Author’s response to reviews

Title: Knowledge of Pelvic Floor Disorders in Women Seeking Primary Care: A Cross-sectional Study

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between these two modes that could cause a bias/difference in PFD knowledge? For example, did those pick up the questionnaire at advertised locations have more time to complete the questionnaires than those approached by a research team member (e.g., having more time might allow the participant to search answers on the internet).

We did not record data on specifically on how many participants were enrolled using either enrollment methods; however, regardless of the method of enrollment, each participant ultimately decided whether or not to complete the questionnaire on their own. We added this detail in the Methods. Both of these enrollment methods may lead to selection bias in the types of participants who chose to complete the questionnaire and we have further expounded upon this in the Discussion. As it is possible that some participants who agreed to complete the questionnaire on initial approach may have ultimately not completed the questionnaire and returned it to the unanswered questionnaire pile, it is not clear that the different enrollment methods would have resulted in different types of selection bias.

2. The author defined lack of knowledge using the cutoffs of 50% and 80%. It would be useful to include more descriptive summaries using knowledge score as continuous variable. For example, what was the median score by education level?

While we understand the utility of presenting the knowledge questionnaire scores as continuous variables, as these are previously validated questionnaires with established score cut-offs, to increase comparability between studies, we ultimately decided to present most of our analysis using the dichotomous outcomes based on established cut-off scores. We did descriptively summarize the mean scores by the demographic characteristics including education (pasted below) but respectfully decline to add to our manuscript as it is unclear if this would significantly add to our reader’s understanding of
the study findings.

PIKQ Scores according to demographic data.

<table>
<thead>
<tr>
<th></th>
<th>Mean PIKQ-UI Score (%) + SD</th>
<th>Mean PIKQ-POP Score (%) + SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>55 + 38</td>
<td>42 + 31</td>
</tr>
<tr>
<td>30-39</td>
<td>36 + 39</td>
<td>29 + 33</td>
</tr>
<tr>
<td>40-49</td>
<td>49 + 34</td>
<td>36 + 32</td>
</tr>
<tr>
<td>50-59</td>
<td>61 + 32</td>
<td>45 + 34</td>
</tr>
<tr>
<td>60-69</td>
<td>58 + 31</td>
<td>47 + 32</td>
</tr>
<tr>
<td>70-79</td>
<td>57 + 31</td>
<td>50 + 30</td>
</tr>
<tr>
<td>&gt;80</td>
<td>43 + 33</td>
<td>32 + 33</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>57 + 33</td>
<td>45 + 34</td>
</tr>
<tr>
<td>African-American</td>
<td>42 + 33</td>
<td>33 + 30</td>
</tr>
<tr>
<td>Other</td>
<td>65 + 32</td>
<td>50 + 28</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; College</td>
<td>66 + 31</td>
<td>54 + 33</td>
</tr>
<tr>
<td>Some college</td>
<td>54 + 34</td>
<td>42 + 30</td>
</tr>
<tr>
<td>&lt; High school</td>
<td>38 + 30</td>
<td>27 + 29</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$50,000</td>
<td>64 + 30</td>
<td>49 + 32</td>
</tr>
<tr>
<td>$30,000 - 50,000</td>
<td>55 + 35</td>
<td>45 + 34</td>
</tr>
<tr>
<td>&lt; $30,000</td>
<td>42 + 33</td>
<td>34 + 30</td>
</tr>
</tbody>
</table>

3. Stepwise regression was used to derive the final logistic regression model. Please present the odds ratio from the full model together with those from the final model.

As stated in the Methods, we included covariates that were significant on bivariate analysis while locking in specific confounders (i.e. age, race, income, education). We then removed the collinear covariates from the final model. While we appreciate the reviewer’s comment, we think that for the majority of our readers, it would be too cumbersome to list all the ORs/ p-values for covariates that were not included in the final model.

4. Income was said to be forced into the model, but the OR for income was not presented in Table 3.

We appreciate the reviewer recognizing this mistake and Table 3 has been edited. While we did indeed include income in our final model, we did accidentally delete the values from Table 3.
5. Revisions are needed to the description of statistical methods in the method section. The sentence "Variance inflation factor (VIF) was performed to address the potential of collinearity inflating the standard error when performing multiple linear regression rather than logistic regression." needs to be revised as it does not accurately describe what VIF is. The sentence "Logistic regression diagnostics run on the UI and POP multivariate regression models led to the exclusion of certain variables." is unclear. Is it referring to large VIF?

We appreciate the reviewer’s insights and the relevant section in Methods has been revised. Covariates with large VIFs (VIF > 5) were removed from the final model.

6. VIF was used to assess collinearity between covariates. However, some variables are by definition or known to be highly correlated and so one should carefully select the variables to include in the regression analysis rather than purely relying on the VIF. E.g., those with a diagnosis of PFD would imply they were aware of PFD as medical conditions and so re-categorization (or combining) of these variables would be required to properly incorporate them into the multivariate model.

We agree with this comment and did not include covariates that were collinear. Covariates that may a priori seem collinear but were ultimately not noted to be collinear was further expounded upon in Discussion. For example, we found that being unaware of urinary incontinence and no previous diagnosis of urinary incontinence were not collinear i.e., the women who were not previously diagnosed with UI were not necessarily the same women who were unaware of urinary incontinence as medical conditions.

7. What variables were included in the starting model of stepwise regression? Putting covariates that were highly correlated into the starting model could produce incorrect results.

In the initial model, we included all variables that were significant on bivariate analysis and the variables that were a priori locked into the model regardless of significance. We agree that covariates that are highly correlated may result in incorrect results and so VIF was performed which resulted in certain covariates being removed from the final model. This is specified in the footer for Table 3 as well as within the Methods and Results.

8. In the method section, the stated purpose of the link test seemed redundant as the model was derived from stepwise regression that already assessed which variables should be included.

Thank you for recognizing this mistake. This has been removed.

9. It was surprising that age was statistically insignificant in the univariate analysis for PIKQ-POP, but became significant in the multivariate analysis. In addition, the ORs for age were very different between these two analyses. Further discussions/investigations on this are needed. Was this due to confounding? Or was it because variables highly correlated with age were included in the model and distorted the results.

This finding was also surprising to us. The reason for this may be the unpredictable effects of unbalanced sample sizes in the different age groups with our reference group (18-29) having the smallest sample size. Specifically, the 18-29 age group only accounted for 6.1% of the total population but still had a large within group variation in questionnaire scores.
10. The authors stated that "the mean VIF for both models were close to 1". Did any covariate had VIF that was substantially larger than 1? This would be more informative to report than the mean VIF.

We appreciate this comment and have modified the table footer as well as the Results.

11. For the last 10 lines of the results section which talked about regression diagnostics, I would suggest shorten the methodological descriptions as these were already presented in the method section. A simple sentence saying that regression diagnostics has been performed and no problems were identified would generally be sufficient.

We appreciate this comment and have made the recommended changes.

12. In the discussion, the authors compared the % of respondents that were non-proficient to estimates from other studies. It would be useful to descriptively compare the mean/median score across studies as well. For example, in reference #19, the mean for POP scale was only 30.6 compared to 42 in the current study.

While we appreciate this comment and the reviewer’s careful review of the literature, as most studies primarily addressed non-proficiency using established cut-off scores, it is unclear if the mean score differences found in the different studies (30.6 vs. 42) are meaningful.

13. For the tables, please report the actual p-value instead of "NS".

We have amended our Tables.

14. Table 1
a. For continuous variables that are presented as median, please provide the IQR so that readers can have a better understanding on the distribution of the data.

This is added to our tables.

b. Footnote (and in the methods section of the text) stated that "Continuous data was compared between proficient and non-proficient groups", was the comparison between clinic types?

This was a comparison between clinic types. We have modified our Table footer.

c. Please consider adding the summary for age using the same categories as in the logistic regression analysis. Without it, one cannot judge whether the insignificant result in Table 2 for age was due to insufficient sample size in some of the levels or was it a lack of signal.

We have added these figures to Table 1.

15. Table 2
a. In the text, the range of age was stated as 21-97. Please change the first category of age from "18-29" to "21-29".

We appreciate the careful review, the first category should be 18 – 29 and we have made sure all the Tables and text are consistent.
b. For weight, is the OR per 1 lb increase? Please consider changing the reporting unit to 10 lbs so that the OR is not so close to 1 after rounding to two decimal places.

We reviewed our data and decided to remove self-reported weight from Table 2 and Table 3 as this covariate was not included in our final model and it was missing in the majority (>50%) of the data from our study participants and there is no a priori rationale for weight to be independently associated with knowledge of pelvic floor disorders.

c. For "Information", the 95% CI excluded 1 and thus statistically significant (not "NS").

We appreciate the careful review and have corrected our mistake.

Reviewer 2
The main issue with this paper is it lacks a detailed discussion about bias. There is a discussion about ethnic groups but I think there should be a further discussion about the weaknesses of the trial in terms of enrollment. Approaching a random sample of people or asking people to pick up a form is likely to exclude a whole raft of patients and that may lead to bias. Although the response rate is briefly touched on (P7 Line 52) I think the authors should provide a little more commentary on this.

We agree that our study findings may be subject to selection bias. Although the method of recruitment was different, regardless of the method of enrollment, each participant ultimately decided whether or not to complete the questionnaire on their own. We added this detail in the Methods. Both of these enrollment methods may lead to selection bias in the types of participants who chose to complete the questionnaire and we have further expounded upon this in the Discussion. As it is possible that some participants who agreed to complete the questionnaire on initial approach may have ultimately not completed the questionnaire and returned it to the unanswered questionnaire pile, it is not clear that the different enrollment methods would have resulted in different types of selection bias.

Reading this as a clinician, I was a bit overwhelmed by the statistical analysis techniques. This is not a criticism but perhaps the stats could be discussed separately and from the outcomes. (Page 9 Lines 10-59 is a good example of the issue).

We appreciate this comment and have clarified our analysis techniques in the Methods.