Author's response to reviews

Title: Prevalence of cardiovascular health risk behaviors in a remote rural community of Sinduli district, Nepal.

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Author's response to reviews: see over
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Dear Tacbobo

Re: Manuscript ID 9704946161285784

Please find attached a revised version of our manuscript “Prevalence of cardiovascular health risk behaviors in a remote rural community of Sindhuli district, Nepal.”, which we would like to resubmit for publication as a original article in BMC Cardiovascular Disorders journal.

Both reviewers' comments were highly insightful and enabled us to greatly improve the quality of our manuscript. As you and reviewers suggested, we sent the article for language editing from native speakers and made the changes where it required.

Revisions in the text are shown using yellow highlight for additions, red font for corrected words, and strikethrough font for deletions.

We hope that the revisions in the manuscript and our accompanying responses will be sufficient to make our manuscript suitable for publication.

We shall look forward to hearing from you at your earliest convenience.

Yours sincerely,

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Responses to the comments of Reviewer #1

#1. Table 3 is not a description of cardiovascular disease risk factors, but association between hypertension and cardiovascular disease risk factors. It is not correspond with the main study purpose.

Response: We completely agree with your view. But, hypertension is also an intermediate risk factor for CVD. In the absence of other major intermediate risk factors like blood sugar and lipid, we thought the relationship between intermediate and other risk factors could bring out and add up some valuable information in this prevalence study. In our opinion, it is also equally important to find out the predictors for hypertension in this prevalence study in order to know if it is associated with other variables; how much it is explained by other CVD risk factors.

Before entering the variables into multiple logistic regression, we went for bi-variate analysis of hypertension and socio-demographic and other variables. Only significantly associated variables were entered in multivariate analysis. Others were dropped out of model. We have written this process in method and result section of article.... like this.

“......Separate bivariate logistic regression analyses were conducted for independent variables. Correlation matrix was calculated to investigate their interrelationship. Variables those were identified as significant predictors in bivariate analyses were entered in multivariate model.....”

“......In bivariate analysis, hypertension was significantly associated with age ($\beta = .08$, df = 1, $p = .000$), smoking ($\beta = 1.164$, df = 1, $p = .000$), alcohol consumption ($\beta = .75$, df = 1, $p = .016$), salt intake($\beta = .097$, df = 1, $p = .004$), and BMI ($\beta = .112$, df = 1, $p = .006$). These variables were entered in binary logistic regression model for multivariate analysis.”

#2. Need more neat and efficient sentence for study purpose. (Only for descriptive cardiovascular disease risk factors or association between hypertension and cardiovascular disease risk factors)

Response: This is very fruitful suggestion. Considering your suggestion, we have made some changes on objectives. Excerpt from article is like this...

“......Therefore, this study aimed the primary purpose of the study was to estimate the prevalence of cardiovascular health risk behaviors among people living in remotely located
area of Eastern Nepal where poor hygiene and sanitation still remains a prevailing problem. *We also assessed the association between CVD risk factors and hypertension....*

#3. If you want to keep hypertension as a dependent variable (outcome), it is better to describe thoroughly about the blood pressure measurement. Did they considered hypertension medication? When (time) does the blood pressure measured? Are they fasting state? Are they considering tea, coffee, and smoking? Are they took the rest at least 5 min before taking blood pressure?

**Response:** We completely agree with you suggestion. Though sparsely scatter, we think the information provided for diagnosing the hypertension is clearly mentioned in our article. They are,

“......Doctor’s Aneroid Sphygmomanometer (BP Set) was used for recording blood pressure. We recorded three readings of systolic and diastolic blood pressure in five minutes interval over right arm and averaged them for final score.....”

“.....The diagnostic criterion for hypertension was set systolic blood pressure ≥ 140 mmHg and/or a diastolic blood pressure ≥ 90 mmHg as recommended by Joint National Committee-VII [28]. The persons who were using antihypertensive medicine were also listed under the category of hypertension.......”

Responses to the minor comments of Reviewer #1

#1. Need for change commonly used term. Since most readers are in the field of the cardiology, it is better to use as ‘cardiovascular disease risk factors (Modifiable risk factors, Non- Modifiable risk factors)’ instead of ‘Cardiovascular health risk behaviors’. It may require change the title term also.

**Response:** Our research team also thought like you previously. Latter what we decided was that the title we chose could represent the risk factors, mostly behaviors, we studied. Undoubtedly, if we had included bio-chemical risk factors, it would be better to replace the title as you provided.

#2. Since this is not a national representative sample, and most international readers not aware of Nepal’s current cardiovascular health status, it is better to give us precisely how different the study area is comparing to the other Nepal area and why did you
select this specific area and population in the introduction part. And it is better to connect the result and making important point at the discussion part why this is important although it is just one area (e.g. health inequality)

Response: We are really glad to get your micro-assessment on our article. We have briefly tried to include some background information of study site on methods section under “Study site” heading and try to connect it in discussion part. It is written as, “…. Notably higher numbers of indigenous people at study site had a strong influence on prevalence of alcohol consumption. The predominance of lower socio-economic class and less educated people also stimulated a surge of alcohol consumption rate. …” . More examples are found in discussion.

#3. This study evaluated people with high risk. Do you think population-wide comprehensive intervention is required? Isn’t it be better to use high risk approach?

Response: This is an interesting query. They, indeed, need population wide comprehensive intervention approach for changing high risk behavior and lifestyle. After getting this study result, we are thinking for a high risk approach for identifying the people at risk and applying intervention to prevent the development of hypertension and CVDs.

#4. At the abstract part abbreviation VDC is not clear.

Response: Though it quite is familiar to Nepalese reader and written its full form latter in introduction section, as you suggested we are removing the abbreviation from abstract.

#5. Why 2 statistical packages were used in the analysis? Usually 1 package used for one paper except there is a very specific reason.

Response: The main software used was SPSS. In the case of comparing proportions through Chi-square test with continuity correction and calculating confidence interval, we used R. I think you are familiar with the difficulty while running Chi-square for proportion and calculating confidence interval in SPSS.

#6. Although insufficient fruit and vegetable intake are unhealthy behavior but considering as conservative cardiovascular risk factors is controversial. And the index is
not quite standard yet (quantity, ethnicity). Could you provide related article rather than WHO report?

Response: You are true. Fruit and vegetable intake and unhealthy behaviours are not as strong predictors as smoking, hypertension and raised lipid. You can find preponderance of evidences proving an inverse relationship between fruit and vegetable intake and CVDs. You can follow the following articles.


http://ajcn.nutrition.org/content/72/4/922.short

http://ajcn.nutrition.org/content/76/1/93.full


Responses to the comments of Reviewer #2

#1. The words you used, i.e., “fewer” “higher waist”, mean comparing to what?

Response: First we would like to thank you for your in-depth assessment and appealing comments in our article. As you suggested, we sent the article for quick language revision from native speaker. Based on your suggestions, we have also made some correction on article where it required. Salt unit has been changed. Unit to BMI has been added. And, some language modifications have been done where you pointed for removing the confusion.
#2. Please specify how to assess salt intake in the following sentence. “Average daily salt intake per person was calculated measuring total salt consumption in a month by whole family divided by total family members. If same salt was used for cattle, that amount was also roughly estimated and reduced from total salt consumed.

Response: We really appreciate your remarks. The language is, in fact, not understandable. We have now simplified the language. It is like this …” Average salt intake per person per day was calculated in four steps. First, the total days that one family could sufficiently use one kilogram of salt (one packet) were counted. If same salt was used for cattle, that amount was also roughly estimated and reduced from it. Then, the total salt consumption was divided by total days it was used and number of family members who were sharing the same kitchen in order to derive salt intake per person per day. Finally, it was averaged to calculate average salt intake per capita per day.....”

#3. Please check the unit of alcohol intake.

Response: We are happy to share you that standard pure alcohol unit is expressed as gram though it seems little bit confusing.

#4. the sentence “Smoker was 2.285 times more likely to develop hypertension than non-smoker [table 3]” is not good. This is cross-sectional analysis, thus you cannot use the word of “develop

Response: We agree with you. We have now replaced the word “develop” with “have”.

#5. You said, “However, It was substantially higher than that of low- and middle-income countries (77.6% of men and 78.4% of women ), India (74%) and Bangladesh (76.3%)”. I wonder the methodology among the compared studies was same or not? If not, you cannot compare the prevalence among the different studies. Same as the above question, your cohort consists of young adults, that is one of the reasons why prevalence of hypertension was low. Other cohorts you compared here also consisted of young adults ??

Response: You are absolutely right. There is paucity of research conducted in similar settings even though we have tried to cite the most comparable research.
#6. I do not understand the following sentence.

*However, this study buttressed the earlier study findings [13, 15] that prevalence of smoking, alcohol consumption, fruits and vegetables intake and hypertension were comparatively higher among less educated and low socio-economic status group*

**Response:** We were trying to say that the researches published earlier (and mentioned earlier in article) had similar findings like what we got in our research. Now we have modified the sentence.

#7. As limitation, estimated salt intake you used here should be inaccurate. Gold standard is 24-hour urine.

**Response:** You are true, indeed. It is just a rough estimation. We used this method in resource scarce condition. Gold standard is undoubtedly estimation of salt intake by 24-hour urinary sodium excretion method.