Author’s response to reviews

Title: Modeling the relationship between women's perceptions and future intention to use institutional maternity care in the Western Highlands of Guatemala

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Modeling the relationship between client perceptions and future intention to use institutional maternity care in the Western Highlands of Guatemala

Emily Peca; John Sandberg, PhD

Thank you for the opportunity to respond to the following reviewer comments.

REVIEWER 1

Background

1.) Throughout this section, I would make sure to clarify that you are discussing women's perceptions of their childbirth experiences and quality of care. Referencing just "client experiences" and "poor quality of care" is a bit vague.

To improve clarity, the term “client” was removed and women’s experiences is used instead. Also, in place of just referring to “poor quality of care” a more specific reference to institutional childbirth care is used. This was changed throughout the background.

Examples of these changes are found on pages four and five with the paragraphs starting with:

“To increase use of potentially lifesaving obstetric care…”

“The current study explores…”
2.) In the first paragraph of the Background section, I find the first and third sentences (page 4, lines 2-5 and 7-12) to be unclear. Are you referencing global statistics and trends, or ones that are specific to Latin America?

The reference was to global statistics and trends; this was clarified in the first paragraph:

In 2015, it was estimated that 303,000 women across the globe died due to complications associated with childbirth [1]. Despite average gains, regional estimates mask disparities in health outcomes within countries. Those at highest risk of not receiving adequate care are the geographically isolated, rural poor, residing in certain low- and middle- income countries [2]. Failure to address the needs of “left behind” populations will hinder the achievement of national and global maternal health targets and goals such as universal health coverage (UHC) and the Sustainable Development Goals (SDGs) [3]. Poor outcomes for mothers and babies can largely be prevented through access to emergency obstetric care (EmOC) provided by a skilled birth attendant operating in a sufficiently equipped health facility [4].

3.) In the second paragraph of the Background section, can you specify what you mean with client beliefs (page 4, line 29)? I think the term is a bit vague.

“Client beliefs” refers to the socio-cultural beliefs related to childbirth practices held by women and their families. This was clarified in the text as shown below:

To increase use of potentially lifesaving obstetric care we must understand why uptake of services is low. The answer is driven in part by the sociocultural beliefs related to childbirth practices, whether women and families have a perceived need for facility-based care, and if women (and those in their spheres of influence) determine care provided in health facilities is of sufficient or acceptable quality [5].

4.) I believe the typology of disrespect and abuse created by Bowser and Hill only has seven categories, whereas this paper lists eight. According to Bowser and Hill, "lack of privacy" is conceptualized as an aspect of non-confidential care. Also, instead of "unfair requests for payment," Bowser and Hill include "detention in facilities." I would include another citation to account for including unfair requests for payment separately, if you are going to include it.
The reviewer is correct. A subsequent paper expanded detention in facilities to a more inclusive term, “unfair requests for payment.” This was more useful in the context of Guatemala as detention in facilities for failure to pay is less common. This point was clarified and the citation was included in text as shown below:

This typology categorizes specific elements of care (as opposed to the overall experience) by areas identified in the literature as problematic e.g. non-consented care, non-confidential care (including lack of privacy), abandonment/neglect, non-dignified care (e.g. verbal abuse and poor communication), physical or sexual abuse, detention in health facilities for failure to pay (this category has since been expanded to “unfair requests for payment” [12]) and discrimination [13].

5.) Citations would be useful for the two statements on page 5, lines 29-34.

Citations were included and text clarified as shown below:

Another (less common) global measure of perceived healthcare quality is ‘willingness to recommend a facility’ to others [14]. ‘Willingness to recommend’ measures have utility in contexts where health service information is passed primarily through social networks. Some argue this is a more accurate measure of satisfaction and indication of future behavioral intentions [15]. Satisfaction and willingness to recommend have been shown to have varying degrees of correlation [14] [15]. Level of satisfaction may not necessarily translate into an equivalent willingness to recommend, suggesting the factors that influence each may be different [14]. Satisfaction measures may tap into an affective evaluation of care [8], while willingness to recommend, could indicate an openness or intention to return to a provider in the future [15]. Therefore, there is a case to be made for evaluating satisfaction and willingness to recommend as separate constructs in their association with institutional childbirth care [14].

Setting

1.) I believe this section and the paper as a whole would benefit from the inclusion of a brief summary that provides more information about the health system and health centers. For example, are maternal health services free? Are there ambulance services to help women arrive at the hospital? Who are the health providers at the facilities - i.e, are they doctors, midwives, medical students, etc? Do the study sites have high or low rates of antenatal care utilization? Are there systems and policies in place to insure intercultural care? More information about the services would be very useful to contextualize the findings about women's perceptions.
The setting section now includes two new paragraphs on historical marginalization of indigenous populations, the health system, along with policies related to intercultural care. Additionally, more detail on ANC and birth attendants are added. (See pages 7-8):

See excerpt from updated paragraphs below:

In Guatemala, indigenous populations have a history of social and economic marginalization associated with disparities in health and development indicators compared to non-indigenous groups [22]. Three and a half decades of civil war disproportionately devastated indigenous communities in the Western Highlands of Guatemala. Prior to the Peace Accords in 1996, nearly half the entire population had no access to health care [23] until the Government of Guatemala began contracting non-governmental organizations (NGOs) to manage rural health services through the “Extension de Cobertura” or extension of coverage program in 1997 [23]. In addition to increasing access, examples of attempts to address the health needs of indigenous populations include the establishment of the Traditional and Alternative Medicine Program in 2004, the creation of the Unit of Indigenous Populations’ Health Care and Interculturality (2009) [24] and the passage of the Ley de Maternidad Saludable (Healthy Motherhood Law) in 2010 [25]. The Healthy Motherhood Law includes respect for traditional and cultural practices of indigenous populations and reinforces public services should be free and accessible (geographically, culturally)—with particular emphasis on marginalized populations.

The proportion of women who give birth in health facilities has risen from about 50 to 65 percent nationally, but ranges from just over 90 percent in the capital to 36 percent in the predominantly rural Department of El Quiché, where a high concentration of indigenous populations reside [27]. El Quiché has the highest proportion of births attended by trained midwives (61 percent), with the remaining assisted by doctors (33 percent) and nurses (3 percent) [27]. Ninety-one percent of women report attending antenatal care services provided by a nurse or doctor [27].

2.) Similar to the previous comment, I think it would be helpful to include a sentence that provides a bit more information about home births. If there is information about whether home births are assisted by traditional birth attendants or family members, for example, the addition of that data would also help contextualize perceptions. Comadronas (TBAs) provide the majority of home births.

This was clarified in the text as shown below:

Language barriers, poor access to services, low literacy and historical marginalization reinforce home birth assisted by comadronas (traditional midwives) [28] [29] [30].
3.) You mention briefly that indigenous populations in Guatemala have been historically marginalized. I think it could be useful to provide a bit more information about that, as marginalization and structural discrimination could influence interactions with the health system. This is found within two new paragraphs on historical marginalization of indigenous populations, the health system, along with policies related to intercultural care found within the setting section (mentioned previously).

4.) Is cohort the correct term for referring to the two study groups? This does not seem like a longitudinal study.

The term cohort was replaced with “group” throughout.

Measures

1.) For the independent variable "health facility access," how did you define proximity?

Proximity of villages (e.g. proximate, intermediate, and remote) were determined by the local study team based on their experience traveling to villages within the three municipalities. In very rough terms, the proximate villages were about 10-15 minute vehicle ride from the municipal centers, the intermediate villages about 30 minutes and the remote villages were up to an hour plus ride by car with some villages lacking vehicle access (and in one case electricity). This information is now included in endnote iii and updated in the text as shown below:

The villages were purposively selected by the in-country study team to represent a diversity of residences at different proximities to the only public birthing facility in the municipality. All villages ranged from rural (just outside the municipal centers) to remote (roughly an hour plus car ride from municipal centers, including some villages with poor/no vehicle access). None of the study villages were located on the fringes of the municipal centers. iii

2.) Regarding the "perceptions of quality of care during last birth" (pages 11-12), I am curious about how you chose the disrespect and abuse items for questions for the facility and home birth groups. You noted that a more in-depth description will be shared in a separate publication, but can you elaborate a bit more in this publication? In particular, why did you choose to specify questions on non-dignified care, abandonment, and unfair requests for
payment, instead of asking about discrimination, which seems like it would be especially relevant for indigenous women? Is there existing evidence suggesting those forms of discrimination are prevalent in the study setting? If you did not assess discrimination because it is already known as a deterrent to care, I would state that directly.

These indicators were chosen based on the literature from Guatemala and thus considered most relevant in the context. Privacy/non-confidential care was omitted and other measures were omitted because some disrespect and abuse questions were viewed as too sensitive and were not included in the survey). Detention in health facilities was not seen as prevalent by the local data collection team so “unfair requests for payment” was used. We were not aware of a single valid and reliable quantitative measure of discrimination, but since it is a known deterrent to care, indicators of discrimination (being from a remote village, indigenous language (ethnicity) and education) are controlled for in the analyses. In other analyses, we assess if there is a higher likelihood of reporting disrespect and abuse among those who are indigenous, have no education etc. Further, all categories of disrespect and abuse are more extensively explored in a qualitative analysis, forthcoming.

The following is found in the text:

These indicators were chosen because based on the literature they were most relevant in the current context and because the measures were accepted by the local data collection team (some disrespect and abuse questions were viewed as too sensitive and were not included). Detention in health facilities was not seen as prevalent so “unfair requests for payment” was used. All categories of disrespect and abuse are more extensively explored in a qualitative analysis, forthcoming.

3.) In discussing maternal language in the "Controls" section (page 12, line 46-54), how did you code for women who were bilingual? I would imagine that there would be women who speak both Spanish and an indigenous language.

As noted above, the value of this variable is that it really proxies ethnicity and potentially those women most vulnerable to discrimination. Meaning, one could self-identify as indigenous, but not speak an indigenous language, which is potentially protective because they may be perceived as more “ladina” or modern by facility-based health providers. While it is true that someone who reports having an indigenous maternal language may also speak Spanish, it would be hard to validly assess bilingualism through a self-report question.
Analysis Strategy

1.) Can you discuss more about how you analyzed and used qualitative findings? It might be useful to state directly when thematic analysis was conducted. Were results of the qualitative analysis used to construct variables for quantitative analysis or to explain the results of quantitative analysis or both? Additionally, findings from the qualitative analysis seem to be scattered throughout various sections of the paper, which is a bit confusing. While you mention at the end of the paper that there is a separate analysis of qualitative findings which is not shown, it still might be useful to state that these findings will be mentioned throughout the paper or maybe create a new subsection in the "Results" section that briefly describes qualitative results.

This is now clarified and expanded upon in the methods and analysis strategy sections and a new section highlighting qualitative results is included.

Qualitative section in found in Methods:

Qualitative Data

Qualitative data were collected through open-ended responses asked after select survey questions related to the woman’s experience of care during last childbirth. The home birth group was asked to explain their satisfaction scores (100 percent supplied a response), and the facility group was asked to explain their affirmative responses to the single-item disrespect and abuse question (89 percent supplied a response). Additionally, both groups were asked to give insight into their response to the ‘willingness to recommend a health facility’ question (100 percent supplied a response).

The thematic analysis served to assist with the conceptual grounding and design of the statistical models, and for the purposes of contextualizing the quantitative results. An inductive thematic analysis was conducted by the lead author (fluent in Spanish) and validated by a team member from the study area who is fluent in both Spanish and Ixil. The open-ended data analysis included a full review of each response (in Spanish) and notation of emergent codes or sub-themes, separately by home and facility group. Then, the sub-themes were grouped according to salient higher order themes and summarized into key findings.

Found in the Results section:

Qualitative Findings

The data from the open-ended responses revealed that the ‘willingness to recommend’ construct represents a perceived need for facility-based care. However, this perceived need—and confidence in facility care—appears to largely apply to when obstetric emergencies arise and the
belief that facility personnel and infrastructure are best equipped to save lives in these situations. Therefore, willingness to recommend does not appear to constitute a general endorsement of obstetric health service delivery or access. The explanations for why a woman would recommend facility delivery are generally the same in both the home and facility birth groups. Both groups identify safety and clinical interventions in health facilities as benefits, and distance, cost and quality of care deterrents. Willingness to recommend is hypothesized to have a positive association with future intent to deliver in a health facility.

More than half of the home birth group said they would recommend a facility-based delivery to someone else. Only about a quarter of these women said they intend to give birth in a facility themselves, however. While the majority of the facility birth group feels comfortable recommending a facility birth to someone else, just less than a quarter of these women would intend to give birth in a facility next time. The qualitative data suggests facility births are viewed as a ‘safer’ necessity, but not a preference. One woman summed it up by saying, ‘whether you like it or not, the doctors are the only ones who can save our lives.’ A large group of women in the home birth group did not feel confident they knew enough about facility-based childbirth services to recommend it to someone else; and some women from both groups were reluctant to share an opinion with others for fear of being teased or scolded if something bad happened because of her recommendation. A substantial portion of the home birth group and those from the facility group that would not recommend a facility birth to someone else because of the poor care provided in health facilities, often insinuating care rendered at home was better. Finally, facility birth was viewed as more expensive than home birth and a few women indicated physical access to health facilities is a challenge.

The analysis of the open-ended satisfaction responses among the home birth group underscored an expected preference for home birth. However, the few average to very poor satisfaction ratings were largely accompanied by explanations of disrespect and abuse (largely abandonment/neglect, non-dignified care). The open-ended responses to the overall disrespect and abuse question among the facility birth group validated an understanding of the question as explanations highlighted instances of disrespect and abuse outlined by Bowser and Hill’s typology.

Discussion

1.) On page 22 lines 29-34, it is stated that "well-known" factors associated with uptake of services were included in the models, but it is unclear to which factors that comment is referring. I suggest emphasizing which are already known factors earlier in the paper.

They are now referred to as “key factors” factors are noted at the beginning of the paper related to the conceptual model:
“Building on this frame, the literature identifies key factors associated with where women give birth. These include socio-cultural factors [10] [18] [19]; geographic and economic access [10] [18] [19]; perceived need for facility-based delivery care [10]; previous childbirth experience [18]; and perceived quality of care in health institutions [18] [19].”

2.) Additionally at the end of the paragraph on page 22 (line 49-56), you mention that it would be useful to ask about whether women's birth position preferences were respected. I might mention that some researchers argue that not respecting participants preferences and traditions is a form of mistreatment itself.

Agreed. The lack of respectful practices and the presence of negative incidents constitute mistreatment. I made a small insertion to this point as shown below:

Additionally, controlling for whether women’s preferences were accommodated (i.e. presence or absence of respectful practices), such as being allowed to give birth in one’s preferred position and observe cultural practices as outlined in the Healthy Motherhood Law [25], may increase future intention to return to a health facility to give birth.

3.) A citation is needed on page 23, lines 1-4.

The citations are added and text updated as shown below:

For the home birth group, it could be useful to control for religion or spiritual beliefs [36] and measures of empowerment or autonomy (given the low status of women in Guatemalan society) [33] as those factors may influence a woman’s ability or intention to use institutional care.

4.) In addition to courtesy bias, I would discuss the possibility of recall bias.

This is updated in the text as shown below:

Another limitation may stem from recall bias when questioning women about experiences that may have occurred within a five-year time-frame. Such biases may be minimal, however, as women’s recollections of obstetric events even more than five years later were found to be accurate, though this may pertain to more tangible events rather than subjective feelings [37].
5.) You mention this briefly, but it could be useful to discuss a bit more about the possibility of low expectations for care and normalization of disrespect and abuse, which could be limitations to study results.

The following was included in the limitations/discussion section.

The normalization of disrespect and abuse combined with low expectations and relatively less experience with institutional childbirth care may have contributed to “under-reporting” of disrespect and abuse. This should be partially adjusted by the inclusion of education/literacy and wealth; moreover, we are concerned with subjective reports of women’s experiences as they are what drive care-seeking (as opposed to “objective” measures of disrespect and abuse or satisfaction). This was explored more extensively in another paper (forthcoming) on factors associated with reporting or perceiving disrespect and abuse.

Conclusions

1.) Overall, I think this section could be expanded, as the results identify various areas where more research is needed and where programmatic or policy initiatives might work to improve respectful care.

The conclusion was expanded to include measurement and policy and practice implications. See excerpt below:

This study illustrates that measurement of complex phenomenon like perceived quality (e.g. examples of disrespect and abuse) can be successfully conducted in geographically hard-to-reach places and executed in multiple languages (e.g. Spanish, Ixil) at a relatively low cost and in a short time period. The willingness to recommend a facility birth question could serve as an indicator of increasing demand in the event of an obstetric emergency and may foreshadow a shift in preferences. This is an example of another indicator that could be further tested more widely in this and other contexts. The use of qualitative data validated the understanding of the quantitative willingness to recommend survey question along with the overarching disrespect and abuse question. There is potential to adapt or build upon these indicators for future population-based or more routine data collection efforts. This could provide a source of data to monitor of the implementation of laws, policies and programs. For example, the elements related to mistreatment or respectful care outlined by the Healthy Motherhood Law and other existing intercultural care guidelines from Guatemala. At the health facility-level, screening for past dissatisfaction and negative experiences as part of the antenatal history to address demand issues could be incorporated as a strategy for increasing facility care. Feedback from clients and
continued measurement of specific negative experiences (instead of just satisfaction) can inform efforts required to increase uptake and quality of care.

2.) Also, you could discuss more about the utility of the instrument for future studies.

This is included in the conclusion, see above.

Reviewer 2

Quality of English/terms -

--The manuscript would benefit from editing for clarity. Some examples of sentences that should be rewritten are: "Increasing utilization of EmOC relies on understanding why uptake of services is low" (p. 4), "The analysis draws on quantitative and qualitative community-based survey data from the Western Highlands of Guatemala to conduct two separate analyses" (p. 5).

The manuscript was edited for clarity throughout. Here are how the specific examples highlighted by the reviewer were edited:

To increase use of potentially lifesaving obstetric care we must understand why uptake of services is low.

The present study draws on quantitative and qualitative community-based survey data from the Western Highlands of Guatemala. This paper is one of the first attempts to model women’s experiences and perceptions of institutional childbirth care on future care-seeking intentions.

--Instead of using the concept of "evaluation" of care by study participants, I suggest to use a different term, given that "evaluation" usually implies a systematic or formal process that does not seem to apply to your study participants.

This was modified and perceptions of care quality was used when appropriate.

--It is not clear nor specific to write "developing country context." If you refer to low income countries according to the World Bank definitions, please say so. Otherwise, please explain.
This was changed to Ethiopia and Bangladesh, the specific contexts in which the relevant studies cited were undertaken.

--Please use the active voice. The use of the passive voice does not allow to identify who did what. For example, when you write in p. 9 "A census and accompanying household survey were conducted in 15 villages in Ixil", it is not clear if the authors were involved in the survey.

The text was revised to reflect active voice and references to who did what are included in the methods section to enhance clarity. See examples below:

Data collectors were women from Ixil possessing similar cultural and linguistic characteristics as the study respondents, but were not from the study villages. The data collectors were hired by the local NGO named COTONEB (Cooperativa Todos Somos Nebajenses), which (at the time) managed health services in Ixil as part of the government’s Extension of Services Program. Data collectors were trained by survey experts contracted by University Research Co., LLC based in Guatemala.

An inductive thematic analysis was conducted by the lead author (fluent in Spanish) and validated by a team member from the study area who is fluent in both Spanish and Ixil.

--Your use of "client" to refer to study participants is not justified. Why are they clients and of whom, particularly when referring to women who gave birth at home? How about if you refer to them as women or study participants?

Clients was initially used to refer to patients who sought institutional childbirth care. To avoid confusion, “clients” was removed from the text (and largely replaced with women) except for two instances: a general reference to “client feedback” and in the list of key words.

--In p. 8 you wrote "non-indigenous populations (referred to as ladinos)", but in Guatemala there are other ethnic groups in addition to indigenous and ladinos.

No Garifunas or Xinkas were found in the study villages. Similar to the rest of the Western Highlands, the study population was landina or from one of three Mayan groups: Ixil, some K’iche, and minority Kanjobal (noted in the description of indigenous maternal languages listed in the text shown below).
Self-reported ethnicity and maternal language are very highly correlated, with 94 percent identifying as indigenous (compared to ladina), but slightly fewer (84 percent) reported an indigenous maternal language (majority Ixil, some K’iche, and minority Kanjobal).

--Please define "remote" (p. 9).

As discussed in a response to reviewer 1, proximity of villages (e.g. proximate, intermediate, and remote) were determined by the local study team based on their experience traveling to villages within the three municipalities. In very rough terms, the proximate villages were about 10-15 minute vehicle ride from the municipal centers, the intermediate villages about 30 minutes and the remote villages were up to an hour plus ride by car with some villages lacking vehicle access (and in one case electricity). This information is now included in an endnote and updated in the text.

Structure

-Please follow the structure outlined by the journal. There are several subheadings that should be merged with other sections or that are out of order.

This was corrected.

Conceptual framework

- You mention in p. 7 that "A conceptual model was developed to underpin the analysis and guide interpretation of results." But a conceptual framework is also the basis to develop the study methodology. Therefore, your conceptual framework should appear before your methods and should help justify, for example, how you have established the key independent variables that you list in p. 6. Without a justification, your key independent variables seem random or superficial.

The discussion of the conceptual framework was moved up to appear before the methods section as suggested by the reviewer.

- The conceptual framework should also include the "structural and cultural factors" that you mention in p. 6. The examples of the cultural and structural factors are now included in the text description as shown below:
Starting on the left-hand side of the figure, intention to use facility-based care is formed by structural and cultural factors (ethnicity, municipality), and individual characteristics (education, age, parity, c-section); these shape perceived need for institutional childbirth, perceptions of maternity care quality, and access to skilled care.

- In p 7, when you say "And finally, since intention is the outcome of interest, the conceptual model is influenced by the theory of reasoned action and theory of planned behavior [19]…", please make it more clear that you have used this theory to build your framework. The conceptual model is concordant with the theory of reasoned action and theory of planned behavior. This is updated in the text as shown below.

The conceptual model is concordant with the theory of reasoned action and theory of planned behavior [20], which posit intention to do something is a function of attitudes (behavioral beliefs, evaluation of behavioral outcomes), subjective norms (normative beliefs and motivation to comply) and control over decision-making (control beliefs and perceived power) [21].

- In p. 7, you mention that Figure 1 is "… operationalized by variables from the dataset". This is very confusing. Do you mean that you used the study data to develop your conceptual framework, when it should have been the opposite? This is clarified in the text and now reads:

Figure 1 illustrates the Conceptual Model of Future Intention to Deliver in a Facility, including the variables from the dataset used to operationalize the conceptual model.

The conceptual model was developed in advance of data analysis and reflects the authors’ hypothesis that the combination of these factors contributes to future intention to deliver in a health facility.

- In p. 7, when you say "The combination of these factors contributes to future intention to deliver in a health facility", if this your hypothesis or are you anticipating your findings?

This was our hypothesis, see revised text referenced above.

Methodology
- In the background paragraph of the "Plain English Summary", you seem to take for granted the hypothesis that you test in your study, which is confusing.

This was re-worked and clarified as shown below:

Women in low- and middle-income countries are increasingly giving birth with the help of skilled workers in health facilities. However, large proportions of women and their families avoid institutional childbirth leaving them at risk when complications arise. A frequently cited reason for giving birth at home is negative opinions of care provided in health facilities. Better understanding how women and families view childbirth care experiences can provide insight into how to improve service delivery and increase demand.

- In your "Methods" section you need to add your methods for data collection and they should go before explaining the methods for data analysis.

   The setting and data collection sections were moved ahead of discussion of data analysis.

- When you refer to your two groups of study participants, your use of "cohorts" is confusing because it implies that you're following them over time, which you do not mention in your manuscript.

   The term home birth group and facility birth groups is now used instead of cohort.

- In p. 8, the first two sentences of the first paragraph belong to the methods section. Please rephrase the third sentence so that it does not seem like interpretation of findings.

   The first two sentences were moved to the methods section and revisions were made to ensure interpretation of findings and hypotheses are not conflated.

- You have studied women who gave birth within the last five years. Have you considered taking into account any recall bias by comparing women who gave birth in the past few months to others?

   This is a good idea, but due to the small sample and limited number of cases, this would not be possible in this case.
- In p. 9, you mention that women completed questionnaires. Please provide more information about the questionnaires. In which language or languages where they written? Anyone administered them or where women asked to complete them on their own? How did you manage potential bias if women had to complete them on their own?

This is clarified in the enhanced description of data collection (see excerpt below).

The quantitative and qualitative survey data were collected orally by enumerators in Spanish or Ixil (the predominantly spoken indigenous language) depending on respondent preference.

- In p. 9, when you mention "524 observations," what do you mean by observations? If you refer to questionnaires, please say so. Observations require a different methodology.

This was changed to: The final analytic sample for the home birth group was 524 and 130 for the facility birth group.

- In p. 10, "Open-ended survey responses followed quantitative questions related to client perceptions" should go in the methods section.

This was moved to the methods section, which now has a portion devoted just to qualitative methods.

Sources

- In page 4, when you write "Those at highest risk of not receiving adequate care are the geographically isolated, rural poor, residing in certain low- and middle income countries [2]," you are not being specific to Latin America. I suggest this reference for Latin America http://www.apromiserenewedamericas.org/e/publication/health-equity-report-2016-full/ (I disclaim that I was the lead author of the report) and the 2017 Guatemala DHS to bring even more specificity.

The introduction was clarified so that it speaks to the situation globally. The reference shared was incorporated into the description of the setting leading into the Guatemala context.
--In page 5, these two sentences need references: "Satisfaction and willingness to recommend have been shown to have varying degrees of correlation. However, high satisfaction with a hospital does not always translate into high willingness to recommend."

Citations have been added as shown below:

Satisfaction and willingness to recommend have been shown to have varying degrees of correlation [14] [15]. Level of satisfaction may not necessarily translate into an equivalent willingness to recommend, suggesting the factors that influence each may be different [14]. Satisfaction measures may tap into an affective evaluation of care [8], while willingness to recommend, could indicate an openness or intention to return to a provider in the future [15]. Therefore, there is a case to be made for evaluating satisfaction and willingness to recommend as separate constructs in their association with institutional childbirth care [14].

- In p. 8, you wrote "Guatemala has one of the highest maternal mortality ratios in Latin America, second only to Bolivia [1]." First, there is a newer version of your reference. Second, Guatemala has the 12th worse MMR in Latin America and the Caribbean and the 10th worse if you only consider Latin America.

Thank you for catching this as the 2015 estimates were done using a different approach and are quite different from the estimates in the 2013 report. The statistics referenced in the paper are corrected in the text.

- Your reference 21 is incomplete.

This reference is now complete.

--In p. 8, you wrote "In Guatemala, the low demand for institutional care (particularly among rural indigenous populations) stems from a lack of perceived need for and acceptability of institutional childbirth care [26]". Please note that you are making a statement that is based on a single study published in 2003. Additionally, there are several recent articles based on studies conducted on this topic in Guatemala that you have not included in your review.

Citations are added to reflected most recent estimates and literature.

In Guatemala, the low demand for institutional care (particularly among rural indigenous populations) stems from a lack of perceived need for and acceptability of institutional childbirth care quality [31] [32] [33] [34].
Results

- After revising the previous sections, you should rewrite the findings and interpretation. Please make sure you do not conflate the hypotheses with the results.

The extraneous references and analysis included in the presentation of results was removed. References to hypotheses are now distinct from results. Further, all analysis is now only in the discussion/conclusion sections.