

# OBSTETRICS & GYNECOLOGY



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- Comments from the reviewers and editors (email to author requesting revisions)
- Response from the author (cover letter submitted with revised manuscript)\*

*\*The corresponding author has opted to make this information publicly available.*

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[obgyn@greenjournal.org](mailto:obgyn@greenjournal.org).

**Date:** Aug 05, 2019  
**To:** "Nathaniel Denicola" [REDACTED]  
**From:** "The Green Journal" em@greenjournal.org  
**Subject:** Your Submission ONG-19-1212

RE: Manuscript Number ONG-19-1212

Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review

Dear Dr. Denicola:

Your manuscript has been reviewed by the Editorial Board and by special expert referees. Although it is judged not acceptable for publication in Obstetrics & Gynecology in its present form, we would be willing to give further consideration to a revised version.

If you wish to consider revising your manuscript, you will first need to study carefully the enclosed reports submitted by the referees and editors. Each point raised requires a response, by either revising your manuscript or making a clear and convincing argument as to why no revision is needed. To facilitate our review, we prefer that the cover letter include the comments made by the reviewers and the editor followed by your response. The revised manuscript should indicate the position of all changes made. We suggest that you use the "track changes" feature in your word processing software to do so (rather than strikethrough or underline formatting).

Your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Aug 26, 2019, we will assume you wish to withdraw the manuscript from further consideration.

#### REVIEWER COMMENTS:

Reviewer #1: DeNicola and colleagues present findings from a systematic review of the literature designed to assess the emerging field of telehealth interventions in women's health to improve obstetric and gynecologic health outcomes. The authors provide a very comprehensive review of the English literature related to the use of telehealth approaches in OB/GYN. The paper is exceptionally well written. While there are some minor concerns with the paper, the overall approach and results presented represent a solid contribution to the literature. A point-by-point critique of the paper follows:

- 1) In the Methods of the paper the authors provide a description of the search performed for the systematic review. The authors restricted their review to English language only and provide no date parameters. Why did the authors not consider non-English articles that might have otherwise met inclusion criteria? Were there any studies identified that were not in English that might have otherwise met study inclusion criteria? This should be reported in the revised paper. The authors also provide no date parameters for the search. The authors should provide the limits of the search performed from the beginning of inception of the search tools used to the date that the authors performed their literature review. The specific dates of the literature search should also be provided in the revised paper.
- 2) On line 100 and 104 of the paper the authors reference a "research manager", "research chair", and "research team". Were these individuals the paper co-authors or other individuals.? It may be helpful to provide the authors initials for the role of research manager and research chair.
- 3) In the Methods section of the paper under "Study Selection" the authors state (lines 125-126) the authors state that randomized clinical trials and comparative observational cohort studies were included in their study. However, on lines 162 and 173 of the paper the authors note that case-control studies were included and on line 193 of the paper the authors note that a non-randomized study was included. The statement on lines 125-126 should be revised to more correctly report the studies included in their systematic review.
- 4) Throughout the paper as the individual study categories are reported (eg line 131, 161, 188, 231, 256 etc) the authors state that 2 reviewers evaluated the respective papers. It would be useful to include the author initials for each of these review groups in the revised paper.
- 5) The paper would benefit from a Figure depicting the entire result of the literature review with visual depiction of the exclusions/ inclusions and resultant articles in each category (Family planning, low risk OB, high risk OB, gynecologic) or study type ultimately included and evaluated.

Reviewer #2: Thank you for the opportunity to review ONG-19-1212, Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review. The topic is too broad, leading to the conclusion of "need for further research" as uninformed by this review for gaps in knowledge and implications for future studies. Section topics with "one study" descriptions yield annotated bibliographies, rather than critique and synthesis.

Although the team followed PRISMA, there are issues with the methods utilized. The initial question is not adequately targeted. The operational definition of "telehealth" is expansive. "For this review, telehealth is defined as the technology-enhanced health care framework that includes novel services such as virtual visits, remote patient monitoring, and mobile apps or text messaging." Conceptually, how is "communication" operationalized? Are the tele-supported activities one-way or two-way? "Visits" implies interaction, whereas the other modes can be one-way unless there is response to the data input.

Types of tele-methods likely developed quickly over time, making the year of publication critical to the search terms. Years and keywords specific to a narrowed topic would be expected to lead to more meaningful results. The studies are inadequately appraised, under the assumption that at least two comparison groups in a study guarantees rigor. Writing varies between use of "telehealth" and "telemedicine," inconsistent with the title and diminishing rigor.

Reviewer #3:

Precis: A systematic review of the literature examining the benefits of Telehealth Interventions on obstetric and gynecologic outcomes.

Article type: A systematic review

Overall:

A review of literature describing the effect of telehealth on ob/gyn outcomes. There appears to be a positive impact on smoking cessation, breast-feeding, and less progression of gestational HTN to preeclampsia as well as decrease in number of high-risk Ob outpatient visits with the use of telehealth interventions. Continuation of OCP and injectable contraception as well as increase in the use of OCP was also positively influenced by telehealth interventions. There is limited use of telemedicine in urinary incontinence, STI notification, menopausal respiratory symptoms, and no difference in access to abortion services.

The authors have an extensive introduction. However, a shorter more concise intro detailing how and why telemedicine could benefit women's health as well as detailing potential risks-delineate these risks.

The goal of this paper is to review the literature for robust evidence for telemedicine interventions. The different areas were separated which helped me to follow each outcome in the paper. However, I found that in the discussion section many points in the results section were repeated, which is not needed. Instead, a detailed discussion and critical thought process of the impact of these results as well as strengths and limitations of the studies findings is more important. Overall, the writing is a little lengthy and could possibly be made more straightforward and concise.

I didn't see where IRB approval is not discussed but not likely needed.

There are no apparent conflicts of interest.

Short explanation of deviation from PRISMA up front?

ABSTRACT:

30 To systematically review the emerging field of telehealth interventions to improve obstetric and gynecologic health outcomes.

Maybe instead: To systematically review the use of telehealth interventions to improve... ...  
Overall-concise and to the point

INTRODUCTION:

Introduction-please shorten and stay on target with the goal of the study.

53-58 seems to take us away from the point of the study-not sure what this means. Could stay on point regarding telehealth and its uses.

Main Paper:

Could be revised to a shorter more concise version

## CONCLUSIONS

14. Good and concise.

## 15. TABLES

Submitted-good but sometimes difficult to understand and should be checked to ensure that it follows guidelines.

## 16. REFERENCES

very extensive reference list

## STATISTICAL EDITOR COMMENTS:

The Statistical Editor makes the following points that need to be addressed:

Since this was a systematic review, not a meta-analysis, there was not a lot of stats to review. This area of medicine is of interest and will be no doubt applied more and more. However, I think that the sections re: limitations and suggestions for future research could be strengthened.

Many of the studies were RCTs, but self-reporting of results may have introduced bias, as evidenced by the difference between self-reported data vs corroboration with biochemical validation in the smoking cessation studies (lines 165-169).

Another issue is how representative the participants were vs all women with the same characteristic. That is, how were the women recruited, what proportion should complete the study in order to have valid, generalizable conclusions, and what length of follow-up should be expected to ensure that the results are not a transient Hawthorne effect?

Although there was heterogeneity in responses, some areas had disappointing results, such as wgt reduction, glycemic control in DM. While other areas, such as HTN control. Were there general conclusions that could be made regarding studies in those areas that could aid in design of future studies to enhance the impact of telemedicine?

A more general suggestion, would be, when possible, to avoid reporting proportions, then odds ratios. If possible, summary results all in one format (proportions in treated and control groups) might be less confusing for the reader and also would allow for interpretation of changes on an absolute scale, rather than as ratios of odds.

## EDITOR COMMENTS:

1. Thank you for your submission to Obstetrics & Gynecology. In addition to the comments from the reviewers above, you are being sent a notated PDF that contains the Editor's specific comments. Please review and consider the comments in this file prior to submitting your revised manuscript. These comments should be included in your point-by-point response cover letter.

\*\*\*The notated PDF is uploaded to this submission's record in Editorial Manager. If you cannot locate the file, contact Randi Zung and she will send it by email - rzung@greenjournal.org.\*\*\*

- The précis is a single sentence of no more than 25 words, written in the present tense and stating the conclusion(s) of the report (ie, the bottom line). The précis should be similar to the abstracts conclusion. Do not use commercial names, abbreviations, or acronyms in the précis. Précis should be the "hook" for people who scan the Table of Contents to see what to read. It shouldn't not include statements like "in this study" or "we found". Just state what you found.

- We prefer to avoid providing p values only unless that is the only appropriate test of significance. Where possible in the abstract AND the text, please provide an effect size (such as an OR or RR) and 95% CI's.

- for clarity, it was intended that the telehealth interventions here would replace a regular ambulatory appointment so this is a good thing, correct? The way this reads, one could assume that the interventions were associated with women avoiding care.

- can you give actual percentages as you did above (lines 41).

- Really nice opening paragraph that sets up the reason for your study.

- is it possible to have the data instead for 2015 since you quote the % in 2015?
- can you do this retrospectively? The value is that it may prevent someone else interested in the topic from essentially repeating your work AND it helps others interested in the topic to find your work.
- define PICOS
- please show the data
- For each of your groups of topics (low risk, high risk, family planning, gyn) could you add to the first paragraph some clarity about the final number of included papers? For instance, this one may read "Two reviewers independently reviewed 422 unique articles [is this abstracts and titles only?] and 67 full-text articles in family planning. Twelve papers met the inclusion criteria: seven randomized trials,....."
- Much of your discussion (313-341) is a restatement of your results. Can you instead focus on some common themes you found? Types of interventions that are more effective? Types of problems that are more conducive to improvement w/ telehealth interventions [medication? lifestyle v medical care for instance? can you put the information into some context about persistent gaps in knowledge for future research to build on?
- Please explicate why this is noteworthy? Large number of published articles or relatively low percentage of those published articles that met your inclusion criteria?

2. Although many of your sources were RCTs, some were not. As such, please be very careful with the use of causal language in your precis, abstract and manuscript unless the basis for the point you are making was based entirely on an RCT.

3. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:

- A. OPT-IN: Yes, please publish my point-by-point response letter.
- B. OPT-OUT: No, please do not publish my point-by-point response letter.

4. As of December 17, 2018, Obstetrics & Gynecology has implemented an "electronic Copyright Transfer Agreement" (eCTA) and will no longer be collecting author agreement forms. When you are ready to revise your manuscript, you will be prompted in Editorial Manager (EM) to click on "Revise Submission." Doing so will launch the resubmission process, and you will be walked through the various questions that comprise the eCTA. Each of your coauthors will receive an email from the system requesting that they review and electronically sign the eCTA.

Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page.

5. As of January 1, 2020, authors of systematic reviews must prospectively register their study in PROSPERO (<https://www.crd.york.ac.uk/PROSPERO/>), an international database of prospectively registered systematic reviews. Please refer to the PROSPERO registration number in your submitted cover letter and include it at the end of the abstract.

6. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric and gynecology data definitions at <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize>. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

7. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Review articles should not exceed 25 typed, double-spaced pages (6,250 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references.

8. Specific rules govern the use of acknowledgments in the journal. Please note the following guidelines:

- \* All financial support of the study must be acknowledged.
- \* Any and all manuscript preparation assistance, including but not limited to topic development, data collection, analysis, writing, or editorial assistance, must be disclosed in the acknowledgments. Such acknowledgments must identify the entities that provided and paid for this assistance, whether directly or indirectly.
- \* All persons who contributed to the work reported in the manuscript, but not sufficiently to be authors, must be acknowledged. Written permission must be obtained from all individuals named in the acknowledgments, as readers may

infer their endorsement of the data and conclusions. Please note that your response in the journal's electronic author form verifies that permission has been obtained from all named persons.

\* If all or part of the paper was presented at the Annual Clinical and Scientific Meeting of the American College of Obstetricians and Gynecologists or at any other organizational meeting, that presentation should be noted (include the exact dates and location of the meeting).

9. Provide a short title of no more than 45 characters, including spaces, for use as a running foot.

10. The most common deficiency in revised manuscripts involves the abstract. Be sure there are no inconsistencies between the Abstract and the manuscript, and that the Abstract has a clear conclusion statement based on the results found in the paper. Make sure that the abstract does not contain information that does not appear in the body text. If you submit a revision, please check the abstract carefully.

In addition, the abstract length should follow journal guidelines. The word limits for different article types are as follows: Reviews, 300 words. Please provide a word count.

11. Only standard abbreviations and acronyms are allowed. A selected list is available online at <http://edmgr.ovid.com/ong/accounts/abbreviations.pdf>. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.

12. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.

13. In your Abstract, manuscript Results sections, and tables, the preferred citation should be in terms of an effect size, such as odds ratio or relative risk or the mean difference of a variable between two groups, expressed with appropriate confidence intervals. When such syntax is used, the P value has only secondary importance and often can be omitted or noted as footnotes in a Table format. Putting the results in the form of an effect size makes the result of the statistical test more clinically relevant and gives better context than citing P values alone.

If appropriate, please include number needed to treat for benefits (NNTb) or harm (NNTh). When comparing two procedures, please express the outcome of the comparison in U.S. dollar amounts.

Please standardize the presentation of your data throughout the manuscript submission. For P values, do not exceed three decimal places (for example, "P = .001"). For percentages, do not exceed one decimal place (for example, 11.1%).

14. Please review the journal's Table Checklist to make sure that your tables conform to journal style. The Table Checklist is available online here: [http://edmgr.ovid.com/ong/accounts/table\\_checklist.pdf](http://edmgr.ovid.com/ong/accounts/table_checklist.pdf).

15. Figures

Figure 1: Note that these four flowcharts will not fit in print as a single figure. Please break into 4 individual figures and renumber.

Figure 2: As for Figure 1, these four images will not fit as a single figure. Please break into 4 individual figures and renumber.

Additionally, if you want to keep all of the images together, you may want to consider moving some to supplemental digital content as appendices.

16. Authors whose manuscripts have been accepted for publication have the option to pay an article processing charge and publish open access. With this choice, articles are made freely available online immediately upon publication. An information sheet is available at <http://links.lww.com/LWW-ES/A48>. The cost for publishing an article as open access can be found at <http://edmgr.ovid.com/acd/accounts/ifauth.htm>.

Please note that if your article is accepted, you will receive an email from the editorial office asking you to choose a publication route (traditional or open access). Please keep an eye out for that future email and be sure to respond to it promptly.

17. If you choose to revise your manuscript, please submit your revision through Editorial Manager at <http://ong.editorialmanager.com>. Your manuscript should be uploaded in a word processing format such as Microsoft Word. Your revision's cover letter should include the following:

\* A confirmation that you have read the Instructions for Authors (<http://edmgr.ovid.com/ong/accounts/authors.pdf>), and

\* A point-by-point response to each of the received comments in this letter.

If you submit a revision, we will assume that it has been developed in consultation with your co-authors and that each author has given approval to the final form of the revision.

Again, your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Aug 26, 2019, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,  
Nancy C. Chescheir, MD  
Editor-in-Chief

2018 IMPACT FACTOR: 4.965  
2018 IMPACT FACTOR RANKING: 7th out of 83 ob/gyn journals

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## REVIEWER COMMENTS:

**Reviewer #1:** DeNicola and colleagues present findings from a systematic review of the literature designed to assess the emerging field of telehealth interventions in women's health to improve obstetric and gynecologic health outcomes. The authors provide a very comprehensive review of the English literature related to the use of telehealth approaches in OB/GYN. The paper is exceptionally well written. While there are some minor concerns with the paper, the overall approach and results presented represent a solid contribution to the literature. A point-by-point critique of the paper follows:

1) In the Methods of the paper the authors provide a description of the search performed for the systematic review. The authors restricted their review to English language only and provide no date parameters. Why did the authors not consider non-English articles that might have otherwise met inclusion criteria? Were there any studies identified that were not in English that might have otherwise met study inclusion criteria? This should be reported in the revised paper. The authors also provide no date parameters for the search. The authors should provide the limits of the search performed from the beginning of inception of the search tools used to the date that the authors performed their literature review. The specific dates of the literature search should also be provided in the revised paper.

**Given the broad scope of this manuscript as well as the volume of literature we were not resourced to review non-English articles. We did not identify any non-English papers referenced in the literature we reviewed that might have otherwise met criteria. Currently, on line 103 we say there were 'no date restrictions' imposed. Since we did not restrict the search it was intended to pick up any article from inception of telehealth tools. On line 125, we provide the date our literature search went up to September 26th, 2018.**

2) On line 100 and 104 of the paper the authors reference a "research manager", "research chair", and "research team". Were these individuals the paper co-authors or other individuals.? It may be helpful to provide the authors initials for the role of research manager and research chair.

**Correct, these were both authors listed on the manuscript. Initials have been added to lines 100-104 for the research manager and research chair. The remaining initials for the research team were added to the introduction of each results section.**

3) In the Methods section of the paper under "Study Selection" the authors state (lines 125-126) the authors state that randomized clinical trials and comparative observational cohort studies were included in their study. However, on lines 162 and 173 of the paper the authors note that case-control studies were included and on line 193 of the paper the authors note that a non-randomized study was included. The statement on lines 125-126 should be revised to more correctly report the studies included in their systematic review.

**Thank you, lines 133-135 have been updated to reflect this. "Randomized controlled trials (RCTs), comparative observational cohort studies and case-control studies were included to examine associations of telehealth interventions for obstetric and gynecological care with clinical health and behavioral outcomes." Also, lines 372-375 "By focusing on the RCT evidence in our synthesis, and limiting the review to study designs that compared women exposed and unexposed to telehealth**



**interventions, our synthesis provides a thorough and comprehensive exploration of the effects of telehealth across several domains of women's reproductive health care."**

4) Throughout the paper as the individual study categories are reported (eg line 131, 161, 188, 231, 256 etc) the authors state that 2 reviewers evaluated the respective papers. It would be useful to include the author initials for each of these review groups in the revised paper.

**The author's initials were added to the introduction of each of the results sections (line 171, 200, 245, 271).**

5) The paper would benefit from a Figure depicting the entire result of the literature review with visual depiction of the exclusions/ inclusions and resultant articles in each category (Family planning, low risk OB, high risk OB, gynecologic) or study type ultimately included and evaluated.

**I've created this as the new Figure 1 and have uploaded it as the supplemental digital content.**

**Reviewer #2:** Thank you for the opportunity to review ONG-19-1212, Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review. The topic is too broad, leading to the conclusion of "need for further research" as uninformed by this review for gaps in knowledge and implications for future studies. Section topics with "one study" descriptions yield annotated bibliographies, rather than critique and synthesis.

**We have extensively revised the discussion to strengthen the synthesis and avoid restating results. We have eliminated sub-topics that only had one reference and health outcomes not central to our question. The discussion now focuses on key topics, central to our systematic review organization. The topics are organized to highlight their relevance to general ob/gyn practitioners and in some cases to specialists, like urogynecologists.**

Although the team followed PRISMA, there are issues with the methods utilized. The initial question is not adequately targeted. The operational definition of "telehealth" is expansive. "For this review, telehealth is defined as the technology-enhanced health care framework that includes novel services such as virtual visits, remote patient monitoring, and mobile apps or text messaging." Conceptually, how is "communication" operationalized? Are the tele-supported activities one-way or two-way? "Visits" implies interaction, whereas the other modes can be one-way unless there is a response to the data input.

**The definition of telehealth used for this review was intended to focus on newer technologies, excluding telephone calls and general internet-based resources that have long been routinely used in health care delivery. Thus, the definition was intended to be general enough to include a broad range of technologies that are in developmental stages for health care interventions, such as virtual visits, remote monitoring, mobile apps, text messaging – but keeping the focus on emerging technologies. Telehealth activities can involve one-way or two-way communication exchanges. We have added language about an important distinction: asynchronous and synchronous; both were included in our study, but they do have different implications.**

Types of tele-methods likely developed quickly over time, making the year of publication critical to the search terms. Years and keywords specific to a narrowed topic would be expected to lead to more meaningful results. The studies are inadequately appraised, under the assumption that at least two comparison groups in a study guarantees rigor. Writing varies between use of "telehealth" and "telemedicine," inconsistent with the title and diminishing rigor.

**Thank you. We have corrected to telehealth throughout document. The timing of publication is important to such a rapidly evolving field, and we expect the next such review will include more interventions such as wearable devices and remote monitoring rather than text messaging, perhaps. We did conduct a bridge search to include any new studies up to September 26, 2018 and we do consider this systematic review relevant at this time, especially when so much of the telehealth literature is a mixture of pilot studies or feasibility studies. Additionally, we used design-specific critical appraisal instruments that are standard for evaluating risk of bias in comparative randomized and observational studies.**

**Reviewer #3:**

**Precis: A systematic review of the literature examining the benefits of Telehealth Interventions on obstetric and gynecologic outcomes.**

**Article type: A systematic review**

**Overall:**

**A review of literature describing the effect of telehealth on ob/gyn outcomes. There appears to be a positive impact on smoking cessation, breast-feeding, and less progression of gestational HTN to preeclampsia as well as decrease in number of high-risk Ob outpatient visits with the use of telehealth interventions. Continuation of OCP and injectable contraception as well as increase in the use of OCP was also positively influenced by telehealth interventions. There is limited use of telemedicine in urinary incontinence, STI notification, menopausal respiratory symptoms, and no difference in access to abortion services.**

**The authors have an extensive introduction. However, a shorter more concise intro detailing how and why telemedicine could benefit women's health as well as detailing potential risks-delineate these risks. The goal of this paper is to review the literature for robust evidence for telemedicine interventions. The different areas were separated which helped me to follow each outcome in the paper. However, I found that in the discussion section many points in the results section were repeated, which is not needed. Instead, a detailed discussion and critical thought process of the impact of these results as well as strengths and limitations of the studies findings is more important. Overall, the writing is a little lengthy and could possibly be made more straightforward and concise.**

**We have extensively revised the discussion to strengthen the synthesis and avoid restating results. We have eliminated sub-topics that only had one reference and health outcomes not central to our question. The discussion now focuses on key topics, central to our systematic review organization. The topics are organized to highlight their relevance to general ob/gyn practitioners and in some cases to specialists, like urogynecologists.**

**I didn't see where IRB approval is not discussed but not likely needed. IRB was not needed**

There are no apparent conflicts of interest. **Correct**

Short explanation of deviation from PRISMA up front?

**Can be found on line 97-98 and 350-351. "The PRISMA method was followed closely, with noted deviations including the absence of a priori inclusion and exclusion criteria and publication of the review protocol publication We explored the availability of evidence across a range of gynecological and obstetric areas to develop a framework for structuring the review."**

**ABSTRACT:**

To systematically review the emerging field of telehealth interventions to improve obstetric and gynecologic health outcomes.

Maybe instead: To systematically review the use of telehealth interventions to improve... ..

Overall-concise and to the point

**Revised as suggested.**

**INTRODUCTION:**

Introduction-please shorten and stay on target with the goal of the study. **We felt this level of detail was important to provide the background for our systematic review.**

53-58 seems to take us away from the point of the study-not sure what this means. Could stay on point regarding telehealth and its uses.

**Main Paper:**

Could be revised to a shorter more concise version

**Revisions throughout were made to be more concise.**

**CONCLUSIONS**

Good and concise.

**TABLES**

Submitted-good but sometimes difficult to understand and should be checked to ensure that it follows guidelines. **Tables have been checked against the journal requirements for tables and figures.**

**REFERENCES**

very extensive reference list

**STATISTICAL EDITOR COMMENTS:**

The Statistical Editor makes the following points that need to be addressed:

Since this was a systematic review, not a meta-analysis, there was not a lot of stats to review. This area of medicine is of interest and will be no doubt applied more and more. However, I think that the sections re: limitations and suggestions for future research could be strengthened.

Many of the studies were RCTs, but self-reporting of results may have introduced bias, as evidenced by the difference between self-reported data vs corroboration with biochemical validation in the smoking cessation studies (lines 165-169).

**Edits have been added to limitations section lines 316-365. "The review was designed to summarize evidence from RCTs as well as comparative observational and case-control studies. Evidence from observational studies was more cautiously interpreted owing to design specific threats to internal validity, as were included studies used self-reporting mechanisms that may have introduced bias."**

Another issue is how representative the participants were vs all women with the same characteristic. That is, how were the women recruited, what proportion should complete the study in order to have valid, generalizable conclusions, and what length of follow-up should be expected to ensure that the results are not a transient Hawthorne effect?

**Edit have been added to limitations section lines 364-368. "Within the parameters of the evidence synthesis, research was limited to English-only studies conducted in very high UN Human Development Index countries (5). As such, this review is less generalizable to developing nations. Additionally, the women consented to participate in randomized trials or included in small, focused investigations within the studies had variable patient characteristics and thus the results found within may have limited generalizability to this review may not be generalizable to the general population. Given the variable study follow-up times, we also could not determine whether some effects might be transient or the result of Hawthorne effects."**

Although there was heterogeneity in responses, some areas had disappointing results, such as wgt reduction, glycemic control in DM. While other areas, such as HTN control. Were there general conclusions that could be made regarding studies in those areas that could aid in design of future studies to enhance the impact of telemedicine?

**Edits added to discussion section 350-353, "Future studies are needed to explore these themes with attention to pairing the telehealth modality and the health outcome most likely to benefit from a targeted intervention, some of which are identified here. Additional controlled trials are needed for the more emerging aspects of telehealth, such as remote monitoring and wearable devices, which currently have been studied primarily with pilot or feasibility trials. Also, this review did not examine patient satisfaction, provider ratings, or cost analysis which can also inform future directions of telehealth."**

A more general suggestion, would be, when possible, to avoid reporting proportions, then odds ratios. If possible, summary results all in one format (proportions in treated and control groups) might be less confusing for the reader and also would allow for interpretation of changes on an absolute scale, rather than as ratios of odds. **Proportions were included when available, as well as odds ratios or relative risks. P-values were removed unless that was the only appropriate test of significance.**

#### EDITOR COMMENTS:

1. Thank you for your submission to Obstetrics & Gynecology. In addition to the comments from the reviewers above, you are being sent a notated PDF that contains the Editor's specific comments. Please review and consider the comments in this file prior to submitting your revised manuscript. These comments should be included in your point-by-point response cover letter.

\*\*\*The notated PDF is uploaded to this submission's record in Editorial Manager. If you cannot locate the file, contact Randi Zung and she will send it by email - rzung@greenjournal.org.\*\*\*

- The précis is a single sentence of no more than 25 words, written in the present tense and stating the conclusion(s) of the report (ie, the bottom line). The précis should be similar to the abstracts conclusion. Do not use commercial names, abbreviations, or acronyms in the précis. Précis should be the "hook" for people who scan the Table of Contents to see what to read. It shouldn't include statements like "in this study" or "we found". Just state what you found. **Edits have been added for your consideration to lines 24-25.**

- We prefer to avoid providing p values only unless that is the only appropriate test of significance. Where possible in the abstract AND the text, please provide an effect size (such as an OR or RR) and 95% CIs. **OR and RRs were not available for all studies—I included effect sizes and removed p-values when possible. I kept the proportions.**

- For clarity, it was intended that the telehealth interventions here would replace a regular ambulatory appointment so this is a good thing, correct? The way this reads, one could assume that the interventions were associated with women avoiding care. **Correct, edits have been made to lines 41-43. Updated to: "Telehealth interventions decreased the need for high-risk obstetric monitoring office visits while maintaining maternal and fetal outcomes."**

- can you give actual percentages as you did above (lines 41).  
**Yes, percentages have been added**

- Really nice opening paragraph that sets up the reason for your study.  
**Thank you**

- is it possible to have the data instead for 2015 since you quote the % in 2015?  
**Faraq article was a systematic look at apps that are useful to OBGYNs. The 2015 article used a representative sample to estimate the number of mhealth apps in women's health in general. It's better to cite the 2014 for the number of apps. I did rearrange chronologically so that it flows better**

- can you do this retrospectively? The value is that it may prevent someone else interested in the topic from essentially repeating your work AND it helps others interested in the topic to find your work.  
**Unfortunately, it wasn't possible to retrospectively register the topic via PROSPERO.**

- define PICOS.  
**PICOTS defined above, included the T on line 103**

- please show the data  
**Data has been included on line 177-178. "All of these trials demonstrated a statistically significant reduction in self-reported smoking at 30 days 15.3%, (95% CI 12.08-18.58) in the control versus 9.6%**

**(95% CI 6.95-12.32) in the treatment group, and up to 3 months in one trial (35.2% of the intervention group and 22.7% of the control group) (8, 9, 10, 11) (Table 2)."**

- For each of your groups of topics (low risk, high risk, family planning, gyn) could you add to the first paragraph some clarity about the final number of included papers? For instance, this one may read "Two reviewers independently reviewed 422 unique articles [is this abstracts and titles only?] and 67 full-text articles in family planning. Twelve papers met the inclusion criteria: seven randomized trials,....."

**Updated, yes all of the articles reviewed at the initial stage were title and abstracts, that detail has been included to each of the results sections (line 171, 200, 245, 271).**

- Much of your discussion (313-341) is a restatement of your results. Can you instead focus on some common themes you found? Types of interventions that are more effective? Types of problems that are more conducive to improvement w/ telehealth interventions [medication? lifestyle v medical care for instance? can you put the information into some context about persistent gaps in knowledge for future research to build on?

**Yes, this information has been updated in the discussion. The discussion has been edited substantially. As suggested, we included the common themes that emerged from the literature and our analysis as well as effective interventions, and gaps in knowledge for future reach to build on.**

- Please explicate why this is noteworthy? Large number of published articles or relatively low percentage of those published articles that met your inclusion criteria?

**We reviewed a large number of published articles (3,926) and of those only 51 met our inclusion criteria. Thus, both of these points are accurate. These points have been underscored in the manuscript.**

2. Although many of your sources were RCTs, some were not. As such, please be very careful with the use of causal language in your precis, abstract and manuscript unless the basis for the point you are making was based entirely on an RCT.

**We reviewed the document for casual language both regarding RCTs, observational studies as well as case-control. Our results were mainly a description of the findings of the study. I did not locate any language that would infer a causal effect. Instead we use the word 'associated' to describe our results.**

3. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:

A. OPT-IN: Yes, please publish my point-by-point response letter.

B. OPT-OUT: No, please do not publish my point-by-point response letter.

**OPT-IN**

4. As of December 17, 2018, Obstetrics & Gynecology has implemented an "electronic Copyright Transfer Agreement" (eCTA) and will no longer be collecting author agreement forms. When you are ready to revise your manuscript, you will be prompted in Editorial Manager (EM) to click on "Revise Submission." Doing so will launch the resubmission process, and you will be walked through the various questions that comprise the eCTA. Each of your coauthors will receive an email from the system requesting that they review and electronically sign the eCTA.

Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page. **We will check, thank you.**

5. As of January 1, 2020, authors of systematic reviews must prospectively register their study in PROSPERO (<https://www.crd.york.ac.uk/PROSPERO/>), an international database of prospectively registered systematic reviews. Please refer to the PROSPERO registration number in your submitted cover letter and include it at the end of the abstract.

**When we began this review in September 2017 registering with PROSPERO was not required. We have noted and mentioned that not registering the protocol was a limitation of our systematic review. We tried to retroactively register the protocol however the response we received was the following: "Reviews that have completed data extraction are not eligible for inclusion in PROSPERO. The aim of the register is to capture information at the design stage."**

6. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric and gynecology data definitions at <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize>. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter. **Noted, our systematic review is consistent with these definitions.**

7. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Review articles should not exceed 25 typed, double-spaced pages (6,250 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references. **Understood, our word count and page limit was reviewed previous to resubmission.**

8. Specific rules govern the use of acknowledgments in the journal. Please note the following guidelines:

\* All financial support of the study must be acknowledged. **Noted**

\* Any and all manuscript preparation assistance, including but not limited to topic development, data collection, analysis, writing, or editorial assistance, must be disclosed in the acknowledgments. Such

acknowledgments must identify the entities that provided and paid for this assistance, whether directly or indirectly. **Noted**

\* All persons who contributed to the work reported in the manuscript, but not sufficiently to be authors, must be acknowledged. Written permission must be obtained from all individuals named in the acknowledgments, as readers may infer their endorsement of the data and conclusions. Please note that your response in the journal's electronic author form verifies that permission has been obtained from all named persons. **Noted**

\* If all or part of the paper was presented at the Annual Clinical and Scientific Meeting of the American College of Obstetricians and Gynecologists or at any other organizational meeting, that presentation should be noted (include the exact dates and location of the meeting). **Noted**

9. Provide a short title of no more than 45 characters, including spaces, for use as a running foot.  
**Telehealth Interventions to Improve Obstetric and Gynecologic Health Outcomes: A Systematic Review**

10. The most common deficiency in revised manuscripts involves the abstract. Be sure there are no inconsistencies between the Abstract and the manuscript, and that the Abstract has a clear conclusion statement based on the results found in the paper. Make sure that the abstract does not contain information that does not appear in the body text. If you submit a revision, please check the abstract carefully. **Confirmed**

In addition, the abstract length should follow journal guidelines. The word limits for different article types are as follows: Reviews, 300 words. Please provide a word count. **Confirmed**

11. Only standard abbreviations and acronyms are allowed. A selected list is available online at <http://edmgr.ovid.com/ong/accounts/abbreviations.pdf>. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript. **Confirmed**

12. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement. **Understood.**

13. In your Abstract, manuscript Results sections, and tables, the preferred citation should be in terms of an effect size, such as odds ratio or relative risk or the mean difference of a variable between two groups, expressed with appropriate confidence intervals. When such syntax is used, the P value has only secondary importance and often can be omitted or noted as footnotes in a Table format. Putting the results in the form of an effect size makes the result of the statistical test more clinically relevant and gives better context than citing P values alone. **When possible, we have updated the statistics within the manuscript to include the odds ratio or relative risk and removed the p-value. At times, the original studies only included p values without accompanying OR or RR. For those instances, the p-value was left.**



If appropriate, please include number needed to treat for benefits (NNTb) or harm (NNTh). When comparing two procedures, please express the outcome of the comparison in U.S. dollar amounts. **This comment is not applicable to our review.**

Please standardize the presentation of your data throughout the manuscript submission. For P values, do not exceed three decimal places (for example, "P = .001"). For percentages, do not exceed one decimal place (for example, 11.1%). **This has been updated and made consistent throughout the manuscript.**

14. Please review the journal's Table Checklist to make sure that your tables conform to journal style. The Table Checklist is available online here: [http://edmgr.ovid.com/ong/accounts/table\\_checklist.pdf](http://edmgr.ovid.com/ong/accounts/table_checklist.pdf). **We have reviewed the checklist and made any edits accordingly.**

#### 15. Figures

Figure 1: Note that these four flowcharts will not fit in print as a single figure. Please break into 4 individual figures and renumber. **Thank you, these have been separated into 4 separate figures.**

Figure 2: As for Figure 1, these four images will not fit as a single figure. Please break into 4 individual figures and renumber. **Thank you, these have been separated into 4 different figures.**

Additionally, if you want to keep all of the images together, you may want to consider moving some to supplemental digital content as appendices. **Thank you for this note. Most figures, tables and appendices were submitted as digital content.**

16. Authors whose manuscripts have been accepted for publication have the option to pay an article processing charge and publish open access. With this choice, articles are made freely available online immediately upon publication. An information sheet is available at <http://links.lww.com/LWW-ES/A48>. The cost for publishing an article as open access can be found at <http://edmgr.ovid.com/acd/accounts/ifauth.htm>.

Please note that if your article is accepted, you will receive an email from the editorial office asking you to choose a publication route (traditional or open access). Please keep an eye out for that future email and be sure to respond to it promptly. **We would like to publish this document as open access.**

17. If you choose to revise your manuscript, please submit your revision through Editorial Manager at <http://ong.editorialmanager.com>. Your manuscript should be uploaded in a word processing format such as Microsoft Word. Your revision's cover letter should include the following:

- \* A confirmation that you have read the Instructions for Authors (<http://edmgr.ovid.com/ong/accounts/authors.pdf>), and
- \* A point-by-point response to each of the received comments in this letter.