Author's response to reviews

Title: Prevalence and Types of Rectal Douches Used for Anal Intercourse: Results from an International Survey

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Author's response to reviews: see over
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Re: Response to reviewers for MS: 1345208541110464
Manuscript title “Prevalence and Types of Rectal Douches Used for Anal Intercourse: Results from an International Survey”

Dear Editor,

Enclosed please find our manuscript entitled “Prevalence and Types of Rectal Douches Used for Anal Intercourse: Results from an International Survey.” We have revised our manuscript according to the reviewers’ comments from the initial review. We found the comments extremely useful in revising this paper. In order to facilitate this review we have included a ‘clean’ copy of the manuscript as well as a copy with specific changes tracked. Below, we outline how we have addressed each suggestion made by the reviewers.

Reviewer: Alex Carballo-Dieuguez

1. *It seems that the assessment did not include frequency of anal intercourse. Could that be a confounding factor? For example, that those who douche more frequently also have more sexual occasions, which in turn could explain their higher likelihood to have STIs?*

   We agree with Dr. Carballo-Dieuguez, in that frequency of anal intercourse could be a potential confounding factor since it is associated with rectal douching (per our data) and some of the other factors of interest such as rectal STIs. We have updated table 3 to show that median number of receptive anal intercourse events varied by douching status (6 vs. 4 events; p value <.01). Furthermore, we included this factor in our multivariable model (though changes in our effect estimates were not significant) and have updated the manuscript to reflect this change in our analysis.

2. *Do the authors have any possible interpretations about the differences they found? For example, why are douchers more likely to be older than non-douchers? (Is douching a behavior that is learned over time? Does the muscular tonicity of the rectum change with age making douching more necessary?) Why does douching appear to have different prevalence by geographical location?*

   We have expanded our discussion of possible interpretations about differences found between those who reported rectal douching as compared to those who did not. Specifically, we have added a more detailed discussion of geographical variations in douching (second paragraph of
discussion) as well as substance use (third paragraph of discussion). We agree that muscular
tonicity may change with age, therefore necessitating more douching. However, in reviewing
the literature we found that age related changes were evident primarily in advanced age (70
years +) and feel that the 4 year age difference noted in our study (mean age of 38 years vs. 34
years) was not clinically significant enough to explain the differences we found in douching and
have omitted further discussion on this in the paper.

3. Is there any potential explanation for the association observed between douching and
substance use? Could it be that individuals who “party” (e.g., engage in prolonged sessions of
substance use and sex) are more likely to prep for such events, thus douching to cleanse
themselves?

We have added a discussion surrounding substance use (third paragraph of discussion) and
agree that “partying” may partly explain the increased prevalence of rectal douching among
substance users. We also offer another potential explanation relating to the potential for
increase in bowel dysfunction and constipation among substance users.

4. Were there reports of participants douching before and after sexual intercourse?

The majority of participants who reported douching, reported doing so before receptive AI,
which is presented in detail in Table 2. In addition, we explored the extent of overlap for those
who reported douching before and after sexual intercourse. For instance, we found that 14% of
those who reported rectal douching before AI ‘all of the time’ also reported rectal douching
after AI. These findings have been included in the results section.

5. Given the wide variety of locations where respondents lived, please indicate how you managed
to include an image-based list of douches available commercially” at each location.

We conducted an internet search of images for rectal douches/enemas. While we were
successful in locating images for some international brands, we acknowledge that it would be
difficult to find images for products available internationally. As such, our questionnaire allowed
the respondent to specify that they used a commercial product other than the one presented on
the image list and could specify the product. We have clarified this in our methods section.

Reviewer: Janni J Kinsler

Major Compulsory Revisions

Introduction

1. 2nd paragraph, lines 6-7-Were the studies of rectal douching prevalence among MSM in the US
or non-US countries?

Yes, both studies cited were based on surveys among MSM in the US. We have clarified this in
our introduction.
2. **2nd paragraph**-Authors could add more literature on prevalence of rectal douching in different populations. For example, Kinsler, Galea, et al [Sexually Transmitted Infections, 2013, Feb;89(1)] looked at the prevalence of rectal douching among MSM in Peru.

Data on the prevalence of rectal douching is limited, with the majority of the handful of studies published to date being US based studies. We have included the prevalence estimates from the above mentioned study in Peru and include this in our literature cited in the introduction.

**Methods**

3. **Statistical Analyses**-What analyses were used to explore partnership specific factors and the prevalence of rectal douching for Figure 1?

The analysis presented in figure 1 is based on chi-square methods examining the difference in prevalence of rectal douching and partnership types (first three bars in the figure) as well as subanalysis of the prevalence of rectal douching among HIV-negative MSM by sexual partner HIV status. We have clarified this in our statistical analysis section.

**Discussion**

4. **Paragraph 1.** A more detailed discussion on the implications of the findings is needed. For example, what are the implications of using rectal douching solutions that could potentially be harmful, especially in relationship to Rectal Microbicides?

We have expanded our discussion overall including a further exploration of regional differences and implication of substance use (paragraph 2 and 3 of discussion). In the first paragraph of the discussion we highlight the fact that rectal douching solutions that are harmful may indeed increase the risk of transmission and acquisition of STIs/HIV given the rectal epithelial damage. In addition, in our discussion of the implications of our findings in terms of rectal microbicides we highlight the fact that potential rectal microbicides developed as douches are likely to have an improved safety profile compared to commonly used existing products, further increasing the prevention potential of such a product.

5. **Paragraph 1.** The authors state the following: “Because the prevalence of rectal douching before AI was relatively high and the products used may cause damage to the rectal epithelium, the contribution of this practice to the transmission and acquisition of STIs/HIV may be important.” A similar statement was used in the conclusion. This seems to be a very simplistic statement. Could the authors elaborate a little more on the implications of this statement in either the discussion or conclusion section?

We have modified the sentence starting with “because the prevalence of rectal douching...” such that we highlight the implications that rectal epithelial damage may increase the likelihood of either acquisition or transmission of STIs/HIV. Also, in light of the expanded discussion section, we have provided more detail on the ways in which rectal douching may compromise rectal health and is shown to be associated with higher risk sexual behaviors and consequently has important implications in terms of the risk of STIs/HIV.

**Minor Essential Revisions**

*Introduction*
6. 1st paragraph, line 12- Following sentence is missing a comma: “In addition to biologic plausibility, a recent epidemiologic study....

We have corrected this sentence to include the appropriate punctuation.

7. 2nd paragraph, line 5-What do the acronyms LGV and HBV stand for?

LGV stands for Lymphogranuloma venereum and HBV stands for Hepatitis B virus. We have clarified this in the manuscript.

Discretionary Revisions
Results

8. Did authors conduct any analyses assessing whether type of rectal douche or reasons for rectal douching/enema use differed by region or gender of sex partner? This information could be useful for developing more targeted interventions.

We explored variations in type of rectal douche used by a number of factors including region, gender, sexual behaviors, etc. But given that the overwhelming majority reported using homemade products/water we weren’t able to detect any statistically meaningful differences comparing those who reported homemade product use exclusively to those who reported commercial product use exclusively and those reported using both commercial and homemade products.

Editorial requirement:

1. Please include a copy of your questionnaire as an additional file.

We have uploaded a copy of the questionnaire as an additional file.

We thank the reviewers for their careful consideration of this manuscript and hope that we have addressed all of their questions and concerns.

Sincerely,

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