

## Peer Review File

Article information: <https://dx.doi.org/10.21037/mhealth-23-15>

### Reviewer A

A few general comments

The scope of this study is quite broad, and the aims are slightly vague. Highlighting lessons learnt during the pandemic is important in itself, however there are a number of systematic reviews that have created a shared understanding of the issues of efficacy, applicability, acceptance. There is benefit to adding to the discussion around economic viability, legislation and insurance aspects of telehealth in the US.

There are major revisions required in the methods section as there is not sufficient detail for a narrative review of the literature.

There are still a number of minor spelling and grammatical errors in the paper. Consistency with singular and plural, tense change and terminology.

The below article is useful in formulating a narrative review.

<https://researchintegrityjournal.biomedcentral.com/articles/10.1186/s41073-019-0064-8>

The below study is a good example of a narrative review, specifically the methods section and results section.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3145536/>

**We thank the reviewer for these comments and the citations provided, as well as other mHealth narrative reviews, were used to format the study. Limitations of methods section addressed below but the topic and aims were based on the request for this invited manuscript therefore will be maintained.**

Abstract.

Line 11-15 – Single long sentences loose impact, this sentence is combining several ideas. Consider splitting up ideas.

Line 16-18 – What is the range of dates your are looking at? This needs to be more specific, such as between XX March 2020 to 1 February 2023.

Line 26-29 – Conclusion statement can be split again as this is difficult to read.

**Thank you, updated in manuscript.**

Introduction

Line 33-35 - These statements need referencing. In addition these statements, while they feel correct due to the culture within the US, they are making sweeping generalizations that may not be proven across the US.

**These are the authors statements and therefore do not need referencing. I did remove the word enhanced, as this is more subjective but it is impossible to deny that telehealth changes care delivery.**

**Lines 45-46:** “Telemedicine, also known as telehealth, has changed the delivery of care throughout the United States and the world.”

Line 33-36. – The statistics used are not accurate based on your reference. The reference Cross river therapy is also not the original source of the data, and is a private organization dealing to Telehealth,

which would create bias. Please use the original references, link at the bottom of the cross river therapy article.

**Reference updated, original reference and numbers included lines 47-49:**

“the use of telehealth in the US increased 154% increase during early stages of the pandemic and stabilized at levels 38 times higher than levels in 2019.”

Line 36-39 – The reference provided does not support this statement, it is a guide to service implementation not research into the expansion of telehealth services.

**Reference updated to CMS statement on this issue**

Line 40 - “focus for using telehealth to minimize the spread and increase the patient care of COVID-19 has changed” do you mean improve patient care during COVID-19 , or increase volume of service provision at a distance during COVID-19.

**Removed the second half of that sentence, the initial focus was to minimize spread of the virus as highlighted in the CMS reference above.**

**Lines 52-54:** “focus for using telehealth to minimize the spread of COVID-19 has changed to understanding best practices and lessons learned that can be applied to the future of virtual care delivery.”

Line 44-48 – Definition of telehealth could be more specific about AV, telephone or what platforms are used in the US (MS teams/Zoom)

**This is addressed later in the paper in the section titled Telehealth modalities, line 86**

Line 51-65 – This seems to be part of the core argument of this paper and is clearly written. There are some minor grammatical errors to correct. (line 52,56, 57) and However the references (5) is specific to the field of urology and may not generalize to other health sectors.

**Thank you for highlighting these grammatical errors, they have been updated.**

**Regarding the policy barriers, while the publication is from a urology journal the barriers and policy issues identified were not specific to urology as they were specific to telehealth in the US**

Line 71-72 - The rationale for excluding behavioral disciplines is not explained in enough detail. And you need to explain why you have chosen only medical and surgical populations.

**The reasoning for this was the scope of the invited review, it was already broad to begin with and did not have the word count to address this as well.**

Line 76-77 – The health system in the US is unique and the systems in place within the US are not generalizable to other health systems internationally.

The objective stated on line 75 is too vague. Can you please add a specific set of questions you are answering in the research.

**We thank the reviewer for this suggestion but feel the aim is purposefully open ended for the mHealth readers and based on the scope of the invited manuscript.**

**Lines 77-79:** “We focused our review on research evaluating impact of outpatient telehealth on patients, providers, and health systems; as well as highlight lessons learned since the declaration of a public health emergency (PHE) in the United States.”

Methods

The methods section needs major revisions as there is limited detail on your data collection and analysis process.

Line 82 – There should be more detail on What is the range of dates your are looking at? This needs to be more specific, such as between XX March 2020 to 1 February 2023.

**This is an important detail and has been updated in lines 166-167:**

**“March 13 2020,when the United States declared a national emergency concerning COVID-19, and February 28 2023”**

Can you add the following details to the methods section.

Inclusion and exclusion criteria.

How articles were screened for inclusion/exclusion.

**Thank you for this query, we have expanded on criteria and the screening process in lines 169-174: “We searched these databases from August 2022 to February 2023 using MeSH and free text terms telehealth, telemedicine, as well as outpatient telehealth and outpatient telemedicine. The abstracts were reviewed by two of the authors to ensure findings were applicable to the four categories of interest for this narrative review: patient-centric outcomes, provider-reported outcomes, and clinical outcomes.”**

How articles were reviewed and criteria used by the primary and secondary authors to extract information. Was there a form or template used for consistency.

How was data synthesized and analyzed by the research team.

How was data quality assessed.

You should summarize how many articles were reviewed and how many articles were selected for each section of your results.

**The remainder of the questions above are more applicable to a systematic review or metanalysis and were not required in the mHealth narrative review rubric provided with the invitation for this manuscript.**

Results

Can you add a title for the results section

**Thank you for pointing this out, it has been added.**

I would recommend major revisions as this section could be more concise and is difficult to follow the points/themes you are trying to present.

**The points/themes are highlighted in the discussion, the results are broken down into different categories to help readers identify area of interest/relevance and be able to find relevant information and data.**

The tables provided are a good summary of the papers included in each section of the results.

**We thank the reviewer for this comment, we felt that providing a quick to review reference would result in more engagement with this paper and ultimately lead to more citations of mHealth as a recently indexed journal**

The section on telehealth modalities is background information and can be moved to the introduction. Line 96-178

**This is an excellent point and the section was moved to before the methods, to highlight that this is still providing context for the paper**

The results section in general could be more concise. You could consider grouping the findings into themes to make it easier to follow. There is a lot of information that gets lost in the results section. The individual findings are summarized nicely in the tables you have presented. I recommend focusing on the themes arising from each section, and then summarizing how the studies you selected support or refute the theme. I would also recommend grouping the study types together such as rating scale, RCT ect in separate paragraphs. AS this helps discuss levels of evidence and strength of findings.

The details of the studies, such as participant number, cohort and dates are in your table, you do not need to repeat this in the results. Referencing the paper and presenting the relevant results that support your theme would be sufficient and improve clarity.

**The reviewers comments have been taken into consideration but given the value noted by the authors and other reviewers, no changes have been made.**

#### Discussion

There could be considerably more detail in the strengths and limitation section of this study.

There are numerous limitations to the studies selected which need to be discussed as part of the quality of evidence for this study. This would include strength of evidence, criteria used, bias and measures used.

There are limitation to the research method used and the selection criteria used.

There are a very limited number of studies in each category, so while this does provide an overview, it has limited ability to draw conclusions.

**To address these concerns, lines 684 to 689 have been added which will help highlight to readers that this is a narrative review and not a comprehensive systematic review or meta-analysis:**

**“Most notably, as a narrative review as opposed to a systematic review or meta-analysis, it is beyond the scope of this analysis to evaluate the strengths and weaknesses of each individual study referenced. However, this study provides a starting place for clinicians, researchers, and policymakers to understand and evaluate existing data that emerged due to changes imposed by the COVID-19 public health emergency in the United States.”**

Line 763-767 is a conclusion rather than a limitation.

**We thank the reviewer for highlighting this, we have moved that line to the beginning of the conclusion/summary.**

#### Summary

The points you are making are valid and interesting, however they can be phrased differently. The summary reaches conclusions that are phrased in a way that is not supported by the research. Narrative reviews can highlight themes arising in the literature, but do not carry the weight of evidence that systematic reviews or meta analyses have and cannot definitively draw conclusions.

For example Line 776-778 – This statement can not be drawn from this study and is too generalized.

**These are important points– there were words that suggested causality instead of association and the section has been updated to reflect these changes.**

**Lines 718 to 723:** “. The data also highlights that if an in-person exam, intervention, or surgery is not needed, the medical decision making based on the clinician’s judgement suggests there is no difference in clinical outcomes. For healthcare leaders and administrators, this review highlights how telehealth integrated with existing health systems acts as a substitute for in-person care with the potential to maintain or improving clinical efficiency.”

I would recommend including a table of key findings highlighted by this narrative review and recommendations arising from this study.

**We thank the reviewer for this suggestion; however, it would feel irresponsible to make formal recommendations from a narrative review as it lacks the rigor of a systematic review/met-analysis. Additionally, given the broad scope of this article, a table here would likely resemble the conclusion as is but in table form, thereby not adding much to the current draft in terms of conciseness.**

**We have, however, highlighted that ongoing research is needed esp since telehealth flexibilities are not permanent and data is required to highlight to policymakers what are the most effective ways to leverage telehealth to connect patients with their doctors. Lines 726-729: “Given that the largest barriers to continued use and adoption of telehealth are regulation and reimbursement, it is critical for clinicians, health systems, and researchers to continue analyze the impact of telehealth on patient care to craft permanent health policy changes based on real-world experiences.”**

#### References

There are a number of references that are websites, opinion pieces or private organizations that are not reputable research organizations or in peer reviewed journals. Could you check the references?

**Thank you, the references have been reviewed and updated**

#### **Reviewer B**

This is a comprehensive and well-structured narrative review of telehealth use in the United States, in outpatient settings, during the COVID-19 pandemic.

**We thank this reviewer for their thoughtful comments and taking their time to provide detailed feedback that has strengthened the manuscript of this invited narrative review.**

My comments are as follows:

1. The aim of the narrative review and justification is clear to readers. However, I would recommend defining “behavioral disciplines” (line 72) for international readers, as this is not a term commonly used outside of the USA.

**This is an excellent point and line 80 (in the revised manuscript) has been edited to reflect this change:**

**“behavioral or mental health disciplines (i.e. psychiatry, psychology, social work)”**

2. In the methods section (lines 79-92), the date (not just month and year) of the search should be included.

**Thank you for pointing this out, we have updated lines 166-167 to reflect this**

3. In the methods section (lines 79-92), the search terms used (including MeSH and free text search terms) should be included.

**We appreciate you highlighting this, lines 170-171 have been updated:**

**“We searched these databases from August 2022 to February 2023 using MeSH and free text terms telehealth, telemedicine, as well as outpatient telehealth and outpatient telemedicine.”**

4. In the “Physician and provider reported outcomes” paragraph (line 238), for a balanced

discussion, it would be worthwhile including the disadvantages of telehealth, such as limited ability to perform a physical examination, technological limitations, difficulty in building rapport, concerns around patient privacy, etc. (see Breton et al. 2021. ‘Telehealth challenges during COVID-19 as reported by primary healthcare physicians in Quebec and Massachusetts’).

**Thank you for this suggestion, we have updated this section with lines 238-241:**

**“In contrast, primary care physicians/providers have expressed concerns with telehealth including, technology-related barriers, evaluations without a physical exam, duplication of consultations, weakened therapeutic relationships, and hindered patient engagement/expectations.”**

5. Line 280: “telehealth” needs capitalisation to clarify that this is a new sentence.

**Thank you for catching this, the update has been made.**

6. Lines 340-344 are unclear. Do the authors mean that patients with higher LACE index scores were more likely to complete their visits via telehealth, as compared to in-person? This needs clarification for readers.

**We appreciate the reviewer for highlight this. To improve readability of this section, lines 321 to 324 have been updated:**

**“Importantly, the study suggests that patients with higher LACE index score (length of stay (L), acuity of the admission (A), comorbidity of the patient (C) and emergency department (E) use in the 6 months before admission, a readmission risk score 36) were more likely to complete their visits when using telehealth compared to in-person follow-up. The authors highlight how patients with higher LACE scores had lower completion rates overall but telehealth helped mitigate this difference compared to the rest of the cohort.”**

7. Lines 391-394 are unclear. Do the authors mean that more than half of the high-risk providers worked at medical practices with other high-risk providers (those who have been flagged as high-risk to Medicare)? This needs clarification for readers.

**Thank you, we have updated this section to improve the clarity of this sentence:**

**“In addition, more than half of the high-risk providers identified are a part of medical practices where multiple providers have been flagged as high risk to Medicare due to potential fraud, waste, or abuse.”**

8. Line 422: parentheses missing after “n=6, 8.3%”.

**This is appreciated and has been corrected in the manuscript.**

9. Lines 450-460 and 462-469: it would be worthwhile providing context for readers and specifying what kind of RPM was used in these studies.

**This is an excellent point and the kind of RPM has been added to both sections and bolded in the manuscript.**

**Lines 419-422:**

**“In this RPM program, patients were provided with cellular-enabled tablet; preconnected, Bluetooth-enabled, medical grade devices (blood pressure cuff, pulse oximeter, and scale); and a thermometer for self-reported temperature to provide twice daily symptom reporting along with vital signs.”**

**Lines 433 – 437:**

**“The patients randomized to RPM were given a digital tablet and digital blood pressure cuff,**

**thermometer, weight scale, and pulse oximeter. They answered a survey on questions related to post-operative complications along with submitting vital signs and if there was a concern, they received a nursing phone call.”**

10. In the limitations section (lines 757-767), it may be worth including a statement about limited generalizability to inpatient and emergency department settings in the USA, as some of the findings from those contexts are quite different to outpatient literature.

**Thank you for adding this, especially since we excluded studies in these areas important to highlight this in addition to the limited generalizability outside of the US.**

**Lines 692-695:**

**“Given that the studies analyzed were from the United States, there is limited generalization to other countries. There is also limited generalizability to health care delivery settings beyond outpatient care, such as emergency departments, inpatient units, and intensive care units.”**

11. Please review p-value reporting (lines 191, 193). Instead of  $p=0.000$ , this should be displayed as  $p<0.001$ . It is also accepted standard to report p-values less than 0.001 as  $p<0.001$  (line 206, 215). There are also inconsistencies in the presentation of p-values, with some appearing as “<.001” (line 523, line 525) and others as “<0.001” (lines 407-409, line 585). I would suggest choosing one style and using this consistently throughout the narrative review to improve readability.

**This is an excellent point. We have updated the p values to be consistent within our narrative review, and not simply reported as the individual authors initially did in their publications.**

12. Similarly, for confidence intervals, I would choose one style and use this consistently throughout the narrative review to improve readability. E.g., APA style where the CIs are reported with brackets around the upper and lower limits: 95% CI [x, y].

**Thank you you again, like above this has been updated throughout the manuscript.**