Author's response to reviews

Title: Association between legume Intake and self-reported Diabetes among adult men and women in India

Authors:

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Version: 2 Date: 27 February 2013

Author's response to reviews:

To
Mr Victorino Silvestre/Dr Justin Basile Echouffo-Tcheugui
Editor
BMC Public Health

Subject: Revised submission of Paper No. MS: 3564510367845031
“Association between legume Intake and self-reported Diabetes among adult men and women in India”.

Dear Dr. Silvestre/ Dr Echouffo-Tcheugui,

We thank you very much for providing us an opportunity to revise and resubmit our paper. We are grateful for the detailed editorial and reviewer comments which we found very helpful in revising our paper. Please find a point wise response to the reviewer’s comments (written below the comments). We have also incorporated all the comments and suggestions by the two reviewers in the revised version of the manuscript. The revision is marked red all throughout the revised manuscript. We hope that the responses and revisions in the paper address all the concerns and are now acceptable for publication. Please do get in touch with me if you have any further comments or questions about our paper. I am looking forward to hearing from you.

Warm regards
Yours sincerely
Sutapa Agrawal

Reviewer's report
Title: Association between legume Intake and self-reported Diabetes among adult men and women in India
Version: 1 Date: 23 October 2012
Reviewer: Mary Beth Weber
Reviewer's report:

Major Compulsory Revisions:

1. This paper needs to be proofread thoroughly. There are grammatical errors in almost every paragraph, and in at least one location the data in the text did not match data in the table.

R: We thank you for your suggestion and concern. We have now checked the text for grammatical errors and corrected them in the revised manuscript. We have also made necessary correction to the text with matched data from the table.

2. The description of the statistical analysis was a bit unclear. For example, why is it “likely” that legume intake would be confounded by age or religion? Did the author control for clustering in the first analysis? It was only clear that it was done in the second analysis. Did the author check for effect modification by gender? Without that information, it was unclear why the analysis needed to be performed for men and women separately. Did the author do any tests to assess if the variables in the models were significantly associated with the outcome?

R: We anticipated that there are differences in legume consumption by age and religion and other socio-economic variables in India. A bivariate analysis (not shown in the manuscript) showed highest legume consumption among the Hindus followed by Muslims. Again legume consumption decreases with increasing age in Indians. Therefore we have included age and religion as possible confounders along with other socioeconomic variables. Our study also showed diabetes prevalence to be higher among Sikh men and among Christian women. Previous studies did show that there exists religion-based differences in dietary patterns and cardio-metabolic risk in India (1-3). Before carrying out the multivariate models, we tested for the possibility of multicolinearity between the variables. In the correlation matrix, all pair wise Pearson correlation coefficients were <0.5, suggesting that multicolinearity was not a problem.

We had provided the reason for conducting a gender specific analysis in the Methodology section of the manuscript. To reiterate this, analyses were carried out separately for men and women, as we anticipated that there may be gender differences in the effect of legume intake. We also anticipated that gender differences might arise as women were more obese than men in our study (see Table 1) and there are gender differences in dietary habits, in nutritional status, susceptibility to disease, and access to treatment and care in India. Moreover our findings also suggest that the level of association of legume intake and diabetes do vary by gender.

References


Minor Revisions:
1. The discussion of the need to assess inter-rater compatibility of the NFHS-3 questionnaire is a good one; however, your argument that this is less of an issue because the instrument is used in lots of settings does not make sense. You should clarify this argument.

R: Thank you for your suggestion. We have now corrected this argument in the discussion section of the revised manuscript.

Discretionary Revisions:
1. The author might want to address issues around single food item studies. How could this information be used? Is it prudent to design programs around a single food item? I don't know all the answers to these questions, but they are worth considering nonetheless.

R: Thanks for raising this issue. Given the high growing prevalence of diabetes in India, the role of diet needs to be examined in relation to its prevalence and empirical research is lacking in this area in India and that the role of legumes in the prevention of diabetes is less documented in Indian context. In this study we have tried to address this knowledge gap and shown the association between legume consumption and diabetes prevalence. Legume consumption is ubiquitous in India. More than half the population consumes it daily and has been an important part of traditional Indian diet since time immemorial, equally consumed by vegetarians and non-vegetarians both, rich as well as the poor, by young and old. So it is important see diabetic association with a diet which has potential to reach among all the population subgroups.

In view of growing prevalence of diabetes in India, etiology of every protective factor will be key to combat this disease. Our study did found daily legume consumption as a protective factor for diabetes and thus which has potential for changing dietary behavior. So at the policy level, it would be imperative to advocate for more legume consumption in general and more specifically to increase the frequency of legume intake and to include this in daily diet for those who take this weekly or occasionally.

We have now included the above discussion in the revised manuscript.

Level of interest: An article of limited interest
R: As I have mentioned earlier, given the high growing prevalence of diabetes in India, the role of traditional Indian diet needs to be examined in relation to its prevalence and empirical research is lacking in this area in India. In this study we have tried to address this knowledge gap and shown the association between legume consumption (which is ubiquitous in India and equally consumed by vegetarians and non-vegetarians both) and diabetes prevalence. In view of growing prevalence of diabetes in India, etiology of every protective factor will be key to combat this disease. Our study found legume consumption as a protective factor which thus has potential for changing dietary behavior. Therefore, this study and the findings are important and may probably of high interest in Indian context.

Quality of written English: Needs some language corrections before being published

R: Thank you for your suggestion. We have now made necessary language corrections by a professional editor.

Statistical review: No, the manuscript does not need to be seen by a statistician.

R: Thank you

Declaration of competing interests:
I declare that I have no competing interests.

Reviewer's report
Title: Association between legume Intake and self-reported Diabetes among adult men and women in India
Version: 1 Date: 8 January 2013
Reviewer: Edith Feskens

Reviewer's report:
This paper describes the association between legume intake, other risk factors, and the prevalence of self-reported diabetes in the Indian NFHS 2005-06. Daily or weekly legume intake was inversely associated with diabetes prevalence in women, and non-significantly so in men.

R: Thank you.

Comments:
General: In general the data are well analysed and reported. The Results section is a bit long. The most important comments relates to the interpretation of the results. One could also conclude: ‘diabetes patients form India have higher legume intake’. I think the cross-sectional nature of the study and the ‘clinical’ diagnoses are eloquently discussed in the Discussion section, but the final
interpretation remains as suggest in the Introduction, an etiological relationship. This conclusion is too strong, and should be modified to take the possibility of reverse causation into account.

R: Thank you for your suggestion and explanation on the reverse causation. We have now modified the conclusion section (in abstract and in discussion) according to your suggestion.

Secondly, although it is generally advised to focus on a specific etiological hypothesis, the results from Table 3 and 4 show an interesting pattern, which to my opinion suggests that the focus of the paper should better be revised: from legumes to risk factors including dietary ones, in general. This gives also the opportunity to elaborate a bit more on a very interesting robust finding, that fruit intake is significantly inversely associated with diabetes prevalence in both men and women, a much more stronger finding that the legume one! Then a longer Results section is better justified as well.

R: Thank you for your suggestion. We did thought about this while analyzing our findings but wished to continue to focus our study on legume intake and diabetes risk although other items like fruits are showing protective results for various reasons. Fruits are relatively expensive for common people in India that is why majority of Indians takes this occasionally. However, legumes are an essential component of traditional Indian diets and more than half the population consumes it daily. Legumes are equally consumed by vegetarians and nonvegetarians, rich as well as the poor, by young and old. So it is important see diabetic association with a diet which has potential to reach among all population subgroups.

Though we have found interesting robust association between fruit intake and diabetes risk, it will be difficult in India to propose high fruit intake at the policy level. Fruits are marketed at a higher price and is thus not in reach of the poor and even middle class population but legumes are lowly priced and are within the purchasing limit of the poor people. So at the policy level, it would be good to advocate for more legume consumption and increase the frequency of legume intake and include this in daily diet for those who take this weekly or occasionally.

Details:
1. Logistic regression: It would be helpful if not only the (adjusted) ORs are presented for each category, but for the overall variable also a p-value for trend is displayed. This gives additional information, i.e. on the ‘dose-response’ curve.

R: Thank you for your suggestion. We have now put the p-value for trend in Table 2 and 3.

2. Given the very high use of legumes in India, it would be more logical to use the
frequent users as reference category?

R: Thank you for your suggestion, but we wanted to show the impact of frequent legume consumption over less frequent or no consumption and our result also showed that daily/frequent consumption of legume is protective for diabetes. That is why we have put never or occasionally legume consumers as reference category.

3. Line 335: given the shortcoming of the study as indicated above I particularly object to the use of the word ‘risk’ in this sentence, it should be replaced by ‘prevalence’

R: Thank you for your suggestion. We have now removed the word ‘risk’ and replaced it with ‘prevalence’ all throughout the revised manuscript.

Level of interest: An article whose findings are important to those with closely related research interests

R: Thank you

Quality of written English: Acceptable

R: Thank you

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing