PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	HIV risk and Pre-exposure Prophylaxis interest among female bar workers in Dar es Salaam: a cross-sectional survey
AUTHORS	Harling, Guy; Muya, Aisa; Ortblad, Katrina; Mashasi, Irene; Dambach, Peter; Ulenga, Nzovu; Barnhart, Dale; Mboggo, Eric; Oldenburg, Catherine; Bärnighausen, Till; Spiegelman, Donna

VERSION 1 - REVIEW

REVIEWER	Roman Shrestha University of Connecticut USA
REVIEW RETURNED	16-Jun-2018

GENERAL COMMENTS	This paper addresses a very important area of research. Given the effectiveness of PrEP, its use in high risk populations like FBW is critically important to stemming the HIV epidemic in the global context. Specifically, the authors formatively explored HIV risk behaviors and interest in PrEP use amongst this high risk group. It's well-written overall and seems like it would be a good fit for BMJ Open given its population focus. I include the following suggestions for revisions: - Introduction: Please add additional literature to let the reader know what we already know about FSW/SW in relation to PrEP. - Also, the contextual information on PrEP (availability/uptake/willingness) within the country. - I would recommend providing information on available EBIs designed specifically for this group and why biomedical intervention is an important public health initiative. - I would also go into greater detail on how the authors developed/adapted and report psychometric properties of some of the survey measures. Also, I'd recommend authors to provide more detailed information on the measures used: it's unclear as to how interest in PrEP use was assessed (Likert scale vs Yes/No?) - If Likert scale: I'm curious as to why/how Likert scale responses were dichotomized. I also didn't quite understand the chosen dichotomous split points. I think that dichotomizing the data could have impacted your results and worry about the accuracy of the results. - While I appreciate the descriptive nature of the study which provides basic understanding of the interest in PrEP use, additional analyses would be informative and would enable this paper to make a more substantial contribution. - Although mentioned as one of the limitations, the weaknesses related to the small sample size is substantial to overall findings of the study. - Was participants' HIV status verified by test or based on self-report? This is important to clarify.

	- It's unclear as to the context of how PrEP interest question was asked: Were the participants presented with brief info on PrEP before assessing their interest in PrEP use? If not, I wonder how they were able to decide whether or not they were interested in PrEP use. This is a very important information that lacks clarity. - I would not recommend stating as "predictors of PrEP interest" because of the study design and the analytical approach utilized. - The concept of a PrEP care continuum, and how there may be disparities for FBW is something that is missing from the discussion, and needs to be addressed in this context. - It would be helpful if the authors could provide some details as to how future interventions could be tailored in this specific settings based on the findings.

REVIEWER	Jeb Jones Emory University, United States of America
REVIEW RETURNED	23-Oct-2018

GENERAL COMMENTS	This is a well-written study of a specific risk population (FBW) within a district of Dar es Salaam. The authors conducted a cross-sectional study of a random sample of FBW from a random sample of bars. Awareness, acceptability, and preferences for mode of administration of PrEP are described. A few comments are outlined below by section. Abstract The abbreviation LAI is used but not defined (and not used in the body of the paper). Introduction It is not clear why sex workers are sometimes referred to as SW and other times as FSW. There is also a large amount of background on FSW, but the focus of this paper is FBW. Results Why are results presented for women who have sex with bar clients for money but not for the women who do not? It seems like a meaningful comparison and the absence of the results for FBW with non-bar clients is notable. The correlation for interest in daily-pill PrEP and long-acting injectable PrEP is described as significant but is rather weak in magnitude. There were two statistically significant results among the comparisons conducted for predictors of PrEP interest. However, this analysis included an enormous number of statistical comparisons and some mention of correction for the number of tests should be noted if these results are reported as statistically significant. Figure A: the legend is mislabeled. “Somewhat interested” is represented twice.

	Discussion Again, some discussion of differences (or lack thereof) between FBW who have sex with bar clients and those who have sex with non-bar clients seems warranted given that this distinction is highlighted in the results.

REVIEWER	James McMahon University of Rochester Medical Center United States
REVIEW RETURNED	08-Nov-2018

GENERAL COMMENTS	This study is the first to describe the knowledge and acceptability of PrEP among female bar workers (FBW) in East Africa, an understudied group with high prevalence and risk of HIV. The introduction is comprehensive and outlines the nature of the health problem to be addressed. However, it would be informative for the reader to know the approximate size of the FBW population, and thus the potential impact of PrEP implementation in this group on the larger HIV epidemic. The methods used are well-conceived and appropriate for the research questions. Although underpowered to assess predictors of PrEP interest, the descriptive results alone are informative and indicate the need for further research in this group. The authors note the small sample size and lack of power as a study limitation, but do not properly interpret their results accordingly. For example, the p-value >.05 between willingness to consent for an HIV test and interest in daily-pill PrEP does not indicate that there “was not an association” between these variables. If effect sizes and p-values had been accompanied by 95% confidence intervals (CIs), it would be clear that the association could be negative, positive or nil, indicating an inconclusive result, not a negative result. Similarly, no definitive conclusions can be drawn about the other statistically non-significant results reported in Table 2. Presumably, with a larger sample and sufficient power, the study results could have shifted from inconclusive to a definitive effect (i.e., 95% CIs not encompassing the nil value) for more tests. This is a classic error in interpreting p-values--interpreting p>.05 as having no effect—and the language in the results section should be modified. It would also be informative to present the 95% CIs for some of the descriptive results. Ostensibly, the authors took care in drawing a pseudo random sample in order to make some inferences about the larger population of FBW, and CIs would give the reader a plausible range for the true estimate. The Discussion is appropriate and does not go beyond the results of the study. Despite the weaknesses noted above, the findings from this study are important and help advance our knowledge of, the need for, and acceptability of HIV prevention options in this understudied and high-risk group of women in East Africa.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1. Roman Shrestha

This paper addresses a very important area of research. Given the effectiveness of PrEP, its use in high risk populations like FBW is critically important to stemming the HIV epidemic in the global context. Specifically, the authors formatively explored HIV risk behaviors and interest in PrEP use amongst this high risk group. It's well-written overall and seems like it would be a good fit for BMJ Open given its population focus. I include the following suggestions for revisions:

1. Introduction: Please add additional literature to let the reader know what we already know about FSW/SW in relation to PrEP.

We have now added text on existing FSW PrEP research in the Introduction:

Pre-exposure prophylaxis (PrEP) is an important HIV prevention tool, proven to substantially prevent HIV acquisition when taken as prescribed.14 15 There are several planned and ongoing PrEP demonstration projects in Africa.16 17 However, previous PrEP studies have found variable adherence both in general.18 and in FSW populations. Few PrEP trials have explicitly included FSW in their inclusion criteria – although some included proportions of unmarried women with multiple partners who reported histories of transactional sex 19 – and to our knowledge none have targeted FBW. Evidence from FSW from South Africa,20 Kenya 21 and Zimbabwe 22 points to variable levels of uptake but rapidly declining retention of FSW on daily pill-based PrEP.

And referred to it again in the Discussion:

Awareness of PrEP for HIV prevention was very low but interest in PrEP, particularly for daily pills and long-acting injectables, was high. Both these modalities are likely to be recognizable to women in Tanzania since family planning options have similar modes of delivery, e.g. daily contraceptive pills, injectable Depo-Provera and implanted Nur-Isterate. Greater interest in long-acting injectables may also reflect the difficulties of taking daily pills for these working women, and of applying gels prior to sex when timing of sex acts is unpredictable and sometimes not chosen by them. These findings thus resonate with those of earlier work in other sub-Saharan African settings with FSW, which found limited retention on daily pillbased PrEP.20-22

2. Also, the contextual information on PrEP (availability/uptake/willingness) within the country.

We have added a paragraph to the Introduction specifically covering PrEP in Tanzania. At the time of the study, and still today, PrEP is not generally available with only data from a small number of demonstration projects having been presented:

At the time of this study. PrEP was not available anywhere within Tanzania. Two assessments of interest and barriers to PrEP amongst adolescent girls and young women conducted in 2017 and found high interest but concerns around cost, side-effects and stigma.33 34 As part of one of these studies, healthcare providers were largely supportive of PrEP provision, although they were concerned about behavioural disinhibition and work overload.35 Evidence specifically on FSW is not currently available.

3. I would recommend providing information on available EBIs designed specifically for this group and why biomedical intervention is an important public health initiative.

We appreciate the reviewer's important comment and have added a paragraph outlining existing EBIs for FSW, and that evidence specifically for FBWs is lacking:

There is substantial evidence – both direct and indirect – for structural, behavioural and biomedical interventions that should be able to reduce HIV acquisition and transmission among FSW.16 Structural approaches include community mobilization, advocacy and social and economic empowerment alongside anti-discrimination policies including legal protection. Behavioural approaches include peer and community-based behaviour change, condom provision. However, many of these interventions are highly context-specific and have proven difficult to implement consistently.17 Biomedical interventions may be more easily implemented in a wide range of settings. Proven biomedical approaches for FSW include FSW-friendly provision of services such as voluntary testing, linkage to care and antiretroviral treatment – including prevention of mother-to-child transmission and postexposure prophylaxis. There is no evidence at present as to how FSW-applicable interventions affect FBWs.

4. I would also go into greater detail on how the authors developed/adapted and report psychometric properties of some of the survey measures.

Most of the measures we considered in this work are generally either binary (yes/no) or continuous (count) data – with the exception of the Likert scales now described in more detail

below – and thus no greater detail can be provided. We believe that the reviewer may have been referring to the PHQ-9, PTSD and generalized social support scales we mentioned being present in the questionnaire. Based on this we have added more text to the Methods on these scales:

The CAPI covered several topics, including: women's socio-demographics; their work history; their sexual history, including past STI diagnoses and HIV testing; their knowledge of HIV prevention modalities; substance use; and psychological wellbeing (depression, posttraumatic stress disorder (PTSD) and generalized social support). For depression we asked the PHQ-9 scale, which has previously been used with Tanzanian women living with HIV.38 We assessed PTSD using the PTSD-IV screening tool. Generalized social support was measured using a 10-item version of the Duke-UNC Functional Social Support Questionnaire (FSSQ), adapted to include instrumental support and validated for Tanzanian women.39 Potential responses to each FSSQ question were: "as much as I would like" (4); "less than I would like" (3); "much less than I would like" (2); and "never" (1). A mean score <3 is considered as 'low social support'.

And then reported on their properties in the Results:

Psychometric properties for the wellbeing measures were acceptable: Cronbach's alpha was 0.71 for PHQ-9, 0.71 for the PTSD-IV and 0.85 for FSSQ. Based on standard score summation, 20% of respondents showed depressive symptoms, while 21% affirmed 3 or 4 PTSD-IV questions and thus screened positive for possible PTSD, and 58% had a mean FSSQ score <3 and thus had low social support.

And finally included them in our PrEP analysis Results (see Table 2).

Also, I'd recommend authors to provide more detailed information on the measures used: it's unclear as to how interest in PrEP use was assessed (Likert scale vs Yes/No?).

We used a five-point Likert scale to evaluate interest in PrEP, and we have now clarified this in the Methods:

Respondents were asked if they had ever heard of PrEP or a daily pill to prevent HIV infection. They were then asked how interested they were in taking PrEP as: (i) a daily pill; (ii) an injection every 3 months; (iii) a pericoital vaginal gel; (iv) a monthly vaginal ring. For each PrEP modality interest was gauged on a five-point scale: very interested; somewhat

interested; neutral; somewhat uninterested; very uninterested. Finally, they were asked to rank the four modalities from most to least preferred.

If Likert scale: I'm curious as to why/how Likert scale responses were dichotomized. I also didn't quite understand the chosen dichotomous split points. I think that dichotomizing the data could have impacted your results and worry about the accuracy of the results.

We dichotomized our Likert scale to separate those showing some interest in each PrEP modality from those not showing active interest, since we wanted to understand how active interest in PrEP was patterned by HIV-risk related factors. Such dichotomization may have lowered our power to see significant associations, however since we used a bipolar scaling and dichotomized intentionally at the inflection point, we believe that our results are an accurate reflection of the question posed: what factors are associated with interest in PrEP. We have now clarified our approach in our analytic methods section too:

In this analysis, we provide descriptive statistics for various potential risk and protective factors for HIV acquisition. We then assess bivariate associations between these factors and interest in various modalities of PrEP, using χ^2 tests for binary variables and Kruskal-Wallis tests for continuous and ordinal variables. We dichotomized PrEP interest as either positive (very interested or somewhat interested) or not (neutral, somewhat uninterested or very uninterested), in order to evaluate which factors were and were not associated with active interest in PrEP.

5. While I appreciate the descriptive nature of the study which provides basic understanding of the interest in PrEP use, additional analyses would be informative and would enable this paper to make a more substantial contribution.

We would very much like to provide a more detailed analysis of factors associated with PrEP in this population. However, given the limited sample size, conducting more complex analyses would not be appropriate and would be likely to lead to ‘overfitting’ of the data points. We have now added a sentence to note this limitation in the Discussion:

Furthermore, our small sample size means that we cannot rule out some substantial but not significant associations in fact reflecting true associations that this study lacks the power to confirm. Further analysis with additional FBWs would allow the separation of truly null associations from underpowered analyses. Similarly, we are not able to conduct

multivariable analysis in this dataset, something that would be important in follow-up work.

6. Although mentioned as one of the limitations, the weaknesses related to the small sample size is substantial to overall findings of the study.

We agree with the reviewer that the small sample size is a substantive limitation and we have discussed it in several places. In response to this and other reviewer comments, we have now added text to highlight further how this small sample size affects interpretation of the results:

This study provides a first insight into the HIV serostatus and PrEP interest of FBW in DSM. While the sample in this study is small, it was a random sample drawn from a full enumeration of all licensed premises (n>2500) in Kinondoni district, an area with a population of over 1,750,000 inhabitants in 2012,38 and then a full enumeration of all FBW working in each bar at the time of first visit. Nevertheless, it is possible that the sample of women drawn differs on some characteristics from other FBW in Kinondoni. Furthermore, our small sample size means that we cannot rule out some substantial but not significant associations in fact reflecting true associations that this study lacks the power to confirm. Further analysis with additional FBWs would allow the separation of truly null associations from underpowered analyses.

7. Was participants' HIV status verified by test or based on self-report? This is important to clarify.

Participants' HIV status was verified by tests. PrEP questions were not asked to the three individuals who self-reported previously testing HIV positive, although all of these individuals did indeed test positive for HIV subsequently. We now clarify in the Methods:

HIV status was measured based on HIV test result.

8. It's unclear as to the context of how PrEP interest question was asked: Were the participants presented with brief info on PrEP before assessing their interest in PrEP use? If not, I wonder how they were able to decide whether or not they were interested in PrEP use. This is a very important information that lacks clarity.

As the reviewer surmises, a brief description of each PrEP modality was presented to the respondents. We have now clarified this in the Methods, and added the descriptions and questions on PrEP as supplementary materials:

Respondents were asked if they had ever heard of PrEP or a daily pill to prevent HIV

infection. Then, following a brief description of each modality, they They were then asked how interested they were in taking PrEP as: (i) a daily pill; (ii) an injection every 3 months; (iii) a pericoital vaginal gel; (iv) a monthly vaginal ring. For each PrEP modality interest was gauged on a five-point scale: very interested; somewhat interested; neutral; somewhat uninterested; very uninterested. Finally, they were asked to rank the four modalities from most to least preferred. All PrEP questions are presented in Supplementary Material 1.

9. I would not recommend stating as "predictors of PrEP interest" because of the study design and the analytical approach utilized.

We thank the reviewer for noticing this and have replaced this title with “Correlates of PrEP interest”

10. The concept of a PrEP care continuum, and how there may be disparities for FBW is something that is missing from the discussion, and needs to be addressed in this context.

We thank the author for noting this gap in our Discussion. We have now addressed the PrEP care continuum, and potential barriers for FBW, clearly in our Discussion:

This study highlights that FBW in Dar are at substantial risk for HIV acquisition, that many are aware that they are at substantial risk and following discussion many are interested PrEP. However, this is only the first stage of the PrEP care continuum,40 FBW will additionally need assistance in accessing PrEP and remaining in care. Both of these stages are likely to be hampered by the stigma and fluidity of life situation that working as an FBW can bring. Successful PrEP strategies for FBW will require tailored PrEP programming for such women, mostly likely including clinical care provided outside standard clinics. One important option here might be workplace-based service provision – since the bar location forms a multi-year basis for work for the majority of respondents.

11. It would be helpful if the authors could provide some details as to how future interventions could be tailored in this specific setting based on the findings.

We have now added some initial ideas about the importance of leveraging the bar location as a place for the provision of future PrEP interventions in the Discussion:

This study highlights that FBW in Dar are at substantial risk for HIV acquisition, that many are aware that they are at substantial risk and following discussion many are interested PrEP. However, this is only the first stage of the PrEP care continuum,40 FBW will additionally need

assistance in accessing PrEP and remaining in care. Both of these stages are likely to be hampered by the stigma and fluidity of life situation that working as an FBW can bring. Successful PrEP strategies for FBW will require tailored PrEP programming for such women, mostly likely including clinical care provided outside standard clinics. One important option here might be workplace-based service provision – since the bar location forms a multi-year basis for work for the majority of respondents.

Reviewer: 2. Jeb Jones

This is a well-written study of a specific risk population (FBW) within a district of Dar es Salaam. The authors conducted a cross-sectional study of a random sample of FBW from a random sample of bars. Awareness, acceptability, and preferences for mode of administration of PrEP are described. A few comments are outlined below by section.

1. Abstract. The abbreviation LAI is used but not defined (and not used in the body of the paper).

We thank the reviewer for noting this discrepancy; we have replaced 'LAI' with 'long-acting injectable' in the Abstract:

However, 54% were somewhat/very interested in daily-pill PrEP and 79% were somewhat/very interested in LAI long-acting injectable PrEP. When asked to rank modalities, LAI long-acting injectable PrEP was the most-preferred.

2. Introduction. It is not clear why sex workers are sometimes referred to as SW and other times as FSW.

We intended only to use the acronym 'SW' when referring to sex workers of either gender, and FSW when referring specifically to female ones. To avoid confusion, we have now replaced 'SW' with 'sex workers' throughout, leaving FSW to refer specifically to female sex workers.

3. There is also a large amount of background on FSW, but the focus of this paper is FBW.

We agree that there is more background on FSW than FBW, however, the existing literature on FBW is very limited, particularly relating to HIV prevention. As we highlight, FBW are in many cases a specific sub-group of FSW, i.e. those acting as 'indirect' sex workers while also holding a job not directly linked to sex work. We have now added some additional text at various points in the Introduction to highlight the absence of FBW literature, and the relevance of the FSW literature as a starting point. For example:

Pre-exposure prophylaxis (PrEP) is an important HIV prevention tool, proven to substantially

prevent HIV acquisition when taken as prescribed.14 15 There are several planned and ongoing PrEP demonstration projects in Africa.16 17 However, previous PrEP studies have found variable adherence.18 Few PrEP trials have explicitly included FSW in their inclusion criteria – although some included proportions of unmarried women with multiple partners who reported histories of transactional sex 19 – and to our knowledge none have targeted FBW.

And:

The World Health Organization (WHO) recommends PrEP for populations with an annual risk of HIV acquisition greater than 3%,28 and as such it is likely to be a key intervention for reducing HIV among FSW internationally.29 Several countries in Africa with generalized epidemics have included FSW among the key populations eligible for PrEP,30-32 but few if any had begun widespread implementation for FSW by mid-2017. Past research has shown high acceptability of daily-pill PrEP amongst FSW hypothetically in a range of settings,33 and in practice in Kenya.34 While FBW acquisition risk may be lower on average than direct sex workers, it may well be that they meet the WHO criterion for PrEP.

4. Results. Why are results presented for women who have sex with bar clients for money but not for the women who do not? It seems like a meaningful comparison and the absence of the results for FBW with non-bar clients is notable.

We had not included those who have had sex with non-bar clients for money directly in our results section since there was little variation between this group and those who have sex with bar clients; we have now added these for completeness:

Associations between interest in each PrEP modality and the range of HIV risk factors are presented in Table 2. There was no significant difference in interest level (very/somewhat interested vs. neutral or somewhat/very uninterested) in daily-pill PrEP for those who did/did not report any sex for money (60% vs. 46%, p=0.30). This pattern was similar, or for those who did/did not report sex for money with bar clients (62% vs 49%, p=0.33) and those who did/did not report sex for money with others (59% vs 51%, p=0.60). Interest in longacting injectable PrEP was similarly not significantly associated with having had sex in return for money (any sex for money: 80% vs 77%, p=0.78; sex for money with bar clients: 86% vs. 74%, p=0.31; sex for money with non-bar clients: 76% vs 79%, p=0.80).

5. The correlation for interest in daily-pill PrEP and long-acting injectable PrEP is described as significant but is rather weak in magnitude.

We believe that this sentence may have been unclear in its intention: we had meant to show that the two modalities were statistically significantly associated with one another, rather than saying anything about this association being significant in terms of policy or otherwise. We have now adjusted this sentence to clarify that our focus was on statistical, rather than necessarily magnitude, significance:

Level of interest in daily-pill PrEP was statistically significantly correlated with interest in long-acting injectable PrEP (ρ=0.40, p=0.003), but not with either vaginal modality.

Nevertheless, we believe that a correlation of 40%, while perhaps considered weak if we were trying to proxy one variable with another, is substantial and of interest given in the context of two conceptually different variables.

6. There were two statistically significant results among the comparisons conducted for predictors of PrEP interest. However, this analysis included an enormous number of statistical comparisons and some mention of correction for the number of tests should be noted if these results are reported as statistically significant.

We agree that any results reported here as significant should be considered with great caution. Our primary interest in this manuscript is to provide initial estimates of prevalence figures (including interest in PrEP) that other researchers can make use of; the presentation of associations reflects very preliminary findings. We have therefore added text to the Discussion to highlight that any adjustment for multiple testing would leave no significant associations in this study:

While many of differences in PrEP interest were not significant in this small sample (and none remain significant if we adjust for multiple testing using the Holm-Bonferroni or any other method), respondents who reported having sex for money (either with bar clients or others), those who had had a miscarriage or abortion and those with more non-client partners all reported greater interest in PrEP.

7. Figure A: the legend is mislabeled. “Somewhat interested” is represented twice.

We thank the reviewer for noting this typographical error; we have now replaced the first of these terms with ‘somewhat uninterested’.

8. Discussion. Again, some discussion of differences (or lack thereof) between FBW who have sex with bar clients and those who have sex with non-bar clients seems warranted given that this distinction is highlighted in the results.

We have added text to discuss the lack of difference between women having sex for money with patrons and non-patrons to the Discussion:

While many of differences in PrEP interest were not significant in this small sample, respondents who reported having sex for money (either with bar clients or others), those who had had a miscarriage or abortion and those with more non-client partners all reported greater interest in PrEP. This pattern of findings, if reproduced in other data, would suggest that those FBW with a higher risk profile for sexually transmitted diseases have a rationally greater interest in PrEP. It was also notable that PrEP interest was similar for those having sex either with bar clients or with others; if efforts are made to determine which FBWs are having sex for money, inquiries should not be limited to bar patrons.

Reviewer 3. James McMahon

This study is the first to describe the knowledge and acceptability of PrEP among female bar workers (FBW) in East Africa, an understudied group with high prevalence and risk of HIV. The introduction is comprehensive and outlines the nature of the health problem to be addressed.

1. However, it would be informative for the reader to know the approximate size of the FBW population, and thus the potential impact of PrEP implementation in this group on the larger HIV epidemic.

Unfortunately it is very difficult to gauge the size of the FBW population, since this level of detail is not typically provided within labour reports – they fall within the ‘Accommodation and food service activities’ category, which accounted for 6.5% of all employed women aged >15 in 2014 (Tanzania Integrated Labour Force Survey 2014). Separately, it was estimated in 2005 that Dar es Salaam contained over 4000 bars (Dar grew from 3 million population in 2005 to over 5 million in 2016). The number of FBW per bar varies greatly, but conservatively assuming 5 FBW per bar and linear growth in the number of bars (and allowing for the 45% of Tanzania’s population aged under 15), these numbers suggest that over 2% of all adult women in DSM are working as barmaids.

6,000 bars * 5 FBW = 30,000 FBW

5,000,000 / 2 * 0.55 = 1.375 million adult females in DSM

30,000 / 1,375,000 = 2.182%

We have now added text to this effect in the Introduction:

FBW, or barmaids, often do not self-identify as FSW,5 6 and, in contrast to bar-based direct FSW, are employed by bars to provide non-sexual services. However, past quantitative research has shown that a substantial minority of FBW (35-45%) have sex in return for money, often with bar clients.7 8 FBW are often stigmatized and considered by others to be FSW.9 10 Qualitative work suggests FBW have limited ability to protect themselves against STIs and other adverse consequences of sex work, notably when negotiating condom use.11-13 While precise numbers are hard to obtain, FBWs likely comprise a large proportion of the 'accommodation and food service activities' employment category, which accounted for 6.5% of all employed Tanzanian women aged >15 in 2014,14 and it has been claimed that FBWs are the largest single employment group in Tanzania.15

2. Although underpowered to assess predictors of PrEP interest, the descriptive results alone are informative and indicate the need for further research in this group. The authors note the small sample size and lack of power as a study limitation, but do not properly interpret their results accordingly. For example, the p-value >.05 between willingness to consent for an HIV test and interest in daily-pill PrEP does not indicate that there "was not an association" between these variables. If effect sizes and p-values had been accompanied by 95% confidence intervals (CIs), it would be clear that the association could be negative, positive or nil, indicating an inconclusive result, not a negative result. Similarly, no definitive conclusions can be drawn about the other statistically non-significant results reported in Table 2. Presumably, with a larger sample and sufficient power, the study results could have shifted from inconclusive to a definitive effect (i.e., 95% CIs not encompassing the nil value) for more tests. This is a classic error in interpreting p-values--interpreting p>.05 as having no effect—and the language in the results section should be modified. It would also be informative to present the 95% CIs for some of the descriptive results. Ostensibly, the authors took care in drawing a pseudo random sample in order to make some inferences about the larger population of FBW, and CIs would give the reader a plausible range for the true estimate.

We apologise to the reviewer that we were been sufficiently careful in presenting our Results –

we should have at all times been clear that just because we are not finding significant differences between groups does not mean that there is in fact no difference. We have now gone through the Results and ensured that we only report on the significance of differences/associations and not whether such differences/associations exist. For example:

Interest in long-acting injectable PrEP was similarly not significantly unassociated with having had sex in return for money (any sex for money: 80% vs 77%, p=0.78; sex for money with bar clients: 86% vs. 74%, p=0.31).

Willingness to consent for an HIV test was not significantly associated with interest in dailypill PrEP (54% vs 50%, p=0.83).

Unfortunately, the statistical tests that we conducted in our analyses - χ

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and Kruskal-Wallis

tests – do not provide a direct estimate of difference and thus do not allow the generation of confidence intervals. We hope that by presenting both percentages for each comparison made in the Results we provide sufficient context for the findings to be meaningful. We have additionally added a short paragraph summarizing these findings – highlighting the overall pattern of results that suggest that those women at higher risk have greater interest, even though few of the individual findings are significant:

While many of differences in PrEP interest were not significant in this small sample, respondents who reported having sex for money (either with bar clients or others), those who had had a miscarriage or abortion and those with more non-client partners all reported greater interest in PrEP. This pattern of findings, if reproduced in other data, would suggest that those FBW with a higher risk profile for sexually transmitted diseases have a rationally greater interest in PrEP.

3. The methods used are well-conceived and appropriate for the research questions.

4. The Discussion is appropriate and does not go beyond the results of the study.

5. Despite the weaknesses noted above, the findings from this study are important and help advance our knowledge of, the need for, and acceptability of HIV prevention options in this understudied and high-risk group of women in East Africa.

We thank the reviewer for these comments.

VERSION 2 – REVIEW

REVIEWER	Jeb Jones Emory University, United States of America
REVIEW RETURNED	14-Dec-2018

GENERAL COMMENTS	The authors addressed all of my previous concerns.