, perceived accountability/responsibility), 3] COVID-19-specific factors and 4] uncertainty."

We also indicate the utility of our findings in improving surgical care. For example, on page 20, paragraph 2: "The interplay between the themes identified in our study suggests it is important to consider all these factors when measuring and developing strategies to mitigate the impact of delaying surgery."

12. Table 1 - quite a lot of detailed patient information is included here, seems specific enough to nearly be identifiable for some, just confirming the patients/members of the public are comfortable with this and the detail adds value? [Editor's note: please see Editors comments on this important issue.]

Response: Thank you for allowing us the opportunity to revise Table 1. We have removed any information that could possibly identify patients. For example, now we only report the health region where patients reside, their age category and the COVID-19 wave when they were intended to have surgery.

13. I found the editorial by Sally Thorne "Beyond theming: Making qualitative studies matter" in Nursing Inquiry from 2020 (https://doi.org/10.1111/nin.12343) interesting to reflect on and it may be helpful to review.

Response: Thank you for providing the reference for this interesting article; it was helpful in revising our interpretation section.

Thank you again for the thoughtful work on this important topic and the opportunity to share a few thoughts.

Response: Thank you again for your critical appraisal of our work. We believe incorporating your feedback has strengthened the manuscript.