NOTICE: This document contains comments from the reviewers and editors generated during peer review of the initial manuscript submission and sent to the author via email.

Questions about these materials may be directed to the Obstetrics & Gynecology editorial office: obgyn@greenjournal.org.
RE: Manuscript Number ONG-21-1545

Predictors of two trajectories of dyspareunia from pregnancy to 24 months postpartum

Dear Dr. Rosen:

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).

Please be sure to address the Editor comments (see "EDITOR COMMENTS" below) in your point-by-point response.

Your paper will be maintained in active status for 14 days from the date of this letter. If we have not heard from you by Sep 10, 2021, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1:

In this study, the authors aims to describe distinct trajectories of dyspareunia in the late pregnancy and postpartum time frame. They find two distinct trajectories that are associated with select psychosocial characteristics. Other well-reported associations were not noted. The findings are supported from a primary analysis of a prospective cohort study. The authors have put together an excellent primary study. The findings are well-detailed and easily explained, despite complex methodology. This is an underreported topic which deserves attention as well. The authors should be applauded for their effort in this manuscript. Minor comments are detailed below.

Introduction:
- Lines 47-53 (Discussing specific risk factors) should be removed from the introduction to keep it brief and to the point. This is more apt to a discussion.

Methods:
- Lines 65-67 including the flow diagram belong in the results only
- Line 76: Was dyspareunia assessed in the survey or some other way (I see this was introduced later, but was confusing in the current place)
- Line 74-80: A summary of all survey components would be relatively easier to follow than as the sentences are currently structured (including the surveys in appendices may be helpful)
- Line 88: What social and psychologic variables were assessed?
- As each item in the survey is discussed in further sections, a general introduction to everything included in the survey and the time points would be helpful before each measure is discussed in detail. The first paragraph left me wanting more information that was then apparent in much later sections
- Were all surveys and information gathered online? Or were there any medical visit information obtained i.e. postpartum visit, evaluation of healing perineal laceration/episiotomy, etc.

Results:
Characteristics and diagram of the cohort is well-described
Results are salient and not repetitive but clear
Figure 2 can be omitted as it is adequately described in the text
- The authors describe a 3-group model; albeit not as robust as the two group (moderate and minimal). It may be helpful to the reader to describe what was in the 3-group model (high/moderate/minimal?)
Discussion:
- The discussion is well-organized with findings not overstated
- Would be helpful for the authors to report what to do with these findings and what are next steps.
- Are there targeted interventions?

Reviewer #2:

General Comments

This is a prospective cohort study of dyspareunia in primiparous women. Subjects were recruited between 18-22 weeks gestation and questionnaires were completed at 20-24 weeks gestation, 32-36 weeks gestation, 3-, 6-, 12-2 and 24-months postpartum. The authors used Latent Class Growth Analysis to identify distinct trajectories of dyspareunia, and found that there were two distinct trajectories. One trajectory was in subjects with minimal dyspareunia (79% of subjects) and the other with moderate dyspareunia (21% of subjects). In multivariate analysis, the only variable that was predictive of membership in the moderate dyspareunia group was pain catastrophizing at 3 months postpartum.

Major Concerns
1. Breastfeeding data was only obtained at the 3 month postpartum time point, but has been associated with dyspareunia in some studies. Can the authors please address why breastfeeding data was only obtained at that one time point?
2. A question on non-pregnancy related chronic pain conditions was included in the survey, and there was single self-report item that was dichotomized as yes/no and included fibromyalgia, migraine headaches and dyspareunia. It seems likely that of these conditions, dyspareunia may be much more likely to be a risk factor for persistent postpartum dyspareunia than the other medical conditions that are listed. Can the authors please comment on their decision to not consider pre-pregnancy dyspareunia as a separate variable?
3. While the authors included information regarding “tearing” in their analyses, they make no note of the severity of the tears, whether they were sutured or not, etc. This information would be helpful as severe perineal lacerations have been associated with dyspareunia postpartum. If these data are not available, I would suggest mentioning that this is a weakness in the present study in the discussion.
4. The authors collected information on when women returned to sexual activity, but did not report on how many women returned and when. Please include this information in the manuscript.
5. The statistical analyses are difficult for the lay person to follow. If at all possible, simplifying the language describing the analyses and making it understandable by the lay person would be helpful.
6. While pain catastrophizing was the only predictor that was significant in the multivariate analysis for predicting more severe pain, the odds ratios are small. It seems to this reviewer that the paper failed to identify robust predictors, and rather than concluding that biosocial measurement should be taken of individuals, perhaps further research should be undertaken to identify more robust predictors. I would suggest reframing the discussion and conclusions of the study.

Minor Concerns
1. Subjects that delivered outside of the Health Center submitted information on their births either by giving access to their medical record or by completing the survey. Personal recollection of birth experience is a potential source of bias as recall may not be accurate or complete. What percent of subjects had their data obtained in this way?
2. Most readers are likely to be more familiar with the spelling 'cesarean' or 'caesarean' than they will be with 'cesarian' seen in line 101.
3. Line 10: Since this is a prospective study, usually the number of patients included goes into the results. I would delete the line "This study was a planned primary analysis of 582 first-time mothers."
4. Line 42: "Prior studies examining predictors of dyspareunia in pregnancy and postpartum have..." there are quite a few papers that look at this prospectively, however, it may be combined with sexual function overall
5. One of the biggest predictors of sexual activity is the presence of a partner. How many of these women had a consistent partner over the timeframe of the study?
6. Dyspareunia refers to coital pain - this is why mention of how many women were sexually active is important.
7. Did the authors investigate whether or not women avoided intercourse because of pain - when surveyed they may not have had any pain, but they also may not be attempting intercourse because of the pain.
Reviewer #3:

This is an important study with a long follow up, explaining the natural course of peripartum dyspareunia in nulliparous women. The fact that biomedical factors, which are largely non- or less-modifiable, did not predict dyspareunia severity may be reassuring to first-time mothers and physicians. However, I have some observations about general analysis and request of data addition that I want to be considered before going further with consideration.

- I do not like that you want to identify two distinct classes of trajectories of dyspareunia. The trajectories are completely parallel in the two groups during time so in my opinion it is a continuous spectrum of worsening dyspareunia so I don’t like trying to identify two different mutualistic categories (moderate and minimal) of no clinical significance and reproducibility. Dyspareunia is not a dichotomous but a continuous variable/clincial problem. I prefer that you correlate all the various factors in monovariate and multivariate analysis with the variation deltas of dyspareunia values at different follow up times to highlight what happens in the group in general during time.

- Can you correct your analysis also for additional fundamental factors such as age of women at delivery, age of partners, BMI of women, fetal weight, neonatal wellbeing and the presence of partum hemorrhage/related anemia in women? Do you have data also about number of intercourses/week at each follow up evaluation? Can you please show them, they would be very explanatory.

- Do you have data about use of contraception during postpartum? POP? IUD? Implants? And how can contraception use affect dyspareunia levels? These could be categories to be assessed separately (contraception yes vs. no, hormonal vs. non hormonal, LARC vs. SARC? etc.).

- Do you have data about the presence of organic causes for dyspareunia in these women (endometriosis, adenomyosis, fibroids, etc.?) before and after pregnancy?

STATISTICS EDITOR COMMENTS:

Lines 22-27: Each of the statistically significant associations had ORs which were relatively modest. So was the model useful clinically as well as showing statistically significant associations with dyspareunia class? Even the pain catastrophizing measure at 3 months (aOR = 1.09, with CI = 1.04-1.15) seems more impressive statistically than in a clinically useful way.

Table 1: Do age and relationship month have normal distributions? If not, then should be summarized as median(range or IQR), rather than as mean±SD.

Table 2: Do the various pain and other scores have normal distributions? If they are ordinal measures, then likely median(range or IQR) or description by categories would be more informative.

Table 3: Suggest placing this Table in supplemental material. Also, should explain for the readers unfamiliar with the tests utilized the meaning of the various stats tests used. That is, some readers might interpret the columns of p-values as showing that the 3 class model is improved vs the 2 class model, yet the 2 class model was chosen.

Table 4: In terms of predictors, there are 20 candidates. It appears that the threshold for inclusion did not account for multiple hypothesis testing. A stricter threshold likely would have made none of the predictors statistically significant, except for the one retained in the multivariate model.

Fig 1: Need to describe the Table 1 characteristics of all women who were eligible, but who were uninterested, withdrew or who were otherwise excluded and contrast with the analyzed cohort. This would address any issue re: selection bias.

EDITOR COMMENTS:

1. Thank you for submitting your work to Obstetrics and Gynecology. If you opt to submit a revision for consideration, it will be very important for you to respond adequately to reviewer #2, comment #5 regarding the statistical analyses. Please do what you can to make the methodology understandable to a practicing obstetrician-gynecologist.

2. Describe the overall rates of dyspareunia in the cohort, and not simply the rates of mild and moderate dyspareunia among those who had dyspareunia. This should also be included in the abstract. The descriptive nature of this work (rates of dyspareunia overall in a cohort of nulliparous patients, trajectories of dyspareunia) is the most clinically relevant information and our journal targets clinical readers.
EDITORIAL OFFICE COMMENTS:

1. The Editors of Obstetrics & Gynecology have increased 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.

2. When you submit your revised manuscript, please make the following edits to ensure your submission contains the required information that was previously omitted for the initial double-blind peer review:
   * Include your title page information in the main manuscript file. The title page should appear as the first page of the document. Add any previously omitted Acknowledgements (ie, meeting presentations, preprint DOIs, assistance from non-byline authors).
   * Funding information (ie, grant numbers or industry support statements) should be disclosed on the title page and in the body text. For industry-sponsored studies, the Role of the Funding Source section should be included in the body text of the manuscript.
   * Include clinical trial registration numbers, PROSPERO registration numbers, or URLs at the end of the abstract (if applicable).
   * Name the IRB or Ethics Committee institution in the Methods section (if applicable).
   * Add any information about the specific location of the study (ie, city, state, or country), if necessary for context.

3. Obstetrics & Gynecology uses an "electronic Copyright Transfer Agreement" (eCTA), which must be completed by all authors. When you uploaded your manuscript, each co-author received an email with the subject, "Please verify your authorship for a submission to Obstetrics & Gynecology." Please check with your co-authors to confirm that they received and completed this form, and that the disclosures listed in their eCTA are included on the manuscript's title page.

4. 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 data definitions at https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-obstetrics-data-definitions and the gynecology data definitions at https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-gynecology-data-definitions. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

5. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Original Research reports should not exceed 5,500 words. Stated word limits include the title page, précis, abstract, text, tables, boxes, and figure legends, but exclude references.

6. 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).

* If your manuscript was uploaded to a preprint server prior to submitting your manuscript to Obstetrics & Gynecology, add the following statement to your title page: "Before submission to Obstetrics & Gynecology, this article was posted to a preprint server at: [URL]."


7. Provide a short title of no more than 45 characters (40 characters for case reports), including spaces, for use as a running foot.

8. Provide a précis on the second page, for use in the Table of Contents. The précis is a single sentence of no more than 25 words that states the conclusion(s) of the report (i.e., the bottom line). The précis should be similar to the abstract’s conclusion. Do not use commercial names, abbreviations, or acronyms in the précis. Please avoid phrases like "This paper presents" or "This case presents."

9. 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 limit for Original Research articles is 300 words. Please provide a word count.

10. 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.

11. 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.

12. ACOG avoids using "provider." Please replace "provider" throughout your paper with either a specific term that defines the group to which you are referring (for example, "physicians," "nurses," etc.), or use "health care professional" if a specific term is not applicable.

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.

15. Please review examples of our current reference style at http://ong.editorialmanager.com (click on the Home button in the Menu bar and then "Reference Formatting Instructions" document under "Files and Resources). Include the digital object identifier (DOI) with any journal article references and an accessed date with website references. Unpublished data, in-press items, personal communications, letters to the editor, theses, package inserts, submissions, meeting presentations, and abstracts may be included in the text but not in the reference list.

In addition, the American College of Obstetricians and Gynecologists’ (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the references you are citing are still current and available. Check the Clinical Guidance page at https://www.acog.org/clinical (click on "Clinical Guidance" at the top). If the reference is still available on the site and isn't listed as "Withdrawn," it's still a current document.

If the reference you are citing has been updated and replaced by a newer version, please ensure that the new version supports whatever statement you are making in your manuscript and then update your reference list accordingly (exceptions could include manuscripts that address items of historical interest). If the reference you are citing has been withdrawn with no clear replacement, please contact the editorial office for assistance (obgyn@greenjournal.org). In most cases, if an ACOG document has been withdrawn, it should not be referenced in your manuscript.

16. Figures 1-2: Please upload as figure files on Editorial Manager.

When you submit your revision, art saved in a digital format should accompany it. If your figure was created in Microsoft Word, Microsoft Excel, or Microsoft PowerPoint formats, please submit your original source file. Image files should not be copied and pasted into Microsoft Word or Microsoft PowerPoint.

When you submit your revision, art saved in a digital format should accompany it. Please upload each figure as a separate file to Editorial Manager (do not embed the figure in your manuscript file).

If the figures were created using a statistical program (eg, STATA, SPSS, SAS), please submit PDF or EPS files generated directly from the statistical program.

Figures should be saved as high-resolution TIFF files. The minimum requirements for resolution are 300 dpi for color or black and white photographs, and 600 dpi for images containing a photograph with text labeling or thin lines.

Art that is low resolution, digitized, adapted from slides, or downloaded from the Internet may not reproduce.

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If you choose to revise your manuscript, please submit your revision through Editorial Manager at
http://ong.editorialmanager.com. Your manuscript should be uploaded as a Microsoft Word document. 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. Do not omit your responses to the Editorial Office or Editors' comments.

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 Sep 10, 2021, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,
Torri D. Metz, MD
Associate Editor, Obstetrics

2020 IMPACT FACTOR: 7.661
2020 IMPACT FACTOR RANKING: 3rd out of 83 ob/gyn journals

______________________________
In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL: https://www.editorialmanager.com/ong/login.asp?a=r). Please contact the publication office if you have any questions.
RE: Manuscript Number ONG-21-1545

Dear Dr. Metz,

Thank you for the opportunity to revise our submission “Predictors of two trajectories of dyspareunia from pregnancy to 24 months postpartum”. We appreciate all of the comments provided and have attended to them thoughtfully. We believe our manuscript has been improved as a result.

To facilitate review, we include below each of the comments by reviewers in *italics*, followed by our response. All revisions are indicated in the revised manuscript with track changes.

Thank you for your continued consideration.

Sincerely,

Natalie O. Rosen, Ph.D.
(corresponding author)
EDITOR COMMENTS

1. Thank you for submitting your work to Obstetrics and Gynecology. If you opt to submit a revision for consideration, it will be very important for you to respond adequately to reviewer #2, comment #5 regarding the statistical analyses. Please do what you can to make the methodology understandable to a practicing obstetrician-gynecologist.

Response: We appreciate the importance of conveying the statistical analyses in an easily understandable manner. We have made revisions that we hope will improve the clarity for the journal audience. Our co-authors include two obstetrician-gynecologists as well as an anesthesiologist. They have all reviewed the manuscript carefully and indicated that they could follow the analyses description and results. Please refer to our response to Reviewer 2, comment #5 for further details.

2. Describe the overall rates of dyspareunia in the cohort, and not simply the rates of mild and moderate dyspareunia among those who had dyspareunia. This should also be included in the abstract. The descriptive nature of this work (rates of dyspareunia overall in a cohort of nulliparous patients, trajectories of dyspareunia) is the most clinically relevant information and our journal targets clinical readers.

Response: Thank you for this suggestion, which we think also addresses a key concern of Reviewer 3. We agree that this information coupled with the trajectories is the most clinically relevant. We weren’t entirely sure whether the Editor was requesting information about the average rate of change across the whole sample, or the overall prevalence rates across the time-period. The information about the average rate of change was included in our original submission in the first sentence of the results of the trajectories analysis:

“Examination of a single trajectory capturing the average change across the full sample revealed that the dyspareunia intercept (i.e., estimated initial status at baseline, 20-24 weeks in pregnancy) was 1.80 (SE = 0.09, p < .001), with an average decline in pain from baseline to 24-months postpartum (-0.427, SE = 0.29, p < .001).” (page 11).

Regarding the overall prevalence rates of clinically significant dyspareunia (> 4 on the NRS) for the entire sample, this ranged from 31.4% at 3-months postpartum to 11.9% at 24-months postpartum. We now tell the reader on page 11 of the manuscript that this information is presented in Table 2 (page 19)

We also added this description to the Abstract: (page 3)

“Overall, the prevalence of clinically significant dyspareunia ranged from 31.4% at 3-months postpartum to 11.9% at 24-months.”

In addition, as requested by the Statistical Reviewer, the median and range of dyspareunia scores at each time-point are now displayed in Table 2 (page 19). We have made a revision on page 11 to direct the reader to this information in the table:
“The median ratings of dyspareunia for the overall sample across time-points are reported in Table 2.”

REVIEWER COMMENTS

Reviewer #1:

In this study, the authors aim to describe distinct trajectories of dyspareunia in the late pregnancy and postpartum time frame. They find two distinct trajectories that are associated with select psychosocial characteristics. Other well-reported associations were not noted. The findings are supported from a primary analysis of a prospective cohort study. The authors have put together an excellent primary study. The findings are well-detailed and easily explained, despite complex methodology. This is an underreported topic which deserves attention as well. The authors should be applauded for their effort in this manuscript. Minor comments are detailed below.

Introduction:
1. Lines 47-53 (Discussing specific risk factors) should be removed from the introduction to keep it brief and to the point. This is more apt to a discussion.

Response: We have removed the sentences describing prior evidence related to the specific risk factors and made minor edits to the Discussion to cover this information if it was not already included. We did want to still mention the specific risk factors under investigation in the current study so they would not come as a “surprise” in the Methods. The revised sentence in the Introduction now reads (new additions underlined):

“Prior studies have also emphasized biomedical predictors and neglected psychosocial factors, despite evidence that the latter—including depressive symptoms, fatigue, pain catastrophizing and sexual goals (i.e., motives for having sex)—are more consequential for predicting dyspareunia and postpartum sexual function.” (page 5)

Methods:
2. Lines 65-67 including the flow diagram belong in the results only

Response: We removed these lines in the Methods referring to the final sample and the flow diagram as this information is repeated in the Results.

3. Line 76: Was dyspareunia assessed in the survey or some other way (I see this was introduced later, but was confusing in the current place)

Response: Dyspareunia was assessed via the surveys. We clarified as follows (new additions underlined):

“All study variables with the exception of labor and delivery characteristics were assessed by self-report surveys completed online via an e-mailed link using Qualtrics Research Suite survey
software. The survey measures can be found in the supplemental materials on the Open Science Framework page.” (page 6).

4. Line 74-80: A summary of all survey components would be relatively easier to follow than as the sentences are currently structured (including the surveys in appendices may be helpful)

Response: We agree with the reviewer. We have restructured this section to integrate the description of when each variable was assessed (i.e., what time-point) together with the description of the measurement of each variable. These edits were made on pages 5-6. We have also included the surveys on the Open Science Framework page together with the de-identified data and syntax, as described on page 6:
https://osf.io/m8zyd/?view_only=8bf96eb8270f4e00a151ea8bba5b4747

5. Line 88: What social and psychologic variables were assessed?

Response: We believe our restructuring makes this information clearer. The description of the psychological and social measures can be found on page 8.

6. As each item in the survey is discussed in further sections, a general introduction to everything included in the survey and the time points would be helpful before each measure is discussed in detail. The first paragraph left me wanting more information that was then apparent in much later sections

Response: We hope that the revisions described above have adequately addressed this issue.

7. Were all surveys and information gathered online? Or were there any medical visit information obtained i.e. postpartum visit, evaluation of healing perineal laceration/episiotomy, etc.

Response: All study information was gathered by self-report surveys online, with the exception of labor and delivery characteristics, which were collected by chart review. We believe that the revisions described above made these details clear.

Results:
8. Characteristics and diagram of the cohort is well-described
Results are salient and not repetitive but clear

Response: Thank you.

9. Figure 2 can be omitted as it is adequately described in the text

Response: We prefer to retain Figure 2 as we think many readers value the visual depiction. We are willing to reconsider if the Editor prefers that this figure be removed.
10: The authors describe a 3-group model; albeit not as robust as the two group (moderate and minimal). It may be helpful to the reader to describe what was in the 3-group model (high/moderate/minimal?)

Response: We agree that readers may be interested in the 3-class model. As described in the paper, we considered a number of parameters when evaluating which of the models best fit the data, in particular the entropy value. Higher entropy captures more distinct class separation or in other words more stable classes, which is why the 2-class model was ultimately selected as the better fitting model. To avoid confusing the reader by including descriptions of both the 2- and 3-class models in text, we have opted to include the description of the 3-class model in the supplemental material (found on the OSF page: https://osf.io/m8zyd/?view_only=8bf96eb8270f4e00a151ea8baa5b4747) for those who may be interested, as follows:

“In the 3-class model, class 1 included 60% (n = 347) of women with minimal dyspareunia that declined over time. In this class, the dyspareunia intercept was 0.866 (SE = 0.10, p < .001) with a significant overall decline of -0.276 (SE = 0.10, p = .008) from baseline to 24 months postpartum. Class 2 included 6% (n = 37) of women with moderately high dyspareunia that persisted over time. In this class, the dyspareunia intercept was 5.38 (SE = 0.26, p < .001) with no significant change over time -0.346 (SE = 0.22, p = .11). Class 3 included 34% (n = 198) of women with low-moderate dyspareunia that declined over time. In this class, the dyspareunia intercept was 2.57 (SE = 0.21, p < .001) with a significant overall decline of -0.585 (SE = 0.19, p = .002).”

Discussion:
11. The discussion is well-organized with findings not overstated

Response: Thank you.

12. Would be helpful for the authors to report what to do with these findings and what are next steps.

Response: We believe that the key take-aways in terms of what to do with these findings are:

a) Clinicians should assess for dyspareunia beginning in pregnancy and offer evidence-based interventions to those reporting persistent and distressing pain. We added the following sentence, including reference to a review of evidence-based treatments (new additions underlined):

“This pain should be addressed by early assessment and offering evidence-based interventions. Although such interventions exist for various causes of dyspareunia5, including cognitive-behavioral therapy, pelvic floor physical therapy, and topical lidocaine, their efficacy in the context of the postpartum period should be established in future research.” (page 13)

b) Reassure first-time mothers that biomedical factors, which are largely non- or less-modifiable, did not predict class membership. (see page 14).
c) Screen for the psychosocial risk factors to help identify those at risk for persistent dyspareunia and monitor them more closely to offer intervention should this pain emerge and be distressing for new mothers. On page 14: “Screening for fatigue, depressive symptoms, and pain catastrophizing in pregnancy and at 3-months postpartum when sexual activity has resumed for most new parents, in addition to pain, may assist clinicians in identifying who is at risk for more severe and persistent dyspareunia and should be monitored more closely to avoid the detrimental consequences of untreated pain.”

In terms of next steps, we outline several in the section on the study limitations (pages 15-16). Specifically, we think that the study needs to be replicated with an earlier time-point in pregnancy to shed light on when the divergence in two classes emerges. We also think that future research requires a more multi-dimensional assessment of pain to investigate whether there are different patterns and predictors across various facets of pain, and that a more diverse sample is essential, especially to examine race. We have made minor edits to the manuscript to specifically point to our thoughts for future research (see page 15). In addition, in response to this reviewers’ next comment (#13), we added a sentence indicating that future research should test evidence-based interventions for dyspareunia in the specific context of the postpartum period (page 13).

13. Are there targeted interventions?

Response: This is a very good question. Although there are evidence-based interventions for dyspareunia more broadly (see review cited in reference #5), these interventions have not specifically been tested for postpartum dyspareunia. We added the following clarification on page 13 (new addition underlined):

“This pain should be addressed by early assessment and offering evidence-based interventions. Although such interventions exist for various causes of dyspareunia, including cognitive-behavioral therapy, pelvic floor physical therapy, and topical lidocaine, their efficacy in the context of the postpartum period should be established in future research.”

Reviewer #2:

General Comments

This is a prospective cohort study of dyspareunia in primiparous women. Subjects were recruited between 18-22 weeks gestation and questionnaires were completed at 20-24 weeks gestation, 32-36 weeks gestation, 3-, 6-, 12-2 and 24-month postpartum. The authors used Latent Class Growth Analysis to identify distinct trajectories of dyspareunia, and found that there were two distinct trajectories. One trajectory was in subjects with minimal dyspareunia (79% of subjects) and the other with moderate dyspareunia (21% of subjects). In multivariate analysis, the only variable that was predictive of membership in the moderate dyspareunia group was pain catastrophizing at 3 months postpartum.

Major Concerns

1. Breastfeeding data was only obtained at the 3 month postpartum time point, but has been
Response: Thank you for this comment. We did assess breastfeeding at all postpartum time-points, but there was very variability over time with respect to the proportion of people breastfeeding at each time-point (92.6%, 80.5%, 77.3%, and 68.4%). In our pre-registration of the study analyses, we made the a priori decision to focus on predictors assessed at baseline and at the time when the majority of couples have resumed sexual activity (i.e., 3-months postpartum) because we believed this to be of greatest clinical utility in terms of identifying critical timepoints for intervention (see pages 7, 16). In the data itself, we see that 3-months is also associated with the highest rates of breastfeeding (i.e., 92.6%) and as such would give us the greatest power to detect an effect of breastfeeding on dyspareunia. In our pre-registration, we also specified that if a variable was highly correlated between time-points (i.e., for variables assessed at both baseline and 3-months postpartum), we would use the more theoretically-relevant time-point as the predictor. Following this same logic and given the high correlations between postpartum time-points for breastfeeding (all \( r_s = .43 \) and \(.80\)), we believe it makes the most sense to use the 3-month time-point because that is when the largest proportion of the sample was breastfeeding and when the prevalence rates of dyspareunia were highest.

We clarified the above information with the following addition on page 7:

“Dichotomous (yes/no) breastfeeding was assessed at all time points and was highly correlated (all \( r_s = .43 \) and \(.80\)). Breastfeeding at 3-months postpartum was associated with the highest proportion (92.6%) of women breastfeeding and would give us the greatest opportunity to test for effects with dyspareunia.”

2. A question on non-pregnancy related chronic pain conditions was included in the survey, and there was single self-report item that was dichotomized as yes/no and included fibromyalgia, migraine headaches and dyspareunia. It seems likely that of these conditions, dyspareunia may be much more likely to be a risk factor for persistent postpartum dyspareunia than the other medical conditions that are listed. Can the authors please comment on their decision to not consider pre-pregnancy dyspareunia as a separate variable?

Response: Participants were first asked if they had been diagnosed with a non-pregnancy related chronic pain condition and then if they responded yes, they were given a list of conditions to select from (or write in the condition if not listed). As described in the table below, 64 (11%) women endorsed having a chronic pain condition and only 1 woman endorsed dyspareunia. Therefore, there was not enough variability to examine pre-existing dyspareunia as a separate predictor. In retrospect, we should have asked all women about the presence of pre-pregnancy dyspareunia (i.e., not just chronic pain conditions in general) as some women might not conceptualize dyspareunia as a diagnosed chronic pain condition. This is a limitation of our study. We added the following on page 15:

“Future studies should also assess all women for pre-existing dyspareunia.”

<table>
<thead>
<tr>
<th>Prior chronic pain, ( N = 582 )</th>
<th>( n )</th>
<th>%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>“Have you ever been diagnosed with a non-pregnancy related chronic pain condition? (baseline)”</th>
<th>64</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migraine headache</td>
<td>18</td>
<td>3.1</td>
</tr>
<tr>
<td>Tension headache</td>
<td>9</td>
<td>1.5</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>8</td>
<td>1.4</td>
</tr>
<tr>
<td>Chronic low back pain</td>
<td>19</td>
<td>3.3</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>5</td>
<td>0.9</td>
</tr>
<tr>
<td>Musculoskeletal pain</td>
<td>9</td>
<td>1.5</td>
</tr>
<tr>
<td>Interstitial cystitis</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>Dyspareunia (recoded from ‘other’)</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>7</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>23</td>
<td>3.9</td>
</tr>
<tr>
<td>Temporal-mandibular joint pain</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>Joint pain</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Non-low-back back pain</td>
<td>8</td>
<td>1.4</td>
</tr>
<tr>
<td>Polycystic ovarian syndrome</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Nerve damage/neuropathy</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Depression</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Unspecified abdominal pain</td>
<td>1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

3. While the authors included information regarding "tearing" in their analyses, they make no note of the severity of the tears, whether they were sutured or not, etc. This information would be helpful as severe perineal lacerations have been associated with dyspareunia postpartum. If these data are not available, I would suggest mentioning that this is a weakness in the present study in the discussion.

Response: We do have data regarding the degree of tearing and have now replaced the dichotomous variable with the continuous one. We re-ran the analyses to include the degree of tearing, where 0 equals no tearing and 1 to 4 equals first to fourth degree tears. The revised analysis that includes degree of perineal tearing as a continuous variable revealed a similar pattern as the dichotomous variable, that is, perineal tearing did not significantly predict membership in the moderate relative to minimal dyspareunia group. Revisions to the manuscript were made on page 7 and Tables 2 and 3.

4. The authors collected information on when women returned to sexual activity, but did not report on how many women returned to activity and when. Please include this information in the manuscript.

Response: The key variable in this study was pain experienced during vaginal intercourse. Therefore, to be included in the analyses, women had to report a valid score on the measure of dyspareunia in at least one of their surveys. As noted in Figure 1, 24 women (4%) were excluded from the analyses as they did not complete the measure of dyspareunia at any time-point either because they skipped the measure or they indicated “not applicable”, presumably because they had not engaged in sexual activity in the preceding four weeks. The table below reports the
number of women who indicated having engaged in sexual activity in the preceding four weeks across each time-point of the study:

<table>
<thead>
<tr>
<th>Reporting sexual activity in preceding 4 weeks</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>575 (99%)</td>
</tr>
<tr>
<td>32 weeks</td>
<td>486 (83.5%)</td>
</tr>
<tr>
<td>3-months postpartum</td>
<td>430 (73.9%)</td>
</tr>
<tr>
<td>6-months postpartum</td>
<td>439 (75.4%)</td>
</tr>
<tr>
<td>12-months postpartum</td>
<td>432 (74.2%)</td>
</tr>
<tr>
<td>24-months postpartum</td>
<td>405 (69.6%)</td>
</tr>
</tbody>
</table>

We have added this information on page 11:

“The number of women who reported having engaged in sexual activity in the preceding four weeks was: 575 (99%) at baseline, 486 (83.5%) at 32-weeks pregnancy, 430 (73.9%) at 3-months, 439 (75.4%) at 6-months, 432 (74.2%) at 12-months, and 405 (69.6%) at 24-months postpartum.”

5. The statistical analyses are difficult for the lay person to follow. If at all possible, simplifying the language describing the analyses and making it understandable by the lay person would be helpful.

Response: We have carefully reviewed and revised the language describing the analyses and also consulted other published research papers using the same analyses8-10. On page 9, we now refer the interested reader to a paper published in JAMA that explains the analytical approach in more detail11. As noted in our response to the Editor, our co-authors include two obstetrician-gynecologists and an anesthesiologist, who provided careful input on the accessibility of the analysis description.

6. While pain catastrophizing was the only predictor that was significant in the multivariate analysis for predicting more severe pain, the odds ratios are small. It seems to this reviewer that the paper failed to identify robust predictors, and rather than concluding that biosocial measurement should be taken of individuals, perhaps further research should be undertaken to identify more robust predictors. I would suggest reframing the discussion and conclusions of the study.

Response: Thank you for this comment. Although the odds ratios were small, which we have now added as a qualifier on page 14 preceding our discussion of the psychosocial predictors, these predictors are consistent with prior research examining the average trajectory of dyspareunia. Moreover, small effects that are statistically significant and relevant to people’s lives may lead to more substantial cumulative effects over time12, 13. When considering complex phenomena that have multiple causes—as in dyspareunia—there are more likely to be multiple factors at play, each contributing an effect small in size13. Researchers have cautioned against focusing only on large effects because this practice can contribute to the publication crisis by rewarding inflated effects and overlooking small effects that are most likely to be real and can
still have substantial contributions, particularly over time\textsuperscript{13}. Thus, it is plausible that the observed associations, while small in size, might grow when the variables (i.e., fatigue, depression, etc.) persist without intervention. Taken together, we believe that consideration of small effects is warranted and that there is sufficient evidence (i.e., our results combined with prior research) to demonstrate their robustness and support the assessment of psychosocial variables as predictors of pain. Indeed, pain catastrophizing has consistently been found to be a robust predictor of pain severity, disability, and quality of life\textsuperscript{14}. We agree with the reviewer that additional predictors should be investigated in future research. We have added the following sentence on page 16 in the limitations/future research section:

“The effect sizes for the predictors in this study were relatively small, though small effects can still make substantial contributions, particularly over time\textsuperscript{13}. Future research should seek to identify more robust predictors. Interpersonal factors such as partner responses to pain and sexual communication appear promising\textsuperscript{15}.

Minor Concerns

1. Subjects that delivered outside of the Health Center submitted information on their births either by giving access to their medical record or by completing the survey. Personal recollection of birth experience is a potential source of bias as recall may not be accurate or complete. What percent of subjects had their data obtained in this way?

Response: Only 23 (4\%) participants reported their labor and delivery characteristics by survey. This information was added on page 7 of the manuscript. The information gathered was biomedical (e.g., mode of delivery, episiotomy), which is less likely to be biased than had we asked people to recall level of pain during delivery, for example. For this reason and given the very small \% of women affected, we have not made further changes to the manuscript. We would be willing to do so if the reviewer or Editor would like something specific added.

2. Most readers are likely to be more familiar with the spelling 'cesarean' or 'caesarean' than they will be with 'cesarian' seen in line 101

Response: We have corrected the spelling to ‘cesarean’ as suggested.

3. Line 10: Since this is a prospective study, usually the number of patients included goes into the results. I would delete the line "This study was a planned primary analysis of 582 first-time mothers."

Response: We have removed this line from the Methods section.

4. Line 42: "Prior studies examining predictors of dyspareunia in pregnancy and postpartum have 4. been retrospective,..." there are quite a few papers that look at this prospectively, however, it may be combined with sexual function overall

Response: Yes, our understanding of the literature is that the majority of prior prospective studies have focused on sexual function overall. There are indeed a handful of exceptions (e.g., Alligood et al., 2016) and we therefore added the word “primarily” to this sentence.
5. One of the biggest predictors of sexual activity is the presence of a partner. How many of these women had a consistent partner over the timeframe of the study?

Response: As seen in Table 1, 575 (98.8%) of our sample were married or living with their partner. Unfortunately, this does not constitute enough variability to effectively examine relationship status as a predictor in our study.

6. Dyspareunia refers to coital pain - this is why mention of how many women were sexually active is important.

Response: We agree. Please refer to our response to this reviewers’ comment #4 (major concerns) for further details.

7. Did the authors investigate whether or not women avoided intercourse because of pain - when surveyed they may not have had any pain, but they also may not be attempting intercourse because of the pain.

Response: 24 women (4%) were excluded from the analyses as they did not provide a valid score on the dyspareunia item at any time point during the study either because they skipped the measure or they selected “not applicable” to the item. In our response to your comment #4 (major concerns), we provide a Table illustrating how many women reported sexual activity in the previous 4 weeks across all time points. As noted, we have also added this information to the manuscript. We agree that women who consistently avoided sexual activity during the study period would not be captured in our study. We have added the following limitation on page 15:

“In addition, our core study variable was dyspareunia and a small number of women who did not report a valid score on this measure at any time during the study were excluded. Therefore, women who are consistently avoiding sexual activity as a result of the pain may not be captured in the current study.”

Reviewer #3:

This is an important study with a long follow up, explaining the natural course of peripartum dyspareunia in nulliparous women. The fact that biomedical factors, which are largely non- or less-modifiable, did not predict dyspareunia severity may be reassuring to first-time mothers and physicians. However, I have some observations about general analysis and request of data addition that I want to be considered before going further with consideration.

1. I do not like that you want to identify two distinct classes of trajectories of dyspareunia. The trajectories are completely parallel in the two groups during time so in my opinion it is a continuous spectrum of worsening dyspareunia so I don't like trying to identify two different mutualistic categories (moderate and minimal) of no clinical significance and reproducibility. Dyspareunia is not a dichotomous but a continuous variable/clinical problem. I prefer that you correlate all the various factors in monovariate and multivariate analysis with the variation
deltas of dyspareunia values at different follow up times to highlight what happens in the group in general during time.

Response: We agree that dyspareunia is not a dichotomous variable, although it is common to classify it as clinically significant versus not. We appreciate the reviewer’s perspective on preferring to see an average trajectory of dyspareunia across the full sample. We had included this information on page 10 of the results in our original submission (at the start of the Results section reporting trajectories). In response to a request from the Editor (see Editor comment #2), we also added the median rates of dyspareunia to the manuscript in Table 2 and also a summary of this information in the Abstract (page 2). We have added a sentence on page 11 to refer the reader to Table 2 to find the median ratings of dyspareunia across time-points.

We believe there is added value in identifying the distinct trajectories and predictors of group membership in the trajectories. Specifically, prior research has evidenced a wide degree of variability in the prevalence of dyspareunia postpartum. This variability can be explained by the heterogeneity of dyspareunia, which is clarified by the identified two classes. Importantly, the two-class models better fit the data than a single class model. Of note, we did not decide apriori to only examine or test for 2 classes, but rather our analytic procedure revealed that a 2-class model best fit the data. As seen in Supplemental Table 1, we actually examined up to 6-classes. Examining classes of trajectories also affords the opportunity of identifying different patterns of change over time, which can point to clinically meaningful points of intervention. For example, if one class of women showed an increase in pain at 3-months postpartum and the other class did not. It so happens that in the current study, the 2 classes followed a similar overall shape over time; however, we could not know this in advance and this information is an important contribution to knowledge. Indeed, in our pre-registration of our study design, hypotheses and analyses, we stated that the number of classes would be exploratory as would the shape of change over time. Finally, the extraction of classes enables an examination of those factors associated with class membership, which is clinically useful. For example, biomedical factors associated with dyspareunia in cross-sectional studies were not significant predictors of class membership, whereas modifiable psychosocial factors were significant predictors, and these can be used to identify people at risk of moderate dyspareunia in the perinatal period.

2. Can you correct your analysis also for additional fundamental factors such as age of women at delivery, age of partners, BMI of women, fetal weight, neonatal wellbeing and the presence of partum hemorrhage/related anemia in women? Do you have data also about number of intercourses/week at each follow up evaluation? Can you please show them, they would be very explanatory.

Response: We appreciate the reviewer’s comment regarding other factors that may be related to dyspareunia. We did have some of the variables that the reviewer was interested in, including age at baseline, fetal weight, AGPAR scores at 1 and 5 mins (note we also have the 10-minute scores but very few babies required the 10-minute assessment), and whether or not the child was in the NICU. Our two classes (minimal and moderate dyspareunia) did not differ significantly on any of these variables. We have included these data in the supplemental materials (see Supplemental Table 2, https://osf.io/m8zyd/?view_only=8bf96eb8270f4e00a151e8b8a5b4747). We also tested whether or not these variables were associated with reported dyspareunia at any
of the time points. Of the 30 correlations, only 3 were significant. Age at baseline was significantly associated with pain at baseline \( r(456) = -.175, p < .001 \) and pain at 32 weeks \( r(440) = -.19, p < .001 \). Pain at baseline was significantly associated with AGPAR (5 mins), \( r(437) = -.135, p = .005 \).

It is not recommended to include covariates in latent class growth models, as the inclusion of covariates contributes to the class separation. What this means is that it becomes difficult to ascertain if the distinct classes of trajectories are based on the outcome variable, in this case dyspareunia, or if the covariates are driving the formation of the latent classes. Indeed, best practice is to use the three-step procedure that we followed in the current paper to circumvent this issue. For this reason, based on best practices for these particular analyses, we chose not to include covariates when establishing the unique dyspareunia classes. Because we pre-registered our analyses (including the predictors of class membership), we did not re-run the model with the new suggested variables given that they did not differ between our groups and as such would not predict group membership. This decision was also made in consideration of the statistical reviewer’s comment below regarding running multiple comparisons.

We have added the sexual frequency data at each time point to our sociodemographic table as per the reviewer’s suggestion (Table 1, page 17).

3. Do you have data about use of contraception during postpartum? POP? IUD? Implants? And how can contraception use affect dyspareunia levels? These could be categories to be assessed separately (contraception yes vs. no, hormonal vs. non hormonal, LARC vs. SARC? etc.).

Response: Unfortunately, we did not collect data on contraception. We have added this limitation on page 16.

4. Do you have data about the presence of organic causes for dyspareunia in these women (endometriosis, adenomyosis, fibroids, etc.? before and after pregnancy?

Response: We do not have these data for our full sample as we did not ask these questions in the self-report survey. Organic causes of dyspareunia would need to be determined by a physician, with the woman undergoing a gynecological examination.

That being said, for the reviewers’ interest, we did conduct a sub-study to examine physical indicators and biopsychosocial predictors of pain during a gynecological examination as well as self-reported pain during intercourse at 12- and 24-months postpartum. For this sub-study, a subsample of 97 women at 12-months postpartum underwent a gynecological exam, and 44 women underwent the exam at 24-months. The women were grouped into those reporting clinically significant pain during intercourse (\( > 4/10 \) on a visual analogue scale) or minimal pain (\( < 3/10 \)). We found that the majority of women in both pain groups had normal physical findings in the gynecological exams and there were no observable physical indicators of clinically significant postpartum pain during intercourse or pain during the gynecological exam at 12 or 24 months. Given that these findings included a much smaller sample and focused on the gynecological exam in particular, we felt that the results were beyond the scope of the current manuscript and therefore pursued publishing these results separately. The manuscript recently
received a request to revise our submission for publication in the Journal of Sexual Medicine.

STATISTICS EDITOR COMMENTS:

1. Lines 22-27: Each of the statistically significant associations had ORs which were relatively modest. So was the model useful clinically as well as showing statistically significant associations with dyspareunia class? Even the pain catastrophizing measure at 3 months (aOR = 1.09, with CI = 1.04-1.15) seems more impressive statistically than in a clinically useful way.

Response: Please refer to our response to Reviewer 2, Comment #6 regarding the relevance and contribution of small effect sizes.

2. Table 1: Do age and relationship month have normal distributions? If not, then should be summarized as median(range or IQR), rather than as mean±SD.

Response: Age was normally distributed, whereas relationship duration was not. We have updated Table 1 (page 17) to include the Median and Range for that variable.

3. Table 2: Do the various pain and other scores have normal distributions? If they are ordinal measures, then likely median (range or IQR) or description by categories would be more informative.

Response: Most of the continuous predictors were not normally distributed, so we have amended Table 2 (page 19) to include the Median with Range for all continuous variables with the exception of degree of perineal tearing, which was normally distributed.

4. Table 3: Suggest placing this Table in supplemental material. Also, should explain for the readers unfamiliar with the tests utilized the meaning of the various stats tests used. That is, some readers might interpret the columns of p-values as showing that the 3 class model is improved vs the 2 class model, yet the 2 class model was chosen.

Response: We have moved Table 3 to supplemental materials as suggested (now labelled Supplemental Table 1). We added an explanation of the meaning of the tests used in the note below the Table.

5. Table 4: In terms of predictors, there are 20 candidates. It appears that the threshold for inclusion did not account for multiple hypothesis testing. A stricter threshold likely would have made none of the predictors statistically significant, except for the one retained in the multivariate model.

Response: We appreciate this comment and have gone back to our analyses and applied the Benjamini-Hochberg (B-H) correction to all significance tests to control for the false discovery rate\textsuperscript{[19]}. The B-H procedure demonstrates increased power in comparison to the standard Bonferroni, which has been criticized for being overly conservative and controlling only the family-wise error rate. The B-H method controls for the false discovery rate by sequentially
comparing the observed p-value for each of the test statistics in order from smallest to largest, and then calculates B-H critical values. Each test statistic receives its own critical value indexed by \((i/m)Q\), where \(i\) is the individual p-value’s rank, \(m\) = total number of tests, and \(Q\) is the false discovery rate (which we set at 15%). Based on this correction, the critical p-value for our data becomes \(p = .02\) for the comparisons in Table 2 and \(p = .03\) for the univariate tests in Table 3.

We added information about this correction on page 10:

“We applied the Benjamini-Hochberg (B-H) correction to all significance tests to control for the false discovery rate\(^{19}\).”

6. **Fig 1:** Need to describe the Table 1 characteristics of all women who were eligible, but who were uninterested, withdrew or who were otherwise excluded and contrast with the analyzed cohort. This would address any issue re: selection bias.

**Response:** For women who were deemed eligible during our screening, but then decided not to proceed (i.e., were uninterested), we do not have any further characteristics about this sample given that they did not complete the baseline survey. For women who were deemed eligible but were excluded from analyses \((N = 24)\) there were no significant differences (all \(ps > .12)\) in sociodemographics compared to the sample included in the analyses \((N = 582)\). Women who were excluded were on average 31 years old at the time of recruitment \((SD = 3.9)\). Most identified as heterosexual \((n = 21, 87.5\%)\), were married or living with their partner \((n = 21, 87.5\%)\), and reported a median relationship duration of 93 months \((Range = 5-197)\). The majority were Canadian \((n = 20, 83.3\%)\), well educated (i.e., completed a university degree(s); \(n = 12, 54.2\%)\), and had an annual household income of more than $60,000 \((n = 16, 66.7\%)\). We added the following sentence on page 11:

“There were no significant differences in sociodemographics between our sample of 582 women and the 24 women who were excluded.”

**EDITORIAL OFFICE COMMENTS:**

1. The Editors of Obstetrics & Gynecology have increased 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:

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

2. When you submit your revised manuscript, please make the following edits to ensure your submission contains the required information that was previously omitted for the initial double-blind peer review:

* Include your title page information in the main manuscript file. The title page should appear as the first page of the document. Add any previously omitted Acknowledgements (i.e,
meeting presentations, preprint DOIs, assistance from non-byline authors).

* Funding information (i.e., grant numbers or industry support statements) should be disclosed on the title page and in the body text. For industry-sponsored studies, the Role of the Funding Source section should be included in the body text of the manuscript.
* Include clinical trial registration numbers, PROSPEROr registration numbers, or URLs at the end of the abstract (if applicable).
* Name the IRB or Ethics Committee institution in the Methods section (if applicable).
* Add any information about the specific location of the study (i.e., city, state, or country), if necessary for context.

**Response:** The above information was added to the manuscript file.

3. Obstetrics & Gynecology uses an "electronic Copyright Transfer Agreement" (eCTA), which must be completed by all authors. When you uploaded your manuscript, each co-author received an email with the subject, "Please verify your authorship for a submission to Obstetrics & Gynecology." Please check with your coauthors to confirm that they received and completed this form, and that the disclosures listed in their eCTA are included on the manuscript's title page.

**Response:** All co-authors completed this form upon our initial submission. No disclosures to report.

4. 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 data definitions at [https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-obstetrics-data-definitions](https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-obstetrics-data-definitions) and the gynecology data definitions at [https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-gynecology-data-definitions](https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-gynecology-data-definitions). If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

**Response:** Not applicable.

5. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Original Research reports should not exceed 5,500 words. Stated word limits include the title page, précis, abstract, text, tables, boxes, and figure legends, but exclude references.

**Response:** The final word count excluding references is 4954.

6. 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).

* If your manuscript was uploaded to a preprint server prior to submitting your manuscript to Obstetrics & Gynecology, add the following statement to your title page: "Before submission to Obstetrics & Gynecology, this article was posted to a preprint server at: [URL]."

**Response:** The above information is all confirmed.

7. Provide a short title of no more than 45 characters (40 characters for case reports), including spaces, for use as a running foot.

**Response:** Trajectories and predictors of dyspareunia (42 characters)

8. Provide a précis on the second page, for use in the Table of Contents. The précis is a single sentence of no more than 25 words that states the conclusion(s) of the report (ie, the bottom line). The précis should be similar to the abstract's conclusion. Do not use commercial names, abbreviations, or acronyms in the précis. Please avoid phrases like "This paper presents" or "This case presents."

**Response:** The following Précis was added on Page 2.

**Précis:** Two distinct trajectories of dyspareunia were identified from pregnancy to 24-months postpartum; pain catastrophizing predicted membership in the moderate relative to minimal pain trajectory.

9. 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 limit for Original Research articles is 300 words. Please provide a word count.*
Response: We have carefully reviewed the abstract to confirm it is accurate and does not contain any information that does not appear in the body text. The word count for the Abstract is exactly 300 words.

10. 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.

Response: We removed acronyms for the measures used in this study. In the data analysis description, we again removed acronyms (although those that were included are very commonly used language for these analyses).

11. 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.

Response: Not applicable.

12. ACOG avoids using "provider." Please replace "provider" throughout your paper with either a specific term that defines the group to which are referring (for example, "physicians," "nurses," etc.), or use "health care professional" if a specific term is not applicable.

Response: We corrected one instance in the manuscript to replace the word “provider” with “professional”.

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").

Response: This comment was addressed in our original submission.

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.
Response: These instructions were reviewed and integrated in our original submission.

15. Please review examples of our current reference style at http://ong.editorialmanager.com (click on the Home button in the Menu bar and then "Reference Formatting Instructions" document under "Files and Resources). Include the digital object identifier (DOI) with any journal article references and an accessed date with website references. Unpublished data, in-press items, personal communications, letters to the editor, theses, package inserts, submissions, meeting presentations, and abstracts may be included in the text but not in the reference list.

In addition, the American College of Obstetricians and Gynecologists' (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the references you are citing are still current and available. Check the Clinical Guidance page at https://www.acog.org/clinical (click on "Clinical Guidance" at the top). If the reference is still available on the site and isn't listed as "Withdrawn," it's still a current document.

If the reference you are citing has been updated and replaced by a newer version, please ensure that the new version supports whatever statement you are making in your manuscript and then update your reference list accordingly (exceptions could include manuscripts that address items of historical interest). If the reference you are citing has been withdrawn with no clear replacement, please contact the editorial office for assistance (obgyn@greenjournal.org). In most cases, if an ACOG document has been withdrawn, it should not be referenced in your manuscript.

Response: We have carefully reviewed the references in line with this journal.

16. Figures 1-2: Please upload as figure files on Editorial Manager.

When you submit your revision, art saved in a digital format should accompany it. If your figure was created in Microsoft Word, Microsoft Excel, or Microsoft PowerPoint formats, please submit your original source file. Image files should not be copied and pasted into Microsoft Word or Microsoft PowerPoint.

When you submit your revision, art saved in a digital format should accompany it. Please upload each figure as a separate file to Editorial Manager (do not embed the figure in your manuscript file).

If the figures were created using a statistical program (eg, STATA, SPSS, SAS), please submit PDF or EPS files generated directly from the statistical program.

Figures should be saved as high-resolution TIFF files. The minimum requirements for resolution are 300 dpi for color or black and white photographs, and 600 dpi for images containing a photograph with text labeling or thin lines.
Art that is low resolution, digitized, adapted from slides, or downloaded from the Internet may not reproduce.

Response: We have removed the figure files from the main manuscript and uploaded them separately, as requested.

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Response: We intend to publish this manuscript as Open Access.

References


