Author’s response to reviews

Title: The Family Planning Quotient and Reproductive Life Index (FPQ/RepLI) tool: a solution for family planning, reproductive life planning and contraception counseling

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Response to Reviewer Reports:

Reviewer #1: The tool that this article describes is an important addition to tools reproductive health practitioners have available to enhance women's experience of care as patient-centered and respectful. The authors do a good job of describing a carefully designed tool. The article needs to address additional issues

Reviewer #1 Comment 1:
A additional details in the methodology
a.1 method for patient selection (all who presented that day? some sub-sample? and if the later, selected how/method for randomization?)

Reviewer #1 Response 1:
Thank you for your comment. We have added details about the patient selection to page 9, line 134. This reads: All patients who presented to clinic used the FPQ/RepLI tool during their encounter and were offered the evaluation survey to complete.

Reviewer #1 Comment 2:
a.2 length of the time to administer the tool
Reviewer #1 Response 2:
We have added details about the length of time to page 8, lines 104 to 115. This now reads: It takes approximately five minutes to administer the FPQ/RepLI tool, which is administered in English. Encounters with Spanish speaking patients are done using an interpreter, however, the FPQ/RepLI tool has not been translated into Spanish. The discussion of contraceptive needs may continue beyond the time it takes to complete all fields of the tool. In our setting the health education portion of the clinical visit where the FPQ/RepLI tool is completed takes ten to twenty minutes in total, and the documented information provides an effective scaffolding upon which to build the contraceptive counseling patient encounter, as salient features of a patient's reproductive history and goals are recorded on the sheet and provide a direction for the discussion of a contraceptive plan. The informative details include the patient's age and history of births/miscarriages/abortions/still births; their desired childbearing years, if any; and methods of birth control used in the past and their experiences with them.

Reviewer #1 Comment 3:
a.3 health educator factors (concordance with patient)

Reviewer #1 Response 3:
We have added details about the lay health educators on page 8, line 102. This now reads: In the setting of our publicly funded health system, most of our lay health educators are from the same racial/ethnic background as the majority of our patients.

Reviewer #1 Comment 4:
a.4 Language(s) the tool was conducted in, and mechanisms for interpretation if English only

Reviewer #1 Response 4:
Thank you for asking for this clarification. At the time of our study, the tool was only available in English, though we are working to have it translated to Spanish now. That is a good idea and a natural next step to increase the use of our tool. We have clarified that during the study period, the tool was only available in English on page 8. This now reads: It takes approximately five minutes to administer the FPQ/RepLI tool, which is administered in English. Encounters with Spanish speaking patients are done using an interpreter, however, the FPQ/RepLI tool has not been translated into Spanish. Encounters with patients that only spoke Spanish were done using the English text tool, though a Spanish language interpreter was used. We have added this as a limitation of the generalizability of the tool in the discussion section (Lines 293-295 on page 16). This now reads: At the time of the study, the tool was only available in English, which may have prohibited it from being useful among the small number of women served in our setting who only spoke and read Spanish. Though we utilize Spanish language interpreters in the clinical setting, in order to be useful to women who speak and read Spanish as their primary language this tool will need to be made available in Spanish.

Reviewer #1 Comment 5:
a.5 How many providers interviewed (n mentioned in results, not sampling methodology/n not presented in methods)
Reviewer #1 Response 5: Thank you. We have revised our methods section to include more details about the sampling methods as they relate to the providers. This is included on page 10, beginning at line 141 and now reads (newly added text is in italics): Clinic providers (attending and resident physicians plus medical students) were surveyed once per month from July 2014 to July 2016. The attending physicians are permanent members of the medical staff in our health system, therefore they were surveyed one time at the start of the study after using the FPQ/RepLI tool for one month. The resident physicians rotate through our system on repeat because they are a set cohort that completes their four-year residency within our system. Each resident was surveyed at the end of their first monthly clinical rotation after our study began. Other residents outside of the cohort visit for a one-time rotation, in addition to medical students who rotate through our reproductive health and family planning clinics one time during their training. All of these providers were surveyed at the end of their rotation. A total of 66 providers rated their opinion on five statements, using a five-point Likert scale, ranging from strongly agree, to agree, neither agree nor disagree, disagree, and strongly disagree.

Reviewer #1 Comment 6:
a.6 Description of counseling tool itself (visuals or all text? measures taken to ensure language is culturally appropriate? filed tested and revised?), and method used to elicit patients perception of using the tool (as reported in Table 1 - if a module within the counseling tool, clarify) B Comparison with other, similar tools, ideally with data collection from patients and providers. In particular I'm thinking of Balanced Counseling Strategy Plus (used widely globally). IPPF also has counseling tools. A review of tools in use with pros and cons and a comparison to the tool you are piloting is needed.

Reviewer #1 Response 6: Thank you. We have added details about the design of the tool on line 66. This now reads:
Additionally, we have clarified on line 84 that the tool is a combination of visuals and text. The accompanying figures 1 and 2 show the tool. This now reads: The FPQ/RepLI has four parts, which are a combination of visuals and text.
We have added a review of tools in use with pros and cons and a comparison to the tool you are piloting is needed.

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Numerous other strategies and tools aimed at reproductive life planning exist in the realm of family planning. My Birth Control is a contraceptive decision support tool which is used through a tablet device [22]. The initial study of My Birth Control found that compared to women who received normal contraceptive counseling, women who used My Birth Control were more likely to report complete satisfaction with their chosen method [22]. In a recent study of this tool, patients interested in beginning or changing birth control methods were randomly assigned to interact with the tool or receive usual care. Following their visits, patients were asked to fill out a survey which included questions regarding contraceptive knowledge and decision quality. Surveys were also distributed five and seven months after receiving the new birth control method to determine continuation of the method. It was found that this intervention did not impact the likelihood of continuation, but it did positively impact contraceptive knowledge and an improved decision making experience [23]. This interactive interface was received well by patients by making them feel more involved and informed in their contraceptive decision making. In the future, the FPQ/RepLI tool could introduce this digital aspect to the study to make the experience even more interactive and to benefit the patients’ experience. Bedsider (https://www.bedsider.org/) is another a web based contraceptive support tool aimed at women of reproductive age. After a series of focus groups were conducted, results indicated that that Bedsider was very well received by patients, but was not trusted or recommended by providers which
inhibited use [24]. Similarly, an evaluation of the Smart Choices computerized tool found that patients who used the tool were pleased, but responses from providers varied in regard to how useful they found the tool with some indicating the tool had limited utility in the clinic setting [25]. This highlights the need to develop tools that are accepted as useful by both patients and their medical providers. Another study evaluated the reminder features for Bedsider to determine if these features impact contraceptive coverage and likelihood to attend scheduled medical appointments. In this study, staff were trained and encouraged to refer women to enroll in Bedsider’s special portal to receive either text message or email reminders about upcoming appointments and refill dates for their oral contraceptives. The study found that the women enrolled in reminders from Bedsider did have a high rate of return for appointments, but there was no significant change in contraceptive coverage [26].

The mobile app "miPlan" is intended to provide LARC focused contraceptive knowledge to women in the waiting room of a clinic prior to a contraceptive counseling appointment. In one study, women were randomly selected to either utilize the intervention in addition to contraceptive counseling or receive standard contraceptive counseling. Women who were assigned to miPlan had more LARC knowledge during their contraceptive counseling visit than those who did not use miPlan; however, LARC uptake was not impacted [27]. A unique feature of the app was the inclusion of short videos featuring Latina and African American women speaking about LARC. Inclusion of women from racial and ethnic minority groups into the content of the app has the potential to make women from these groups more comfortable talking about LARC, similar to when a peer health educator conducts the reproductive life planning portion of the clinical encounter. Another online questionnaire called Contraceptoin: HeLping for WOmen’s choicE (CHLOE) was developed by gynecologists in Europe to help women better pick a contraceptive option prior to their medical appointment. It consists of 24 targeted questions to help guide a woman to contraceptive choices that might be best for their specific needs [28]. Similar to the FPQ/RepLI, CHLOE is intended to guide the discussion with a medical practitioner, not replace it. CHLOE, however, is only focused on contraception and does not cover topics across the full range of reproductive life planning.

In the setting of our clinics, the FPQ/RepLI is a convenient tool that is able to effectively cover the multidimensional nature of reproductive health discussions and decision making. The FPQ/RepLI tool contributes a more convenient, longitudinal and visual than any existing tools. Many other tools use by healthcare providers are lengthy and confusing. This tool streamlines the questions from the FPQ, and it is less laborious on the person using it. This tool also provides a longitudinal aspect that other tools do not. The longitudinal view aids in reproductive goal planning and reproductive health management by mapping benchmarks, as well as reproductive life trajectory. This tool makes contraceptive counseling simpler, modular, and more visual than before, allowing patients to better determine their needs to meet future goals.

Reviewer #1 Comment 7: C A strong analysis of what makes this tool in particular a contribution is missing. That a tool like this is useful is clear. The authors need to make a clearer, stronger argument for what THIS tool contributes.

Reviewer #1 Response 7: Thank you. We have reviewed the existing tools in the added discussion section beginning at line 209. Further, we have added text to clarify and strengthen our argument for what the FPQ/RepLI tool contributes. This is mainly summarized at line 263 that now reads:

The FPQ/RepLI tool contributes a more convenient, longitudinal and visual than any existing tools. Many other tools use by healthcare providers are lengthy and confusing, and require the participant to complete the tool online before interacting with anyone in the clinical setting. This tool streamlines the
questions from the FPQ, and it is less laborious on the person using it. This tool also provides a longitudinal aspect that other tools do not. The longitudinal view aids in reproductive goal planning and reproductive health management by mapping benchmarks, as well as reproductive life trajectory. This tool makes contraceptive counseling simpler, modular, and more visual than before, allowing patients to better determine their needs to meet future goals.

Reviewer #1 Comment 8:
D Some additional context, and ideally data, on FP utilization. While capturing the FP utilization from the respondents to the survey is not possibly because of the need to preserve respondents’ anonymity, ideally, the article would include utilization data before and after using introducing the tool in routine use. Lacking that, a thorough literature review of how similar tools have impacted uptake and discussion of the potential effort and effect of introducing in this setting would be necessary at a minimum. I encourage the authors to undertake the suggested revisions, as the topic is an important one, the tool seems promising and a revised article would be valuable contribution to the discourse on applied mechanisms to ensure reproductive health care is as respectful and woman-centered as it is efficient and effective.

Reviewer #1 Response 8:
Thank you, we have added a sentence to the limitation paragraph on line 285 to state that we lack data on utilization. This now reads: Our study lacks data on family planning service utilization before and after the introduction of the tool into clinical practice, limiting our ability to evaluate the full impact of the tool.

We have included a review of the current tools and their impact on uptake in our discussion section additions that begin at line 209. Few evaluations of existing tools have included information on uptake. We also acknowledge that our future work should aim to quantify the effort required to introduce the use of the tool in the clinical setting.

Reviewer #2: The paper presents interesting findings related to the evaluation of the Family Planning Quotient and Reproductive Life Index (FPQ/RepLI) tool. These findings have practical implications discussed in the article. I have few comments/suggestions.

Reviewer #2 Comment 1:
Abstract
1. It would be helpful to provide some background information about the tool.
Reviewer #2 Response 1:
Thank you. We have edited the abstract to provide more background information. This now reads: Access to comprehensive and culturally appropriate reproductive life planning is essential to women’s health. Although many strategies and tools exist, few are designed for longitudinal use or provide visual aids. Our objective is to present the Family Planning Quotient (FPQ) and Reproductive Life Index (RepLI) (FPQ/RepLI) tool we created to facilitate the discussion of family planning and reproductive life goals between patients and providers and to provide a summary our evaluation of the tool. This tool was developed as a response to the Centers for Disease Control and Prevention’s charge of developing a tool that could help facilitate reproductive life planning by giving the patient a better understanding of their reproductive goals and trajectory.
Reviewer #2 Comment 2:
2. I suggest adding some information about the analyses used.
Reviewer #2 Response 2: We have added details regarding the summary of survey results to the “Main Outcome Measures” sections. Specifically: Survey responses were summarized using frequencies and percentages.

Reviewer #2 Comment 3:
Introduction
3. Why did you relate access to family planning services to only women's health without mentioning family health, couples…?
Reviewer #2 Response 3: Thank you for your comment. We have made edits to decrease the focus from women alone to women, their partners, and family health. We have added in “partners” on line 26 to be clear that the decisions in family planning also involve partners. In our introduction we mention family health, in the form of improved health outcomes for mother, child, and family (line 28). This section now reads: Access to family planning services is fundamental to human health. Engaging in quality family planning gives women and their partners the ability to plan their family size and space their births, resulting in improved health outcomes for mother, child, and family [1-3]. The critical need to prioritize the health of women, their children, and their families through family planning is evidenced by the multitude of Healthy People 2020 objectives related to family planning: 1) increase the proportion of publicly funded family planning clinics that offer the full range of FDA-approved methods of contraception onsite; 2) reduce the proportion of pregnancies conceived within 18 months of a previous birth; and 3) reduce pregnancies among adolescent females [4, 5].

Reviewer #2 Comment 4:
4. Line 44: the limitations of previous tools are not well-explained. I suggest adding more information about these tools and why they were not widely adopted.
Methods
Reviewer #2 Response 4: Thank you. We have added an additional sentence at line 44. This reads: Existing tools may not have been adopted because greater evaluation still has to be done to show efficacy and effectiveness in the clinical setting. There is not enough evidence that these existing tools have long term benefits to a woman’s reproductive health course. Additionally, these tools do not include visual presentations of the reproductive health plan and quantitative metric to guide patients and providers.

We have also added a review of many of the existing tools and their pros and cons, which begins at line 209.

Reviewer #2 Comment 5:
5. It is not clear how the tool was developed (for example the scientific evidence used to develop this tool).
Methods
Reviewer #2 Response 5: We have added details at line 71 regarding how we developed the tool. This now reads: The FPQ/RepLI tool was designed for use with family planning patients to help patients and providers visualize the patient’s reproductive goals, contraceptive history, and gestational history. It follows a simple algorithm to establish future goals and facilitate plan-making. This tool was developed by looking at the FPQ, which is the current standard of care. The algorithm for this tool is based on US MEC guidelines [14], and the graphing tool is modeled off of CDC standardized pediatric growth charts [15, 16].
Reviewer #2 Comment 6:
6. Line 113: I suggest adding examples of the statements used.

Conclusion

Reviewer #2 Response 6: This is now at line 138. We have added examples of the statements included in the evaluation survey. This now reads: Statements included: 1) “I had discussed my reproductive life plans with my doctor prior to today's visit. I had discussed my reproductive life plans with my doctor prior to today's visit.”; 2) “Before today's visit, my doctor knew how many children I wanted.”; and 3) “Overall, this tool is helpful and I would use it to track my reproductive goals.”

We also added an example of provider statements at line 155. This now reads: Provider statements included 1) This tool improved the counseling I provided to my patient about family planning and contraception; and 2) The tool helped me to understand my patient's reproductive plan.

Reviewer #2 Comment 7:
7. Lines 200-202: I suggest rephrasing this sentence.

Reviewer #2 Response 7: We have removed the sentence at line 200 (now line 317), and replaced it with the text beginning at line 310. This now reads: This tool was developed as a response to the charge of developing a tool that could help facilitate reproductive life planning on the patients end by giving the patient a better understanding of their reproductive goals and trajectory. The goal was to create a tool that utilizes the FPQ in a way that is more patient friendly and acts as a visual aid. The discussion that the RepLI facilitates covers aspects of partnership status, fertility, and sexual orientation, which are all key components of the reproductive life plan. While this tool was designed specifically for women, it has the potential to be modified for couples and men to use it as well.

Reviewer #3: This cross-sectional survey evaluated a novel clinical tool used by patients to chart their own reproductive goals over time. The survey (n=790), administered to women in a clinical setting, and to their providers, mainly assessed satisfaction with the tool. The manuscript describes the tool in great detail but provides little information about the survey administration and demographic outcomes. Data is presented in the abstract that is not provided in the manuscript text or tables. The authors overstate the implications of the tool, since they only assessed satisfaction, and not utility. Furthermore, they describe the tool as a comprehensive method for planning fertility goals, but do not take into account partnership status, fertility, or sexual orientation, which are significant limitations to the fulfillment of fertility goals for many people. I recommend major revisions to restructure the manuscript to be focused on the survey and data, with a brief description of the tool in the methods section.

Reviewer #3 Response 1: Thank you for your comment. We have corrected the discrepancy between the data presented in the abstract and in the text to ensure that all of the data presented in the abstract is also presented in the text in addition to the tables. We have added one line of text at line 187, which reads: Most patients (n=725, 91.9%) agreed that the tool was helpful. The goal of our manuscript is to describe the tool, so that I can be used in other clinical settings where needed. Therefore, we made significant edits based on the reviews and made significant efforts to describe our tool in the context of the pros and cons of other tools and strategies that exist in this field. We have added many details to our description of the methods of survey administration. We chose not to focus on the demographic data because our survey was anonymous, and instead present the demographics of our clinic in general which has consistently served the same medically underserved minority patients since its inception.