Reviewer’s report

Title: Extent of induced abortions and occurrence of complications in Kinshasa, Democratic Republic of the Congo

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Reviewer: Brooke Levandowski

Reviewer's report:

This is a very interesting article, and I agree that it would be important to share this information. However, I have concerns with the methodology, sampling, and calculation of abortion incidence.

Major comments:

Need to explain confidante method a bit more, including findings from this methodology in the introduction.

The use of the confidante method is unclear, as it is not described in the methods section. Did the authors use this exact methodology or a part of the methodology? Overall, the methodology section lacks enough clarity for another researcher to replicate these methods.

Pg 6, line 1: Isn't the sample both women who answered the questionnaire plus the additional women they spoke about?

Sampling section: It's unclear how authors used both respondent-driven sampling and the random sampling strategy, as you would typically use one or the other. The line 19, pg 6: "Respondents thus generated the sample without being a part of it" is confusing, as is the next line about respondents and the sample being the same group of women of childbearing age.

Cite the sample size calculation formula.

Pg 6, line 47 Sentence beginning with "This sample " is unclear. "The sample size" was calculated, not "the sample". In addition, the rest of the sentence is unclear.

What is a health zone? Need more detail on the stratum that were created. Where did the demographic weights originate? What is a parcel survey? The first two paragraphs on pg 7 are unclear.

For the multivariate analyses, why were only variables that were significant in the bivariate analyses included in the final model? Typically some variables would be included a priori, such
as age, income, and residence, as plenty of African abortion studies have found the majority of unsafe abortion burden among young, poor, rural women.

How was abortion incidence calculated?

How were induced abortions defined? What steps were taken to determine the difference between induced abortion and miscarriage, especially for women the confidants were reporting on?

The data is reported for the year 2015. When was the data collected? Need to add the detail that women were only asked about induced abortions that occurred in 2015, and not ever had an induced abortion.

The discussion section posits that DRC is different from other countries but it's unclear what the authors are saying here. In the DRC study, 50% of induced abortions were reported to be self-induced. However, since this is a confidante study, the method of induction can only be truly "known" for the women who reported on themselves, if they decided to be truthful. There is more reporting error bias for those women reported on by the interviewees, as the friend or sister may not have told the interviewee the truth. This social desirability bias exists in all the other studies as well (citations 23-26). Also, citations 23-26 appear to only refer to studies done in one facility, not country wide studies, which indicate who performed the induced abortions in those facilities, not for the entire country, as implied by the sentence. The truth is that we will never really know the reality of induced abortions in any setting, as long as abortion remains so stigmatized, as well as illegal, in many settings.

The discussion lacks a full discussion of the limitations of this study and this methodology.

The conclusion lacks clear recommendations. It's unclear what health package the authors are referring to, and what could be done about this at the country level.

Minor comments:

Abstract: Suggest highlighting a different result than the 12% who had genital trauma, uterine perforation, or intestinal necrosis. There were only 2 women in that category, and 2 women in the infection category as well. It's not clear why you chose that complication over infection which was just as common, and over haemorrhage, since that was the most common. In the conclusion section, it's not clear if you are recommending the prevention of induced abortion or of complications due to induced abortion.

Keywords: not clear why "extent" was chosen
Background:

Do you mean psychiatric sequelae instead of psychic?

Need to cite Abortion Incidence Complications Methodology by Guttmacher and Susheela Singh

Methods:

Ethical Considerations: Add university name. The last line about the confidentiality of women is confusing.

Was excessive alcohol use asked about the woman "ever" or "only in 2015"?

Add detail explaining what the residence categories mean.

What does "no precision" category mean in the type of solicited health facility if complication variable?

Did you collect how many women died?

Results:

Add the total number of women interviewed, the mean number of women who were reported about per interviewee, and the % of women who refused to be interviewed.

Add standard deviation to the median age.

Suggest combining Table 1 and Table 3, since they are about the same group of women. Also, suggest dividing out to see the information about induced abortions for the women who described their own abortion and for the women who were described by the interviewees, along with a total column, to understand the full picture of the data.

How was the 95% CI calculated on the induced abortion %?

For n', what are the "sample subgroups"?

Table 3: is tradipratician a traditional healer? For method used, could they have used more than one method? If yes, how was this question asked? For "high doses of drugs" does this mean oral administration? How was this question asked, as open ended or were these the choices given to women?
For table 5, women could have had >1 complication. How was this addressed? How would a lay women know what uterine perforations or intestinal necrosis are, let alone choose those responses?

Discussion: The first sentence of the results, about the abortion rate, belongs in the results section. What is the confidence interval around the abortion rate?

Add more information about the interventions that have been implemented in family planning setting.

Pg 10, line 9: It's not clear if the % for Malawi, Tanzania, and Rwanda are for rates of induced abortion or rates of modern contraception use.

Pg 11: sentence about Dragoman's work is unclear.

Pg 11, line 14: unclear what is meant about the upstream causes of abortion.

Pg 11: suggest using the phrase unsafe abortion (as defined by WHO) instead of poor practice

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