PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Prevalence of non-communicable disease risk factors among poor shantytown residents in Dhaka, Bangladesh: a community-based cross-sectional survey
AUTHORS	Khalequzzaman, Md.; Chiang, Chifa; Choudhury, Sohel Reza; Yatsuya, Hiroshi; Al-Mamun, Mohammad; Al-Shoaibi, Abubakr; Hirakawa, Yoshihisa; Hoque, Bilqis; Islam, Syed; Matsuyama, Akiko; Iso, Hiroyasu ;Aoyama, Atsuko

VERSION 1 - REVIEW

REVIEWER	Dr M Mostafa Zaman World Health Organization Bangladesh I have authored several articles with one of the co-authors (SRC) of this manuscript
REVIEW RETURNED	18-Dec-2016

GENERAL COMMENTS	STEPS survey covering glycated hemoglobin, lipid profile and dietary salt provides strength to this manuscript for considerations. However this strength has not been addressed appropriately. On the other hand a major claim of strength of this manuscript is not correct. Limitations are not highlighted in the body of the manuscript. Major points: Following three points will have major implications on the revisions or editorial decision(s): 1. The manuscript claims that it is the first population-based study to measure blood lipids. Unfortunately this is not true. Another study was done as early as 2001 and published in 2006. One of the co-authors of the manuscript under review was one of the co-authors (45. Zaman MM, Choudhury SR, Ahmed J, Yoshiike N, Numan SM, Islam MS, Parvin K, Hakim F. Plasma lipids in a rural population of Bangladesh. Eur J Cardiovasc Prev Rehabil 2006;13:444-448.). Acknowledgement of this article will warrant revisions in Introduction and Discussion avoiding a claim that is not evidence-based. 2. HbA1c and dietary salt deserve special credit. However none of them have been mentioned in the Abstract. Abstract could be revised focusing these two. In addition salt intake deserves special attention in Results, Discussion and Conclusion sections. Discussion on dietary salt will a review of a few articles (I can immediately recall at least two published in Global Health, and Cardiovasc J); 3. I have reviewed another manuscript submitted to Environmental

	Health and Preventive Medicine reporting preliminary data of the same survey. The manuscript is in press now. I recall that there is a big difference between numbers of men and women for whom data are being reported. The manuscript accepted for publication could be made available for checking redundancy of results reported here. I d not see it in the supplemental documents. 4. The whole interest of the study is on it target population, urban poor. But subsequently data presentation splits them in to low middle class and poor. Authors should clarify it bringing synergy of the writing in various sections of the manuscript. Data for two tables compares/presents these two groups although it is an objective of the manuscript. Minor points: 1. Lipids were tested in three laboratories; which is considered as standard for comparison? It would be good to have between-laboratory coefficient of variations of lipid measurements; 2. Authors should preferably provide references for the cut-off points used for quantitative variables on page 9 lines 50-56; 3. Tables 3 on mean values of variables should appear before the variables were categorized to report prevalence (table 2) considering natural sequence of data collection and their management; Prevalence values are compared between sexes using statistical tests but mean values are not compared. Is there any reason for this differential approach? 4. Physical activity data could include discussion of the following article (M. Moniruzzaman · M. Mostafa Zaman · M.S. Islalm · H.A.M.N. Ahasan · H. Kabir · R. Yasmin. Physical activitylevels in Bangladeshi adults: Results from STEPS survey 2010. Public Health · April 2016. DOI: 10.1016/j.puhe.2016.02.028).

REVIEWER	K R Thankappan Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India
REVIEW RETURNED	28-Dec-2016

GENERAL COMMENTS	General Comments The authors report non-communicable disease risk factors from an urban poor community in Bangladesh based on a community based sample. Since this sample is from Dhaka it might not represent the urban poor in the entire Bangladesh. Therefore it is better to include Dhaka in the title also. They used a modified WHO STEPS approach for the study including STEP 1, 2 and 3. As the authors acknowledge they did not collect fasting blood sample which might be one of the reasons for such a high prevalence of diabetes in this sample. This has not been discussed in the paper. They also did not do any analysis to find out whether some of the STEP 1 variables were associated with STEP 2 or STEP 3 variables. For example physical activity was very low among women and the diabetes prevalence was high among them. This was not tested in the study. HDL cut off is different for men (<40 mg /dl) and women (< 50 mg/dl). This is not the way the analysis was done in the study. A thorough spell check and grammar check are required. Specific comments

	Abstract 1. Under the outcome measures instead of obesity please use overweight/obesity which is used in the result section 2. In the results section it is reported that about 60% men used current tobacco. Please provide the actual figure of 59.4% with 95% confidence intervals. Introduction 3.Introduction section needs to include the important findings from previous studies in Bangladesh and one or two sentences about the WHO STEPs approach Methods 4. Definition of a household is missing in the method section. Authors report that some households shared same kitchen and same toilet. In some cultures like India the definition of a household is sharing the same kitchen. 5. Since data were collected by interviewing the participants the correct terminology will be interview schedule rather than questionnaire which is usually self administered by the participants 6. Who measured waist and hip circumference of the participants? Did women data collectors take measurements of women? Please clarify this 7. It is not mentioned in which arm (right or left) the blood pressure was measured 8. How many participants were invited for measurements in a day? 9.Was the laboratory accredited for measuring HBA1c and other biochemical measures mentioned in this paper? 10. 5% of samples were tested in another lab. What was the coefficient of variation 11. measurement of physical activity is not mentioned in the method section and it is provided in the result section. This needs to be provided in the methods 12. HDL cut offs are different for men and women and this should be mentioned in the methods 13. Waist circumference cut off are provided as > 80 for women and > 94 for men. This needs to be checked again. Is this >=80 and >=90? 14. Hemoglobin results are given but no mention about measuring hemoglobin in the method section. 15. Under ethics is it is written that written informed consent was obtained from all participants. However in the study 38.1% of women and 27.3% of men were without any years of education. This needs to be clarified. 16. under data analysis it is written that data were inputted (line 41 in page 9). This needs to be corrected Results 17. page 10 line number 45. Provide the % of 2009 persons out of 2551 18. Page 11 line 14. Physical activity (>600) this needs to be >= 600 19. Use of beedi is missing from the results section 20. Analysis to find out association between STEP 1 and STEP and 3 might be useful. The authors can decide on this References 21. This needs to follow a uniform pattern. Reference # 13 has month volume number etc where as others do not have these. Reference # 14 is missing volume number. For online journals better to provide DOI Tables 22. Table 1 title in the bracket valid % is given. Is this an error? 23. Page21 line 57. It is better to use Any form of tobacco rather than tobacco product use

	24. Table 2. Page 23. Line 44. Hypertension (%) under which authors provide systolic BP in the first raw and diastolic BP in the second raw along with those on medication. This is confusing. This needs to be corrected. 25. page 24 line 17-22. HDL cholesterol needs to re-analyzed based on the different cut off for men and women.

REVIEWER	Dr Krishna Kumar Aryal Nepal Health Research Council, Nepal
REVIEW RETURNED	25-Jan-2017

GENERAL COMMENTS	Introduction: Page 5 In the second paragraph of the introduction, while mentioning about several STEPS survey in Bangladesh, would be good to highlight some relevant findings from those for e.g. risk factors prevalence especially urban vs rural. Page 7 sampling details para 2: The sample size has been mentioned as 4000. Was there a basis for estimation or was it calculated using some process. A clarity would be good. Following that, how was the sample of 1000 men and 1000 women in each wealth selected. The detail of sampling process would be required with explanation of each steps of sampling. The sampling details looked completely missing. Page 9 Data analysis line 54 to 57: Alike the definition of hypertension, the authors would define the variable blood glucose level to different categories of raised blood glucose or diabetes mellitus. The authors have now mentioned that blood glucose levels were classified..... and HBA1C level were classified....total cholesterol levels were classified...which does not mention about the the meaning of different levels. So it is suggested to mention with clarity what does different levels of glucose, HBA1C and cholesterol mean? As this was a prevalence study and the sampling was stratified, ideally it would be required to carry out a complex sample analysis along with weighted analysis. Was this done in the analysis? This needs to be mentioned. Even if it was not done, then also it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study. Page 10 Results: the overall response even in the questionnaire based interview seems quite low only about 64%. This needs to be well described as this is not an usual case in studies from this region of

	the world. There would be a serious issue of external validity with such low response rates. Page 11 Line 18 to 23: The authors have presented the likelihood of being educated, employed and so on among low wealth group and lower middle wealth group, but the tables presented do not show any such kind of analysis, as they have tested only for gender differences. With regards to the analysis of different behavioral as well as biological risk factors, it would be good to present the results with 95% CI from which one could see the statistical differences in prevalence among sub groups. The current way of putting p value of gender difference seems to be limiting the understanding of sub group differences. The tables presented would be better organized in the following way: Table 1 currently has the mixed results for background characteristics and behavioral risk factors. I would suggest limiting table 1 to just background characteristics. Then table 2 may include all the behavioral risk factors prevalence starting from smoking. Table 3 can be reorganized in a way that gives a meaningful presentation to the readers of the paper. It is advisable to present the findings as prevalence of overweight and obesity rather than just populating different categories of BMI. This would look good with 95% CI. The same approach can be taken for all the variables e.g. prevalence of increased waist hip ratio (central obesity), prevalence of hypertension (with this the separate figures for SBP and DBP can be removed and so on. Currently presented Table 3 did not look so appealing to me. First of all does the sample size taken for the study allows such large sub group analysis (5 age groups for men and women means a total of 10 age sex groups - this is a serious question). Second the non response is also quite high. Third, what do the authors want to highlight with this table is not clear. What is the public health significance of this analysis. This needs to be very clear. Considering all these issues, the results section need a complete revision. Discussion The authors have compared the current findings with national estimates and previous surveys. It needs to be first clarified as mentioned in the comments above for methodology that this study followed a complete probability sample design during sampling and a complex sample analysis while producing the results.

	Further on, in page 13 line 34 to 38, it has been mentioned that the diabetes prevalence was higher in lower wealth group compared to lower middle wealth group, but the analysis do not show any kind of statistical tests performed for testing the differences. Abstract Summary: The summary could be improvised following the revision of the whole paper.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

STEPS survey covering glycated hemoglobin, lipid profile and dietary salt provides strength to this manuscript for considerations.

Thank you very much for recognizing the value of our manuscript.

Major points:
1. The manuscript claims that it is the first population-based study to measure blood lipids however, another study was published in 2006.

We are sorry for not acknowledging the article, as we were informed of the article after submitting the manuscript to the journal. We appreciate your advice. We revised the manuscript as follows:

Page 5, line 2–3: Strengths and limitations of this study
This study is the first population based survey including measurement of glycated hemoglobin (HbA1c) and blood lipid profile in an urban setting of Bangladesh.

Page 6, line 24 – page 7, line 1: Introduction
Another population-based survey on blood lipid profile including high-density lipoprotein (HDL)-cholesterol, low-density lipoprotein (LDL)-cholesterol and triglycerides was conducted in 2001, targeting less than 500 rural residents [12].

Page 15, line 2–3: Discussion
This study is the first comprehensive epidemiological survey of various NCD risk factors including HbA1c among the urban poor in Bangladesh,

Page 16, line 10–11: Discussion
Our study is the first population-based survey of blood lipid profile of the urban poor in Bangladesh.

Page 16, line 12–14: Discussion
The findings were consistent with the findings of a previous study of rural population, although desirable range of low LDL-cholesterol was more prevalent in our study than the previous one [12].

Page 20, line 5–6: Reference
12 Zaman MM, Choudhury SR, Ahmed J, et al. Plasma lipids in a rural population of Bangladesh. Eur J Cardiovasc Prev Rehabil 2006;13:444–8.

2. Abstract could be revised focusing HbA1c and dietary salt. Salt intake deserves special attention in Results, Discussion and Conclusion sections. Discussion on dietary salt will be a review of a few articles.

Thank you for your comment. We added HbA1c in Abstract as below. We could not add more words to the Abstract due to the word count limitation (up to 300 words).
We asked the participants if they added table salt to their meals, but did not measure the total intake of salt. Therefore, we described the issue briefly in Results. Following your advice, we added description of the prevalence of additional salt in Result and a paragraph discussing the salt reduction issue, referring several articles.

Page 3, line 13–14: Abstract
physical and biochemical measurements including glycated hemoglobin (HbA1c).

Page 3, line 15: Abstract
overweight/obesity, hypertension, diabetes (HbA1c ≥6.5%), and dyslipidemia

Page 13, line 12–14: Results
Only 20.4% of men and 21.0% of women reported that they never added table salt to their meals, while 58.3% of men and 54.4% of women always took additional salt.

Page 16, line 22 – page 17, line 4: Discussion
About 80% of participants added table salt to their meals, although the meals were cooked and seasoned with salt. Further studies are needed to determine the amount of salt intake of this population, as we did not measure total salt intake. Our qualitative study found that people in the community sprinkled table salt on rice because they liked salty taste and served salt with meal for welcoming guests [16]. While salt reduction is known to be a cost effective strategy to prevent cardiovascular diseases [38, 39], modifying dietary habit of individuals in short time would be very difficult. Thus, a long term community wide campaign to modify diet is required, as shown in successful examples in Japan [40, 41].

Page 22, line 21 – page 23, line 5: Reference
38 Sutton L, Karan A, and Mahal A. Evidence for cost-effectiveness of lifestyle primary preventions for cardiovascular disease in the Asia-Pacific Region: a systematic review. Global Health 2014;10:79. doi:10.1186/s12992-014-0079-3
39 World Health Organization (WHO). The SHAKE Technical Package for Salt Reduction. Geneva: WHO, 2016.
40 Iso H, Shimamoto T, Naito Y, et al. Effects of a long-term hypertension control program on stroke incidence and prevalence in a rural community in northeastern Japan. Stroke 1998;29:1510–8.
41 Nakagawa H and Miura K. Salt reduction in a population for the prevention of hypertension. Environ Health Prev Med 2004;9:123–9.

3. I have reviewed another manuscript submitted to Environmental Health and Preventive Medicine reporting preliminary data of the same survey. The manuscript accepted for publication could be made available for checking redundancy of results reported here.

The other manuscript describes the findings of a census-like baseline population survey, but not the preliminary findings of this study. We clearly described the difference of the two studies in Methods, as shown below. Since the other manuscript was recently accepted by a journal, we referred it in Methods and added it in Reference.

Page 7, line 24 – page 8, line 5: Methods
Since accurate census data were not available, we conducted a census-like baseline survey targeting all households within the original boundary between August and November, 2014. Persons or family members who made common provision of food and resided under the same roof were regarded as the members of the same household. We identified 8604 households with 34 170 residents, among whom 21 050 were adults between 18 and 64 years of age. The details of the baseline survey were described elsewhere [14].

Page 20, line 10–12: Reference
14. Khalequzzaman M, Chiang C, Hoque BA, et al. Population profile and residential environment of an urban poor community in Dhaka, Bangladesh. Environ Health Prev Med 2017. doi: 10.1186/s12199-017-0595-x (in press)

4. The whole interest of the study is on its target population, urban poor. But subsequently data presentation splits them in to low middle class and poor. Authors should clarify it bringing synergy of the writing in various sections of the manuscript.

Thank you for your comment. This study targeted the urban poor population, however, our previous baseline population survey indicated that the household wealth status somewhat varied among the shantytown dwellers and were categorized into two groups based on the housing structure. Since the term “lower middle wealth” and “low wealth” might have caused confusion, we replaced them as follows throughout the manuscript.

lower middle wealth group → housing level 1 group
low wealth group → housing level 2 group

We also clarified that the all subjects were regarded as the poor in Methods, as shown below. We moved the paragraph explaining the wealth status from ‘Sampling’ to ‘Study site and study population’ section.

Page 8, line 6–15: Methods
While all dwellers of the shantytown were recognized as the urban poor, the findings of the baseline survey indicated that household wealth status somewhat varied among them. We categorized household wealth status into two groups: “housing level 1” households were defined as those living in single- or multi-storied houses with concrete roofs, concrete floors, and brick walls; and “housing level 2” households were defined as those living in houses with tin roofs, mud or wooden floors, and brick, thatch, or bamboo walls. Housing level 1 households usually have their own kitchens and toilets, while several housing level 2 households share a kitchen and a toilet. The baseline survey data showed that 39% of the population in the community belonged to the housing level 1 group, while 61% belonged to the housing level 2 group. There was no difference in the proportion of gender in each group.

Minor points:
1. Lipids were tested in three laboratories; which is considered as standard for comparison? It would be good to have between-laboratory coefficient of variations.

Thank you for your comment. We revised the description of the quality assurance of laboratory tests as shown below.

Page 11, line 1–10: Methods
For quality assurance, 5% split samples of serum total cholesterol were measured in the biochemistry laboratory of Bangabandhu Sheikh Mujib Medical University (BSMMU) and 2.5% spilt samples of HbA1c were measured in the biochemistry laboratory of Bangladesh University of Health Sciences (BUHS), an institution of Bangladesh Diabetic Association. In both cases, similar methods for measurements were used. Coefficient of variations (CVs) for total cholesterol measurement in NHFH&RI and BSMMU were 24.6% and 26.8% and CVs for HbA1c in NHFH&RI and BUHS were 11.4% and 11.6%. The differences between the CVs, tested by Levene's F test, were not significant for both total cholesterol and HbA1c measurements.

2. Authors should preferably provide references for the cut-off points used for quantitative variables.

We have already provided the references for the cut-off point of each variable, as shown below. Following your advice, we increased reference citations in the text. We also added a reference of raised total cholesterol (WHO website).

Page 11, line 16 – page 12, line 2: Methods
We categorized all continuous readings of physical and biochemical measurements according to well-defined standards. Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared, and then categorized into four groups: <18.5, 18.5–24.9, 25–29.9, and ≥30 kg/m2 [17]. Hypertension was defined as SBP ≥140 mmHg, or DBP ≥90 mmHg, or use of any antihypertensive medication [18]. Random blood glucose levels were classified as: <140, 140-199, and ≥200 mg/dL; and HbA1c levels as: <5.7, 5.7–6.4, and ≥6.5% [19]. Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 14, line 2–6: Results
According to WHO recommended cut-off points [24], prevalence of increased waist circumference (men >94 cm; women >80 cm) and increased waist-hip ratio (men ≥0.90; women ≥0.85) were 9.2% and 64.0% in men and 53.2% and 80.2% in women, respectively. Prevalence of increased waist circumference in men was 16.2%, according to the cut-off point for south Asian men (>90 cm) recommended by International Diabetes Federation [24].

Page 14, line 9–10: Results
Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men

Page 14, line 16–21: Results
The prevalence of raised total cholesterol (≥190mg/dL or on medication) was 25.5% in men and 34.4% in women, respectively. High risk range of low HDL-cholesterol level (<40 mg/dL) [20] was 73.3% in men and 56.0% in women, and borderline-high/high level LDL-cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.9% in women. High level of triglycerides (≥200 mg/dL) [20] was more common in men (31.9%) than women (22.4%).

Page 16, line 4–7: Discussion
higher HbA1c level in women than men might have been due to higher prevalence of anemia (hemoglobin <11 mg/dL) [30] in women (14.6%) than men (1.8%), which was reported to shift HbA1c values toward higher ends [31-34]. In our study, we used the WHO recommended HbA1c cut-off point

[35],

Page 20, line 19 – page 20, line 6: Reference
17 WHO Consultation of Obesity. Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: WHO, 2000.
18 Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. JAMA 2003;289:2560–72.
19 American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2014;37(Suppl 1):S81–90.
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.
21 World Health Organization. Prevalence of raised total cholesterol (≥190 mg/dl). http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=2382 (accessed 9 Feb 2017).

Page 21, line 11–12: Reference
24 World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008. Geneva: WHO, 2011.

Page 22, line 2–3: Reference
30 WHO Vitamin and Mineral Nutrition Information System. Hemoglobin concentrations for the diagnosis of anemia and assessment of severity. Geneva: WHO, 2011.

Page 22, line 14–15: Reference
35 World Health Organization. Use of glycated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus: abbreviated report of a WHO consultation. Geneva: WHO, 2010.

3. Tables 3 on mean values of variables should appear before the variables were categorized to report prevalence (table 2) considering natural sequence of data collection and their management; Prevalence values are compared between sexes using statistical tests but mean values are not compared. Is there any reason for this differential approach?

Thank you for the advice. Following your suggestion, we presented mean values and tested gender differences in Table 2 as well.

Following another reviewer's comment, we deleted Table 3 of the original manuscript. We revised tables and Table 3 of the revised manuscript is different from that of the original manuscript.

4. Physical activity data could include discussion of an article, Moniruzzaman M 2016.

Thank you for informing of the newly published article. We referred the article in Result and added it in Reference.

Page 13, line 14–16: Results
Prevalence of moderate or high level of total physical activity (≥600 MET-minutes per week) was 75.3% in men and 31.9% in women, which is comparable with the findings of urban population of 2010 STEPS [22].

Page 21, line 7–8: Reference
22 Moniruzzaman M, Zaman MM, Islalm MS, et al. Physical activity levels in Bangladeshi adults: results from STEPS survey 2010. Public Health 2016;137:131–8.

5. Others

We revised the numbers of references, as we added 8 references. We revised description of citing the below 2 references.

Page 19, line 16–21: Reference
7 Rahman M, Flora MS, Akter SFU, et al. Behavioral risk factors of non-communicable diseases in Bangladesh – tobacco usage, dietary pattern and physical activity status. www.who.int/chp/steps/BangladeshSTEPSReport.pdf?ua=1 (accessed 21 Nov 2016).
8 Bangladesh Society of Medicine, WHO Country Office for Bangladesh, and Ministry of Health and Family Welfare. Non-communicable disease risk factor survey, Bangladesh 2010. New Delhi: WHO Regional Office for South-East Asia, 2011.

Reviewer: 2

General Comments
1. Since this sample is from Dhaka it might not represent the urban poor in the entire Bangladesh. Therefore it is better to include Dhaka in the title also.

Thank you for your comments. We revised the title as below:

Non-communicable disease risk factors among the poor living in a shantytown in Dhaka city, Bangladesh

2. As the authors acknowledge they did not collect fasting blood sample which might be one of the reasons for such a high prevalence of diabetes in this sample. This has not been discussed in the paper.

We do not think the high prevalence of diabetes was caused by the random blood samples. We defined diabetes as HbA1c ≥6.5%, or random blood glucose ≥200 mg/dL, or on diabetes treatment, following internationally recognized standard (reference 19). Over 15% showed high HbA1c, while only about 5% showed high random blood glucose, thus most diabetic cases were identified by the HbA1c value.

We discussed that the HbA1c values might be influenced by the high anemia prevalence among women, as it was reported that anemia might shift HbA1c values to higher ones below the range of less than 6.5%. However, WHO reported that HbA1c value of equal or over 6.5% was reliable to identify diabetes (reference 35), but was unlikely to be influenced by other factors.
We referred the below 2 references.

Page 20, line 24-25: Reference
19 American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2014;37(Suppl 1):S81–90.

Page 22, line 14-15: Reference
35 World Health Organization. Use of glycated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus: abbreviated report of a WHO consultation. Geneva: WHO, 2010.

3. They also did not do any analysis to find out whether some of the STEP 1 variables were associated with STEP 2 or STEP 3 variables.

The purpose of this manuscript is to describe the epidemiological profile of NCD risk factors. We plan to do further statistical analysis as you suggested, and will prepare another manuscript.

4. HDL cut off is different for men (<40 mg /dl) and women (< 50 mg/dl).

In this manuscript, we used an internationally recognized standard reported by "National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report (reference 20)." Reviewing various evidence, the report stated that "The level <40 mg/dL was set as a low HDL cholesterol, both in men and women. …….. Setting a different cutpoint for categorical low HDL cholesterol for men and women was rejected…." Japan Atherosclerosis Society also adapted the same standard, i.e., HDL cholesterol <40 mg/dL for both men and women. In addition, a previous study in Bangladesh used the same cut-off value, <40 mg/dL for both men and women (reference 12). However, we are aware that the different cut-off value, < 50 mg/dl for women, was used as a diagnostic criteria of metabolic syndrome in the same report (reference 20).
Following your advice, we added a new table (Table 3 of the revised manuscript) showing the prevalence of both cut-offs, <40 mg/dL and < 50 mg/dl for women. In Table 2, we also showed prevalence of HDL-cholesterol levels categorized as <40, 40–49, ≥50 mg/dL. We revised the text as shown below. We referred the following references.

Page 11, line 24 – page 12, line 2: Methods
Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 20, line 5–6: Reference
12 Zaman MM, Choudhury SR, Ahmed J, et al. Plasma lipids in a rural population of Bangladesh. Eur J Cardiovasc Prev Rehabil 2006;13:444–8.

Page 21, line 1–3: Reference
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.

5. A thorough spell check and grammar check are required.

Thank you for your advice. We checked the spelling and grammar. We highlighted All corrections in the manuscript.

Specific comments
Abstract
1. Under the outcome measures instead of obesity please use overweight/obesity

Following your advice, we revised obesity to overweight/obesity. (Page 3, line 15)

2. Please provide the actual figure of 59.4% with 95% confidence intervals.

Following your advice, we described the same prevalence rates in abstract as those in tables. Due to the word count limitation (up to 300 words), we could not add confidence intervals in Abstract. However, we added 95% confidence intervals in Tables.

Page 3, line 17-23: Abstract
Prevalence of current tobacco users was 59.4% in men and 21.7% in women. Most of them (91.6%) consumed more than 1 serving of fruits and vegetables per day, however, only 2.5% had more than 5 servings. Overweight/obesity was more common in women (39.3%) than in men (19.4%), while underweight was more common in men (20.5%) than in women (7.1%). Prevalence of hypertension was 18.6% in men and 20.6% in women. Prevalence of diabetes was 15.3% in men and 22.2% in women, much higher than the estimated national prevalence (7%). The prevalence of raised total cholesterol was 25.5% in men and 34.4% in women,

Introduction
3. Introduction section needs to include the important findings from previous studies in Bangladesh and one or two sentences about the WHO STEPs approach

Thank you for your advice. The below paragraph was added to explain WHO STEPS approach and findings of previous surveys.

Page 6, line 12–24: Introduction
The WHO STEPS approach is a simple, standardized and flexible method which can be implemented in any countries for monitoring NCD risk factors, and allows comparison across countries. The STEPS instrument includes: Step 1, questionnaire-based assessment of behavioral risk factors, such as tobacco use, alcohol consumption, diet and physical activity; Step 2, physical measurements of weight, height, waist and hip circumferences, and blood pressure; and Step 3, biochemical measurements of fasting blood glucose and blood lipids such as total cholesterol. The STEPS surveys of 2002, 2010, and 2013 implemented only Step 1 and 2. Measurement of blood glucose and total cholesterol, or Step 3 was conducted only in the 2006 survey. The 2013 STEPS reported prevalence of overweight/obesity as 25.7% (urban 29%, rural 23%), hypertension as 21.4% (urban 27%, rural 18%), and tobacco use as 43.9% (urban 45%, rural 43%) [9]. The STEPS 2006 reported prevalence of diabetes as 5.5% and raised total cholesterol as 6.9% [10].

Methods
4. Definition of a household is missing in the method section.

In this survey, a household was constituted of persons who made common provision of food and usually resided in the house under the same roof. We added the below sentence in Methods.

Page 8, line 1–3: Methods
Persons or family members who made common provision of food and resided under the same roof were regarded as the members of the same household.

5. Since data were collected by interviewing the participants the correct terminology will be interview schedule rather than questionnaire which is usually self-administered by the participants.

We used a modified WHO STEPS instrument, which is a structured questionnaire. Structured questionnaires are often used as a tool of interviews of the surveys such as WHO STEPS, but the term “interview schedule” is not commonly used for describing such studies.

6. Who measured waist and hip circumference of the participants? Did women data collectors take measurements of women?

Female nurses measured women. To clarify this, we added the below sentence in Methods.

Page 10, line 12–13: Methods
Female nurses conducted the anthropometric measurement of women participants.

7. It is not mentioned in which arm (right or left) the blood pressure was measured

The blood pressure of the right arm was measured. To clarify this, we added “right” in the below sentence in Methods.

Page 10, line 15: Methods
measured three times in the right upper arm

8. How many participants were invited for measurements in a day?

We have invited 30 to 50 participants to the study clinic in a day.

9. Was the laboratory accredited for measuring HbA1c and other biochemical measures mentioned in this paper?

The laboratory of National Heart Foundation Hospital and Research Institute has not gone through any accreditation processes for HbA1c and other biochemical tests done in this study. However, the laboratory is providing the clinical biochemistry service to a 300 bed tertiary cardiac care hospital and uses modern fully automated machines which undergo regular quality control procedures.

10. 5% of samples were tested in another lab. What was the coefficient of variation?

Thank you for your comment. We revised the description of the quality assurance of laboratory tests as shown below.

Page 11, line 1–10: Methods
For quality assurance, 5% split samples of serum total cholesterol were measured in the biochemistry laboratory of Bangabandhu Sheikh Mujib Medical University (BSMMU) and 2.5% spilt samples of HbA1c were measured in the biochemistry laboratory of Bangladesh University of Health Sciences (BUHS), an institution of Bangladesh Diabetic Association. In both cases, similar methods for measurements were used. Coefficient of variations (CVs) for total cholesterol measurement in NHFH&RI and BSMMU were 24.6% and 26.8% and CVs for HbA1c in NHFH&RI and BUHS were 11.4% and 11.6%. The differences between the CVs, tested by Levene’s F test, were not significant for both total cholesterol and HbA1c measurements.

11. Measurement of physical activity is not mentioned in the method section and it is provided in the result section. This needs to be provided in the methods

WHO STEPS instrument includes physical activity as one of the core questions of Step 1, a questionnaire-based interview. We described the components of Step 1 in the introduction.

Page 6, line 15–16: Introduction
The STEPS instrument includes: Step 1, questionnaire-based assessment of behavioral risk factors, such as tobacco use, alcohol consumption, diet and physical activity;

12. HDL cut offs are different for men and women and this should be mentioned in the methods

In this manuscript, we used an internationally recognized standard reported by “National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection,

evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report (reference 20)." Reviewing various evidence, the report stated that "The level <40 mg/dL was set as a low HDL cholesterol, both in men and women. …….. Setting a different cutpoint for categorical low HDL cholesterol for men and women was rejected…." Japan Atherosclerosis Society also adapted the same standard, i.e., HDL cholesterol <40 mg/dL for both men and women. In addition, a previous study in Bangladesh used the same cut-off value, <40 mg/dL for both men and women (reference 12). However, we are aware that the different cut-off value, < 50 mg/dl for women, was used as a diagnostic criteria of metabolic syndrome in the same report (reference 20).
Following your advice, we added a new table (Table 3 of the revised manuscript) showing the prevalence of both cut-offs, <40 mg/dL and < 50 mg/dl for women. In Table 2, we also showed prevalence of HDL-cholesterol levels categorized as <40, 40–49, ≥50 mg/dL. We revised the text as shown below. We referred the following references.

Page 11, line 24 – page 12, line 2: Methods
Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 20, line 5–6: Reference
12 Zaman MM, Choudhury SR, Ahmed J, et al. Plasma lipids in a rural population of Bangladesh. Eur J Cardiovasc Prev Rehabil 2006;13:444–8.

Page 21, line 1–3: Reference
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.

13. Waist circumference cut off are provided as > 80 for women and > 94 for men. This needs to be checked again. Is this >=80 and >=90?

As we described in Results, cut-off points of increased waist circumference recommended by WHO are: men >94 cm; women >80 cm. International Diabetes Federation (IDF) recommended cut-off points of increased waist circumference of south Asian men is: >90 cm
We added a new table (Table 3 of the revised manuscript) showing the prevalence of both cut-offs, >90 cm and >94 cm for men.

In Table 2, we also showed prevalence of waist circumference categorized as ≤80, 81–90, 91–94, >94.
The below WHO report was referred.

Page 14, line 2–6: Results
According to WHO recommended cut-off points [24], prevalence of increased waist circumference (men >94 cm; women >80 cm) and increased waist-hip ratio (men ≥0.90; women ≥0.85) were 9.2% and 64.0% in men and 53.2% and 80.2% in women, respectively. Prevalence of increased waist circumference in men was 16.2%, according to the cut-off point for south Asian men (>90 cm) recommended by International Diabetes Federation [24].

Page 21, line 11–12: Reference
24 World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008. Geneva: WHO, 2011.

14. Hemoglobin results are given but no mention about measuring hemoglobin in the method section.

We have already described hemoglobin measurement as shown below.

Page 10, line 22 – page 11, line 1: Methods
and complete blood count. About 10 ml of venous blood was drawn and analyzed at the clinical laboratory of NHFH&RI, using automatic analyzers (Dimension RxL Max, Siemens, USA, for glucose, total, HDL- and LDL-cholesterol, triglycerides and HbA1c; and Hematology Analyzer Mythic 22, Orphee, Switzerland, for hemoglobin, red blood cell, white blood cell and platelet counts).

15. Under ethics it is written that written informed consent was obtained from all participants. However in the study 38.1% of women and 27.3% of men were without any years of education. This needs to be clarified.

Thank you for your comment. To clarify this, we added the below sentence in 'Ethical considerations.'

Page 12, line 14–15: Methods
Participants with no education provided fingerprints on the consent sheets after receiving sufficient verbal explanation.

16. Under data analysis it is written that data were inputted (line 41 in page 9). This needs to be corrected

We revised "input" to "enter", as shown below.

Page 11, line 14: Methods
The anonymized data were entered in a programmed data entry template

Results
17. Page 10 line number 45. Provide the % of 2009 persons out of 2551

We added 78.8%, as shown below.

Page 12, line 20–21: Results
Among the interview participants, 2009 persons (78.8%) participated

18. Page 11 line 14. Physical activity (>600) this needs to be >= 600

Thank you for pointing out the mistake. We corrected it as shown below.

Page 13, line 14–15: Results
Prevalence of moderate or high level of total physical activity (≥600 MET-minutes per week)

19. Use of beedi is missing from the results section

In our manuscript, 'cigarette smoking' included both paper-wrapped cigarettes and other types such as beedi. Following your advice, we replaced 'cigarette smoking' to 'tobacco smoking' in Table 1. We deleted description of smoking in Abstract and revised Results and Discussion as follows.

Page 13, line 2: Results
Tobacco smoking (cigarette, beedi, etc.) was reported only from men

Page 16, line 20: Discussion

women often chewed tobacco but refrained smoking tobacco.

20. Analysis to find out association between STEP 1 and STEP and 3 might be useful. The authors can decide on this.

The purpose of this manuscript is to describe the epidemiological profile of NCD risk factors. We plan to do further statistical analysis as you suggested, and will prepare another manuscript.

References
21. This needs to follow a uniform pattern. Reference # 13 has month volume number etc. where as others do not have these. Reference # 14 is missing volume number. For online journals better to provide DOI

We revised the reference #13 (reference 15 of the revised manuscript). Reference #14 (reference 16 of the revised manuscript) is a paper in a conference proceeding, thus volume number was not available. Doi was added to e-journals as shown below.

Page 19, line 22–24: Reference
9 Zaman MM, Bhuiyan MR, Karim MN, et al. Clustering of non-communicable diseases risk factors in Bangladeshi adults: an analysis of STEPS survey 2013. BMC Public Health 2015;15:659. doi:10.1186/s12889-015-1938-4

Page 20, line 13–14: Reference
15 Kish L. A procedure for objective respondent selection within the household. J Am Stat Assoc. 1949;44:380–7.

Page 21, line 13–15: Reference
25 Sarma H, Saquib N, Hasan MDM, et al. Determinants of overweight or obesity among ever-married adult women in Bangladesh. BMC Obesity 2016;3:13. doi:10.1186/s40608-016-0093-5

Page 22, line 9–11: Reference
33 Hong JW, Ku CR, Noh JH, et al. Association between the presence of iron deficiency anemia and hemoglobin A1c in Korean adults: the 2011-2012 Korea national health and nutrition examination survey. Medicine 2015;94:e825. doi:10.1097/MD.0000000000000825

Page 22, line 16–18: Reference
36 Nargis N, Thompson ME, Fong GT, et al. Prevalence and patterns of tobacco use in Bangladesh from 2009 to 2012: evidence from international tobacco control (ITC) study. PLoS One 2015;10:e0141135. doi:10.1371/journal.pone.0141135

Tables
22. Table 1 title in the bracket valid % is given. Is this an error?

We deleted “valid %” from the title of Table 1.

23. Page 21 line 57. It is better to use any form of tobacco rather than tobacco product use

Thank you for your comment. We revised “tobacco product use” to “any form of tobacco” in Table 1.

24. Table 2. Page 23. Line 44. Hypertension (%) under which authors provide systolic BP in the first raw and diastolic BP in the second raw along with those on medication. This is confusing. This needs to be corrected.

Thank you for the comment. We revised Table 2 to show prevalence of categorized values of systolic blood pressure and diastolic blood pressure. We added a new table (Table 3 of the revised manuscript) to show prevalence of hypertension, BP ≥140/90 mmHg, and BP ≥140/90 mmHg or on medication.

25. Page 24 line 17-22. HDL cholesterol needs to be re-analyzed based on the different cut off for men and women.

In this manuscript, we used an internationally recognized standard reported by "National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report (reference 20)." Reviewing various evidence, the report stated that "The level <40 mg/dL was set as a low HDL cholesterol, both in men and women. …….. Setting a different cutpoint for categorical low HDL cholesterol for men and women was rejected…." Japan Atherosclerosis Society also adapted the same standard, i.e., HDL cholesterol <40 mg/dL for both men and women. In addition, a previous study in Bangladesh used the same cut-off value, <40 mg/dL for both men and women (reference 12). However, we are aware that the different cut-off value, < 50 mg/dl for women, was used as a diagnostic criteria of metabolic syndrome in the same report (reference 20).
Following your advice, we added a new table (Table 3 of the revised manuscript) showing the prevalence of both cut-offs, <40 mg/dL and < 50 mg/dl for women. In Table 2, we also showed prevalence of HDL-cholesterol levels categorized as <40, 40–49, ≥50 mg/dL. We revised the text as shown below. We referred the following references.

Page 11, line 24 – page 12, line 2: Methods
Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 20, line 5–6: Reference
12 Zaman MM, Choudhury SR, Ahmed J, et al. Plasma lipids in a rural population of Bangladesh. Eur J Cardiovasc Prev Rehabil 2006;13:444–8.

Page 21, line 1–3: Reference
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.

Reviewer: 3

1. Page 5: In the second paragraph of the introduction, while mentioning about several STEPS survey in Bangladesh, would be good to highlight some relevant findings from those for e.g. risk factors prevalence especially urban vs rural.

Thank you for your advice. We added some of the findings of the previous STEPS surveys as shown below.

Page 6, line 19–24: Introduction
The STEPS surveys of 2002, 2010, and 2013 implemented only Step 1 and 2. Measurement of blood glucose and total cholesterol, or Step 3 was conducted only in the 2006 survey. The 2013 STEPS reported prevalence of overweight/obesity as 25.7% (urban 29%, rural 23%), hypertension as 21.4% (urban 27%, rural 18%), and tobacco use as 43.9% (urban 45%, rural 43%) [9]. The STEPS 2006 reported prevalence of diabetes as 5.5% and raised total cholesterol as 6.9% [10].

2. Page 7: Sampling details para 2: The sample size has been mentioned as 4000. Was there a basis for estimation or was it calculated using some process? Following that, how was the sample of 1000 men and 1000 women in each wealth selected? The detail of sampling process would be required with explanation of each steps of sampling.

As we wrote in Methods we targeted 2000 subject. Therefore, the sample size was not 4000. We recruited subjects until the number of each strata reached over 500.
We revised the details of sampling as follows.

Page 8, line 18 – page 9, line 8: Methods
We applied stratified random sampling according to gender and the housing wealth status. Taking into account of statistical significance and study feasibility, we targeted to recruit at least 2000 subjects in total, or 500 subjects in each of the four strata: men and women in the housing level 1 and the housing level 2 groups. To achieve the target, we randomly selected 1000 households for men and 1000 households for women in each housing level group at the outset of the study. In total, 4000 households were selected, considering the possibilities that an eligible person may be unavailable in the assigned household or decline participation. We recruited one adult aged 18-64 years from each selected household by using Kish grid [15], until the total recruited subjects in each strata surpassed 500. Pregnant women were excluded. We stopped recruiting after visiting 3560 selected households. Among the 3560 selected households, 576 households were found ineligible due to absence of any eligible persons. Out of 2986 eligible households with one eligible person, 435 selected persons declined or were unavailable. Finally, 2551 subjects completed the interview conducted at their home (interview response rate: 85.4%) and 2009 subjects came to a study clinic in the National Heart Foundation Hospital and Research Institute (NHFH&RI) to complete physical and biochemical measurements (response rate: 67.3%).

3. Page 9: Data analysis line 54 to 57: It is suggested to mention with clarity what does different levels of glucose, HbA1c and cholesterol mean?

We described the meaning of different levels of glucose and HbA1c in Results. We added definition of raised total cholesterol in Results. We added a new table (Table 3 of the revised manuscript) showing the prevalence of the high risk level of each indicator.

Page 14, line 9–10: Results
Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men

Page 14, line 16–21: Results
The prevalence of raised total cholesterol (≥190mg/dL or on medication) was 25.5% in men and 34.4% in women, respectively. High risk range of low HDL-cholesterol level (<40 mg/dL) [20] was 73.3% in men and 56.0% in women, and borderline-high/high level LDL-cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.9% in women. High level of triglycerides (≥200 mg/dL) [20] was more common in men (31.9%) than women (22.4%).

3-2. As this was a prevalence study and the sampling was stratified, ideally it would be required to

carry out a complex sample analysis along with weighted analysis. Was this done in the analysis? Even if it was not done, it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study.

Thank you for the pertinent comment. Instead of carrying out additional analyses taking account of the complex sampling procedure, we clarified that prevalence for the total men or total women presented in the manuscript were simple unweighted ones. Also, we described prevalence separately for men and women in the housing level 1 and hosing level 2 when appropriate. We have also confirmed that conclusion was not drawn based only on simple unweighted estimates. Finally, we added this issue as a limitation as shown below.

Page 3, line 14: Abstract
Simple unweighted prevalence of NCD risk factors,

Page 5, line 13–14: Strengths and limitations of this study
The results of this study were obtained from a simple unweighted analysis, and they might reflect the attributes of the selected participants in the study.

Page 12, line 3: Methods
Simple unweighted prevalence was used in the present paper.

Page 12, lines 25 – page 13, line 7: Results
Current tobacco users were 59.4% of men (54.6% in the housing level 1 and 64.2% in the housing level 2) and 21.7% of women (14.8% in the housing level 1 and 29.1% in the housing level 2). Tobacco smoking (cigarette, beedi, etc.) was reported only from men (52.3% in total, 48.7% in the housing level 1 and 55.8% in the housing level 2). Smokeless tobacco chewing was more common in women (21.7% in total, 14.8% in the housing level 1 and 29.1% in the housing level 2) than men (15.5% in total, 11.6% in the housing level 1 and 19.3% in the housing level 2). Alcohol drinking was reported only from men (3.5% in total, 4.6% in the housing level 1 and 2.3% in the housing level 2).

Page 13, line 10–12: Results
Those who had less than 1 serving were 7.1% of men (7.3% in the housing level 1 and 6.9 % in the housing level 2) and 9.7% of women (3.3% in the housing level 1 and 16.5% in the housing level 2).

Page 14, line 9–11: Results
Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men (13.7% in the housing level 1 and 16.9% in the housing level 2) and 22.2% in women (20.7% in the housing level 1 and 23.7% in the housing level 2),

Page 15, line 17–18: Discussion
Although we used simple unweighted prevalence, our findings showed prevalence of diabetes was much higher than the WHO estimated national prevalence [23]

Page 17, line 13–18: Discussion
Third, simple unweighted prevalence was presented for the prevalence of total participants in the present analysis. However, we refrained from drawing conclusions using unweighted simple prevalence, and we depicted prevalence separately for housing level 1 and 2 when appropriate. Nevertheless, it should be noted that prevalence estimates presented for all participants, where the housing level 1 group (39% of total population) over-represented, might not represent the whole target population.

4. Page 10: Results: the overall response even in the questionnaire-based interview seems quite low

only about 64%.

We targeted at least 2000 subject in total and recruited them until the number of subjects in each four strata reached 500. We revised 'Sampling' section as shown below. Response rate to the interview was 85.4%, and response rate to physical and biochemical measurements was 67.3%, which seems to be reasonably high.

Page 8, line 18 – page 9, line 8: Methods
We applied stratified random sampling according to gender and the housing wealth status. Taking into account of statistical significance and study feasibility, we targeted to recruit at least 2000 subjects in total, or 500 subjects in each of the four strata: men and women in the housing level 1 and the housing level 2 groups. To achieve the target, we randomly selected 1000 households for men and 1000 households for women in each housing level group at the outset of the study. In total, 4000 households were selected, considering the possibilities that an eligible person may be unavailable in the assigned household or decline participation. We recruited one adult aged 18-64 years from each selected household by using Kish grid [15], until the total recruited subjects in each strata surpassed 500. Pregnant women were excluded. We stopped recruiting after visiting 3560 selected households. Among the 3560 selected households, 576 households were found ineligible due to absence of any eligible persons. Out of 2986 eligible households with one eligible person, 435 selected persons declined or were unavailable. Finally, 2551 subjects completed the interview conducted at their home (interview response rate: 85.4%) and 2009 subjects came to a study clinic in the National Heart Foundation Hospital and Research Institute (NHFH&RI) to complete physical and biochemical measurements (response rate: 67.3%).

5. Page 11: Line 18 to 23: With regards to the analysis of different behavioral as well as biological risk factors, it would be good to present the results with 95% CI from which one could see the statistical differences in prevalence among sub groups.

Thank you for the comment. We revised tables. We presented 95% CIs and statistical significance of the difference in Table 2 and Table 3 of the revised manuscript.

6. The tables presented would be better organized in the following way: I would suggest limiting table 1 to just background characteristics. Then table 2 may include all the behavioral risk factors prevalence starting from smoking. Table 3 can be reorganized in a way that gives a meaningful presentation. It is advisable to present the findings as prevalence of overweight and obesity rather than just populating different categories of BMI. This would look good with 95% CI. The same approach can be taken for all the variables e.g. prevalence of increased waist hip ratio, hypertension, and so on.

Thank you for the comment. We revised tables and presented 95% CIs and statistical significance of the difference. We deleted Table 3 of the original manuscript, and added a new table (Table 3 of the revised manuscript) to show prevalence of NCD biological risk factors such as hypertension, diabetes, and dyslipidemia. It was not feasible to combine a part of Table 1 and Table 2, due to the difference of sample numbers.

7. Table 3 did not look so appealing to me. Does the sample size taken for the study allows such large sub group analysis? What authors want to highlight with this table is not clear.

Thank you for your thoughtful advice. We deleted the Table 3 of the original manuscript.

8. Discussion
The authors have compared the current findings with national estimates and previous surveys. It

needs to be first clarified as mentioned in the comments above for methodology that this study followed a complete probability sample design during sampling and a complex sample analysis while producing the results.

Thank you for the pertinent comment. Instead of carrying out additional analyses taking account of the complex sampling procedure, we clarified that prevalence for the total men or total women presented in the manuscript were simple unweighted ones. Also, we described prevalence separately for men and women in the housing level 1 and hosing level 2 when appropriate. We have also confirmed that conclusion was not drawn based only on simple unweighted estimates. Finally, we added this issue as a limitation as shown below.

Page 3, line 14: Abstract
Simple unweighted prevalence of NCD risk factors,

Page 5, line 13–14: Strengths and limitations of this study
The results of this study were obtained from a simple unweighted analysis, and they might reflect the attributes of the selected participants in the study.

Page 12, line 3: Methods
Simple unweighted prevalence was used in the present paper.

Page 12, lines 25 – page 13, line 7: Results
Current tobacco users were 59.4% of men (54.6% in the housing level 1 and 64.2% in the housing level 2) and 21.7% of women (14.8% in the housing level 1 and 29.1% in the housing level 2). Tobacco smoking (cigarette, beedi, etc.) was reported only from men (52.3% in total, 48.7% in the housing level 1 and 55.8% in the housing level 2). Smokeless tobacco chewing was more common in women (21.7% in total, 14.8% in the housing level 1 and 29.1% in the housing level 2) than men (15.5% in total, 11.6% in the housing level 1 and 19.3% in the housing level 2). Alcohol drinking was reported only from men (3.5% in total, 4.6% in the housing level 1 and 2.3% in the housing level 2).

Page 13, line 10–12: Results
Those who had less than 1 serving were 7.1% of men (7.3% in the housing level 1 and 6.9 % in the housing level 2) and 9.7% of women (3.3% in the housing level 1 and 16.5% in the housing level 2).

Page 14, line 9–11: Results
Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men (13.7% in the housing level 1 and 16.9% in the housing level 2) and 22.2% in women (20.7% in the housing level 1 and 23.7% in the housing level 2),

Page 15, line 17–18: Discussion
Although we used simple unweighted prevalence, our findings showed prevalence of diabetes was much higher than the WHO estimated national prevalence [23]

Page 17, line 13–18: Discussion
Third, simple unweighted prevalence was presented for the prevalence of total participants in the present analysis. However, we refrained from drawing conclusions using unweighted simple prevalence, and we depicted prevalence separately for housing level 1 and 2 when appropriate. Nevertheless, it should be noted that prevalence estimates presented for all participants, where the housing level 1 group (39% of total population) over-represented, might not represent the whole target

population.

8-2. Further on, in page 13 line 34 to 38, it has been mentioned that the diabetes prevalence was higher in lower wealth group compared to lower middle wealth group, but the analysis do not show any kind of statistical tests performed for testing the differences.

Regarding demographic indicators and behavioral risk factors, we added the description of statistical significance between the two housing groups in the text, although we did not show it in Table 1. Regarding physical and biochemical risk factors, we did not find any significant difference between two housing groups. We revised the Result and Discussion as shown below.

Page 13, line 17–20: Results
Comparing to the housing level 1 group, the housing level 2 group participants were less likely to: be educated, be employed, have fruits and vegetable; and add salt. They were more likely to be: day laborers; tobacco users; and physically active (P <0.05 for all, not shown in the Tables).

Page 14, line 22–24: Results
Regarding the prevalence of physical and biochemical risk factors, such as overweight/obesity, hypertension, diabetes and dyslipidemia, significant difference was not found between the housing level 1 and the housing level 2 groups (not shown in Tables).

Page 15, line 23–25: Discussion
The higher diabetes prevalence among the urban poor may be attributed to childhood undernutrition, but requires further investigation.

9. Considering all these issues, the results section need a complete revision. Abstract Summary: The summary could be improvised following the revision of the whole paper.

Following the three reviewers' comments, we revised the whole manuscript, including abstract and tables.

VERSION 2 – REVIEW

REVIEWER	Dr M Mostafa Zaman World Health Organization Bangladesh I have co-authored several articles with one of the co-authors of this manuscript (SRC)
REVIEW RETURNED	08-Mar-2017

GENERAL COMMENTS	The manuscript has improved substantially in line with comments given by reviewers. At this stage I have a few points for considerations: 1. The objective in the Abstract needs to be aligned with the Title of the study and the objective given in the Introduction section; 2. I still have a little concern about the difference between number of subjects of the two reports (current one and the Reference 13 of the

	same survey). I raised this point in my earlier review also (point # 3). Authors may kindly provide specific response to this. In Table 2 of the reference 13 (that will be published soon) the number of subjects for whom interview data reported was 7,616. Results were presented for tobacco (any form), smoking cigarettes, smokeless tobacco chewing, etc. Data were collected through same approach (interview). In the current report the number of subjects for such data is 2,551 only. The authors should clarify this difference in the Methods section to avoid confusions after publishing the article; 3. Co-efficient of variation between NHF and BSMMU for cholesterol (about 25%) and NHF and BUHS for HbA1c (about 11%) appear to be very high (page 11 lines 21-30) given that all labs used same unit of measurement (I guess). This probably goes against the claim of strength given in the Highlights (page 5 third bullet) and in the Discussion section (page 17 lines 21-30); 4. Hemoglobin levels presented on Table 2 has not received any attention in the text. Either it has to be described somewhere or to be dropped from the Table;

REVIEWER	K R Thankappan Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India
REVIEW RETURNED	01-Mar-2017

GENERAL COMMENTS	Include study design in the title also.

REVIEWER	Krishna Kumar Aryal Nepal Health Research Council, Nepal
REVIEW RETURNED	19-Mar-2017

GENERAL COMMENTS	, I regret to mention that the authors have not made changes based on the comments provided, except they included a bit about the risk factors prevalence in introduction from STEPS surveys, and have included 95% CI in table 3. Apart from that none of the previously made comments are addressed. The methods still do not give the complete and appropriate details of the sampling technique. The variables are not defined clearly. And especially the results section needs a complete rework which was suggested in the first comment but none has been done. Authors may refer to similar other articles from STEPS to populate the result in more scientific way. I leave up to the editors to decide.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 2

1. Include study design in the title also.

Thank you for your comments. We added “prevalence of” and “a community based cross-sectional survey” to the title as shown below.

Page 1: Title

Prevalence of non-communicable disease risk factors among the poor living in a shantytown in Dhaka city, Bangladesh: a community based cross-sectional survey

Reviewer: 1

1-1. The manuscript has improved substantially in line with comments given by reviewers.

Thank you very much for recognizing the value of our revised manuscript.

1. The objective in the Abstract needs to be aligned with the Title of the study and the objective given in the Introduction section;

The title, the objective in the Abstract, and the objective in Introduction are consistent, while keeping the word count restriction, as shown below.

Page 1: Title

Prevalence of non-communicable disease risk factors among the poor living in a shantytown in Dhaka city, Bangladesh: a community based cross-sectional survey

Page 3, line 2–3: Abstract

Objectives: This study aims to describe non-communicable disease (NCD) risk factor prevalence of the urban poor in Bangladesh.

Page 6, line 10–11: Introduction

This paper aims to describe the prevalence of NCD risk factors among the urban poor in Dhaka city, Bangladesh.

2. I still have a little concern about the difference between number of subjects of the two reports (current one and the Reference 13 of the same survey). I raised this point in my earlier review also (point # 3). ……The authors should clarify this difference in the Methods section to avoid confusions after publishing the article.

In the previous response, we had already clarified that this manuscript and another paper reported two different studies. While this manuscript reports prevalence of selected NCD risk factors of the sampled individuals, the other manuscript describes baseline household profile of the whole target area. We clearly described the difference of the two studies in Methods, as shown below. Since the other paper has been published, we revised the description of reference 14, as well.

The below list aimed to summarize the difference between the current prevalence study and the previous household survey conducted prior to the current study. The contents of the list were described in each paper.

Difference between the prevalence study [this manuscript] and the household survey [reference 14]

Prevalence study [this manuscript]

- Study period: October 2015 – April 2016

- Objective: To describe prevalence of selected NCD risk factors

- Sampling method: Stratified random sampling

- Questionnaire: Modified WHO STEPS instrument [16 pages]

- Data collection: Interview + physical measurement + blood biochemical measurement

- Number of studied individuals: Interview = 2,551; Interview + physical/biochemical measurement = 2,009

Household survey [reference 14]

- Study period: August – November, 2014

- Objective: To identify the number of households and the number of eligible individuals in the study area

- Sampling method: Complete count

- Questionnaire: A table of household member information [1 page]

- Data collection: Interview to one adult representing each household

- Number of households: Interview = 8,604 households; Self-reported health-related indicators of the interview-respondent representing each household = 7,616

Page 6, line 23 – page 7, line 4: Methods

Since accurate census data were not available, we conducted a census-like baseline survey targeting all households within the original boundary between August and November, 2014. Persons or family members who made common provision of food and resided under the same roof were regarded as the members of the same household. We identified 8604 households with 34 170 residents, among whom 21 050 were adults between 18 and 64 years of age. The details of the household survey were described elsewhere [14].

Page 19, line 10–12: Reference

14. Khalequzzaman M, Chiang C, Hoque BA, et al. Population profile and residential environment of an urban poor community in Dhaka, Bangladesh. Environ Health Prev Med 2017;22:1. doi:10.1186/s12199-017-0610-2.

3. Co-efficient of variation between NHF and BSMMU for cholesterol (about 25%) and NHF and BUHS for HbA1c (about 11%) appear to be very high….. This probably goes against the claim of strength given in the Highlights and in the Discussion section

Following a previous comment of the reviewer 2, we presented co-efficient of variation (CV) of the specimens of the study subjects and found no significant difference between the CVs of the specimens measured in different laboratories, tested by Levene's F test. The CVs showed the variation of the measurements among the study subjects.

However, the reviewer 1 might assume that the CVs in the manuscript were the CVs of repeated measurements of the same standard specimen, an indicator for quality assurance.

In order to avoid misunderstanding and confusion, we deleted the description of double check of the measurement by other laboratories and the CVs in Methods, and revised the Methods as below. We consider the measurements, done by high-performance automatic analyzers which were regularly calibrated, were accurate and reliable.

Page 10, line 2–6: Methods

About 10 ml of venous blood was drawn and analyzed at the clinical laboratory of the National Heart Foundation Hospital and Research Institute, using calibrated automatic analyzers (Dimension RxL Max, Siemens, USA, for glucose, total, HDL- and LDL-cholesterol, triglycerides and HbA1c; and Hematology Analyzer Mythic 22, Orphee, Switzerland, for hemoglobin, red blood cell, white blood cell and platelet counts).

4. Hemoglobin levels presented on Table 2 has not received any attention in the text. Either it has to be described somewhere or to be dropped from the Table

We discussed the issue that higher HbA1c level in women than men might relate to lower hemoglobin level in women than men, as shown below. Therefore, it is necessary to show hemoglobin levels in the table.

Page 14, line 25 – page 15, line 5: Discussion

However, higher HbA1c level in women than men might have been due to higher prevalence of anemia (hemoglobin <11 mg/dL) [30] in women (14.6%) than men (1.8%), which was reported to shift HbA1c values toward higher ends [31-34]. In our study, we used the WHO recommended HbA1c cut-off point [35], but caution is needed in light of the high anemia prevalence. Further studies are required to fully understand and interpret HbA1c value in low and lower-middle income countries.

Reviewer: 3

1. The authors have not made changes based on the comments provided, except they included a bit about the risk factors prevalence in introduction from STEPS surveys, and have included 95% CI in table 3. Apart from that none of the previously made comments are addressed.

We respectfully disagree with the reviewer 3 regarding this opinion. We incorporated almost all comments of the reviewer 3, and revised the manuscript, including the revision of Table 3. While taking into account of word count limitation, we sufficiently added the findings of previous studies, as shown below.

And, instead of carrying out additional analyses taking into account of the sampling weight, we clarified that prevalence for the total men or total women presented in the manuscript were simple unweighted ones. Also, we described prevalence and mean values separately for men and women in the housing level 1 and hosing level 2 in Tables and in the text when appropriate. We have confirmed that conclusion was not drawn based only on simple unweighted estimates but stratified analyses by housing level revealed the same gender differences, and added this issue as a limitation as shown below.

Page 3, line 14–16: Abstract

Prevalence of NCD risk factors, such as tobacco use, fruits and vegetable intake, overweight/obesity, hypertension, diabetes (HbA1c ≥6.5%), and dyslipidemia according to the household wealth status and their difference by gender were described.

Page 4, line 13–14: Strengths and limitations of this study

The prevalence of total participants was obtained from an unweighted analysis. However, the same gender differences were observed in stratified analysis by the housing level.

Page 5, line 19–24: Introduction

The STEPS surveys of 2002, 2010, and 2013 implemented only Step 1 and 2. The 2006 survey conducted Step 3, measurement of blood glucose and total cholesterol, as well. The 2013 STEPS reported prevalence of overweight/obesity as 25.7% (urban 29%, rural 23%), hypertension as 21.4% (urban 27%, rural 18%), and tobacco use as 43.9% (urban 45%, rural 43%) [9]. The 2006 STEPS reported prevalence of diabetes as 5.5% and raised total cholesterol as 6.9% [10].

Page 10, line 24–25: Methods

The prevalence in total men or women regardless of the sampling unit of housing level was obtained from unweighted analyses.

Page 11, lines 22 – page 12, line 4: Results

Current tobacco users were 59.4% of men (54.6% in the housing level 1 and 64.2% in the housing level 2) and 21.7% of women (14.8% in the housing level 1 and 29.1% in the housing level 2). Tobacco smoking (cigarette, beedi, etc.) was reported only from men (52.3% in total, 48.7% in the housing level 1 and 55.8% in the housing level 2). Smokeless tobacco chewing was more common in women (21.7% in total, 14.8% in the housing level 1 and 29.1% in the housing level 2) than men (15.5% in total, 11.6% in the housing level 1 and 19.3% in the housing level 2). Alcohol drinking was reported only from men (3.5% in total, 4.6% in the housing level 1 and 2.3% in the housing level 2).

Page 12, line 7–9: Results

Those who had less than 1 serving were 7.1% of men (7.3% in the housing level 1 and 6.9 % in the housing level 2) and 9.7% of women (3.3% in the housing level 1 and 16.5% in the housing level 2).

Page 13, line 6–9: Results

Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men (13.7% in the housing level 1 and 16.9% in the housing level 2) and

22.2% in women (20.7% in the housing level 1 and 23.7% in the housing level 2), much higher than the WHO estimated national prevalence (men 8.6%; women 7.4%) [23].

Page 14, line 14–15: Discussion

The prevalence of diabetes in both housing levels and in both genders were much higher than the WHO estimated national prevalence [23],

Page 16, line 9–14: Discussion

Third, unweighted prevalence was presented for the prevalence of total participants in the present analysis. However, we refrained from drawing conclusions using unweighted prevalence, and we depicted prevalence separately for housing level 1 and 2 when appropriate. Nevertheless, it should be noted that prevalence estimates presented for all participants, where the housing level 1 group (39% of total population) over-represented, might not represent the whole target population.

Page 23: Table 1

Mean value and 95% CI of age in men and women of the housing level 1 and hosing level 2 are presented separately.

Page 26–28: Table 2

Mean values and 95% CI of each measurement in men and women of the housing level 1 and hosing level 2 are presented separately.

2. The methods still do not give the complete and appropriate details of the sampling technique.

Responding the reviewer's comment, we revised the details of sampling as follows. In this revision, we have added detailed information about sample size calculation.

Page 7, line 17 – page 8, line 11: Methods

We applied stratified random sampling procedure according to gender and the housing wealth status. Target sample size was calculated using the mean and standard deviation of BMI (20.9 and 4.2, respectively in men) from the 2010 STEPS Survey [11]. We set the difference in the mean BMI between housing level groups to be 1.0, and type I and II errors to be 0.05 and 0.2, respectively. Although the necessary sample size was calculated to be approximately 300, we decided to sample 500 individuals in each housing level and gender stratum to obtain enough statistical power (at least 2000 subjects in total). Since only one person was sampled from one household, we randomly selected 1000 households for men and 1000 households for women in each housing level group at

the outset of the study. In total, 4000 households were selected, considering the possibilities that an eligible person may be unavailable in the assigned household or decline participation as suggested by the STEPS survey guideline (80% response rate) [6]. We recruited one adult aged 18-64 years from each selected household by using Kish grid [15], until the total recruited subjects in each stratum surpassed 500. Pregnant women were excluded. We visited 3560 out of 4000 selected households as the number of individuals with complete data reached 2000. Specifically, among the 3560 selected households, 576 households were found ineligible due to absence of any eligible persons. Out of 2986 eligible households with one eligible person, 435 selected persons declined or were unavailable. Finally, 2551 subjects completed the interview conducted at their home (interview response rate: 85.4%) and 2009 subjects came to a study clinic in the National Heart Foundation Hospital and Research Institute to complete physical and biochemical measurements (response rate: 67.3%).

3. The variables are not defined clearly.

We sufficiently described definition of each variable and provided the references for the cut-off point of each variable, as shown below.

Page 10, line 14–23: Methods

We categorized all continuous readings of physical and biochemical measurements according to well-defined standards. Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared, and then categorized into four groups: <18.5, 18.5–24.9, 25–29.9, and ≥30 kg/m2 [17]. Hypertension was defined as SBP ≥140 mmHg, or DBP ≥90 mmHg, or use of any antihypertensive medication [18].

Random blood glucose levels were classified as: <140, 140-199, and ≥200 mg/dL; and HbA1c levels as: <5.7, 5.7–6.4, and ≥6.5% [19]. Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 12, line 24 – page 13, line 3: Results

According to WHO recommended cut-off points [24], prevalence of increased waist circumference (men >94 cm; women >80 cm) and increased waist-hip ratio (men ≥0.90; women ≥0.85) were 9.2% and 64.0% in men and 53.2% and 80.2% in women, respectively. Prevalence of increased waist circumference in men was 16.2%, according to the cut-off point for south Asian men (>90 cm) recommended by International Diabetes Federation [24].

Page 13, line 6–7: Results

Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.3% in men

Page 13, line 13–18: Results

The prevalence of raised total cholesterol (≥190mg/dL or on medication) was 25.5% in men and 34.4% in women, respectively. High risk range of low HDL-cholesterol level (<40 mg/dL) [20] was 73.3% in men and 56.0% in women, and borderline-high/high level LDL-cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.9% in women. High level of triglycerides (≥200 mg/dL) [20] was more common in men (31.9%) than women (22.4%).

Page 14, line 25 – page 15, line 3: Discussion

However, higher HbA1c level in women than men might have been due to higher prevalence of anemia (hemoglobin <11 mg/dL) [30] in women (14.6%) than men (1.8%), which was reported to shift HbA1c values toward higher ends [31-34]. In our study, we used the WHO recommended HbA1c cut-off point [35],

Page 19, line 19 – page 20, line 6: Reference

17 WHO Consultation of Obesity. Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: WHO, 2000.

18 Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. JAMA 2003;289:2560–72.

19 American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2014;37(Suppl 1):S81–90.

20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.

21 World Health Organization. Prevalence of raised total cholesterol (≥190 mg/dl). http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=2382 (accessed 9 Feb 2017).

Page 20, line 11–12: Reference

24 World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008. Geneva: WHO, 2011.

Page 21, line 2–3: Reference

30 WHO Vitamin and Mineral Nutrition Information System. Hemoglobin concentrations for the diagnosis of anemia and assessment of severity. Geneva: WHO, 2011.

Page 21, line 14–15: Reference

35 World Health Organization. Use of glycated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus: abbreviated report of a WHO consultation. Geneva: WHO, 2010.

4. And especially the results section needs a complete rework which was suggested in the first comment but none has been done. Authors may refer to similar other articles from STEPS to populate the result in more scientific way.

This manuscript aims to present prevalence of selected NCD risk factors as an epidemiological profile of the urban poor in a shantytown in Dhaka, but does not aim to conduct multivariable analyses for examining differences between housing levels or genders. We would like the reviewer 3 to understand that a complete revision of Result would be beyond the scope and objectives of the manuscript, which would be pursued in the future manuscript.

VERSION 3 - REVIEW

REVIEWER	Dr M Mostafa Zaman WHO, Bangladesh I have published several articles with one of the co-authors (SRC) of this manuscript!
REVIEW RETURNED	12-Apr-2017

GENERAL COMMENTS	The submission has improved in terms of clarity. I have two minor points before it is considered for publication: 1. ABSTRACT: Age group "aged 18 to 64 years" could be avoided in the setting section because it is given again in the participants section; 2. METHODS: Confusion regarding number of participants is now clear. However the differences in prevalence of tobacco use use (smoking, chewing, any form) between two surveys deserves a brief discussion in the Discussion section. Now it poses a question for those products for which you observed a big difference, e.g., 25.4% (previous report) versus 15.5% (current one one about an year apart) prevalence of chewing tobacco in men. Which prevalence figure readers should use for Bauniabadh people?

REVIEWER	Krishna Kumar Arya Nepal Health Research Council, Nepal
REVIEW RETURNED	26-Apr-2017

GENERAL COMMENTS	Sampling:

	Please specify which type of random sampling was used to sample 1000 households. This is still missing. It is not good to just mention random sampling - it could be way from simple random sampling to systematic sampling to multistage sampling. Data Analysis "Data analysis line 54 to 57: Alike the definition of hypertenstion, the authors would define the variable blood glucose level to different categories of raised blood glucose or diabetes mellitus. The authors have now mentioned that blood glucose levels were classified..... and HBA1C levell were classified....total cholesterol levels were classified...which does not mention about the the meaning of different levels. So it is suggested to mention with clarity what does different levels of glucose, HBA1C and cholesterol mean?" "As this was a prevalence study and the sampling was stratified, ideally it would be required to carry out a complex sample analysis along with weighted analysis. Was this done in the analysis? This needs to be mentioned. Even if it was not done, then also it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study. " The above comments made during the first review for data analysis section have not been answered nor the authors have given any justifications for these comments. It will be good to have the correction or justification.

VERSION 3 – AUTHOR RESPONSE

Reviewer 1

The submission has improved in terms of clarity.

Thank you for recognizing the value of our manuscript.

1. ABSTRACT: Age group "aged 18 to 64 years" could be avoided in the setting section because it is given again in the participants section;

We thought that we should describe the total number of the target age group in the study site, which determined by the previous household survey, in “Setting” of the Abstract. However, since the reviewer recommended not to describe the number, we described the total population of the study site instead of the total population of the target age group.

Page 3, line 5–6: Abstract
There were 8604 households with 34 170 residents in the community.

2. METHODS: Confusion regarding number of participants is now clear.

Thank you for understanding it.

3. The differences in prevalence of tobacco use (smoking, chewing, any form) between two surveys deserves a brief discussion in the Discussion section……..

As the reviewer indicated, the prevalence of tobacco use were described in the current study as well as in the household survey conducted prior to the current study. As shown in the below list, the tobacco use prevalence of this study was similar to the prevalence reported in the previous household

survey, except for the prevalence of smokeless tobacco use among men. (Following another reviewer's advice, we carried out analyses that used sampling weights by housing levels in men and women, therefore the prevalence in the below list is slightly different from that in the previous manuscript.) This could result from unspecified random variation, but might have happened because the respondents of the previous household survey included older men. In the previous household survey (reference 14), the respondents were adults who was available at the time of the household visit. We interviewed only one adult in each household. Therefore, male respondents were much less than female respondents and included older males. Since overall prevalence of tobacco use of the two studies was similar, we did not add paragraphs in Discussion, considering the word count limitation.

Difference between the prevalence study [this manuscript] and the household survey [reference 14]

Prevalence study [this manuscript]
- Subject: 18-64 year old men and women (stratified random sampling)
- Any form of tobacco (%): men (current) 60.4 (ex) 5.4; women (current) 23.5 (ex) 2.1
- Tobacco smoking (%): men (current) 53.0 (ex) 6.3; women (current) 0.0 (ex) 1.3
- Smokeless tobacco chewing (%): men (current) 16.3 (ex) 1.7; women (current) 23.5 (ex) 1.5

Household survey [reference 14]
- Subject: respondents of the household survey (one adult in each household who was at home at the time of the survey)
- Tobacco product use (%): men 61.0; women 23.2
- Smoking cigarettes (%): men 50.4; women 1.3
- Chewing smokeless tobacco (%): men 25.4; women 22.3

Reviewer 3

1. Sampling: Please specify which type of random sampling was used to sample 1000 households. ……it could be way from simple random sampling to systematic sampling to multistage sampling.

Simple random sampling was used. We added the description as shown below.

Page 3, line 9: Abstract
…..selected by simple random sampling……

Page 7, line 17–18: Methods
We applied simple random sampling procedure stratified according to gender and the household wealth status.

2. Data Analysis ……. The authors have now mentioned that blood glucose levels ..... and HBA1C levels …....total cholesterol levels were classified...which does not mention about the meaning of different levels. So it is suggested to mention with clarity what does different levels of glucose, HBA1C and cholesterol mean?

As described in Method, "Data analysis," we categorized all continuous readings of physical and biochemical measurements according to well-defined standards. The meaning of each category is listed below. We described high risk levels of each indicator in the text and Table 3, as shown below. Considering the word count limitation, we did not describe the meanings of all categories, which could be easily found in the references.

- BMI (kg/m2): underweight <18.5; normal 18.5–24.9; overweight 25–29.9; obesity ≥30
- Blood pressure (mmHg): normal SBP<120 and DBP<80; prehypertension SBP 120–139 or DBP 80–89; hypertension SBP ≥140 or DBP ≥90
- Random blood glucose (mg/dL): normal <140; prediabetes 140-199; diabetes ≥200
- HbA1c (%): normal <5.7; prediabetes 5.7–6.4; diabetes ≥6.5
- Total cholesterol (mg/dL): low <150; normal 150–189; raised (WHO) ≥190; borderline high (NCEP) 200–239; high (NCEP) ≥240 mg/dL
- HDL-cholesterol (mg/dL): low <40; low for women (a diagnostic criteria of metabolic syndrome) 40-49; desirable <50
- LDL-cholesterol (mg/dL): optimal <100; near optimal / above optimal 100–129; borderline-high 130–159; high ≥160
- Triglyceride (mg/dL): low <100; normal 100–149; borderline-high 150–199; high ≥200

Page 10, line 15–24: Methods
We categorized all continuous readings of physical and biochemical measurements according to well-defined standards. Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared, and then categorized into four groups: <18.5, 18.5–24.9, 25–29.9, and ≥30 kg/m2 [17]. Hypertension was defined as SBP ≥140 mmHg, or DBP ≥90 mmHg, or use of any antihypertensive medication [18]. Random blood glucose levels were classified as: <140, 140-199, and ≥200 mg/dL; and HbA1c levels as: <5.7, 5.7–6.4, and ≥6.5% [19]. Blood lipid levels were classified by the following cutoff values: total cholesterol levels as <150, 150–189, 190–199, 200–239, ≥240 mg/dL; HDL-cholesterol levels as <40, 40–49, ≥50 mg/dL; LDL-cholesterol levels as <100, 100–129, 130–159, ≥160 mg/dL; triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 12, line 25 – page 13, line 4: Results
According to WHO recommended cut-off points [24], prevalence of increased waist circumference (men >94 cm; women >80 cm) and increased waist-hip ratio (men ≥0.90; women ≥0.85) were 9.2% and 64.4% in men and 53.3% and 80.1% in women, respectively. Prevalence of increased waist circumference in men was 16.2%, according to the cut-off point for south Asian men (>90 cm) recommended by International Diabetes Federation [24].

Page 13, line 7–8: Results
Prevalence of diabetes (HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment) [19] was 15.6% in men…..

Page 13, line 14–19: Results
The prevalence of raised total cholesterol (≥190 mg/dL or on medication) was 25.7% in men and 34.0% in women, respectively. High risk range of low HDL-cholesterol level (<40 mg/dL) [20] was 73.2% in men and 55.7% in women, and borderline-high/high level LDL-cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.6% in women. High level of triglycerides (≥200 mg/dL) [20] was more common in men (32.2%) than women (22.4%).

Page 15, line 1–4: Discussion
However, higher HbA1c level in women than men might have been due to higher prevalence of anemia (hemoglobin <11 mg/dL) [30] in women (14.8%) than men (1.8%), which was reported to shift HbA1c values toward higher ends [31-34]. In our study, we used the WHO recommended HbA1c cut-off point [35],

Page 19, line 19 – page 20, line 6: Reference
17 WHO Consultation of Obesity. Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: WHO, 2000.
18 Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the joint national committee on

prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. JAMA 2003;289:2560–72.
19 American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2014;37(Suppl 1):S81–90.
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.
21 World Health Organization. Prevalence of raised total cholesterol (≥190 mg/dl). http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=2382 (accessed 9 Feb 2017).

Page 20, line 11–12: Reference
24 World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008. Geneva: WHO, 2011.

Page 21, line 2–3: Reference
30 WHO Vitamin and Mineral Nutrition Information System. Hemoglobin concentrations for the diagnosis of anemia and assessment of severity. Geneva: WHO, 2011.

Page 21, line 14–15: Reference
35 World Health Organization. Use of glycated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus: abbreviated report of a WHO consultation. Geneva: WHO, 2010.

Page 28–29: Table 3
- Overweight or obesity: BMI ≥25 kg/m2; Obesity: BMI ≥30 kg/m2
- Large waist circumference: men >90 cm, women >80 cm (for south Asian men by IDF); men >94 cm, women >80 cm (WHO)
- Large waist-hip ratio: men ≥0.9, women ≥0.85
- Hypertension: SBP ≥140 mmHg or DBP ≥90 mmHg or on medication
- Diabetes: HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or on diabetes treatment.
- Raised total cholesterol: ≥190 mg/dL or on medication
- Low HDL-cholesterol: both men and women <40 mg/dL; men <40 mg/dL, women <50 mg/dL (a diagnostic criteria of metabolic syndrome)
- Raised LDL-cholesterol (borderline-high / high): ≥130 mg/dL
- Raised triglycerides (borderline-high / high): ≥150 mg/dL

3. "As this was a prevalence study and the sampling was stratified, ideally it would be required to carry out a complex sample analysis along with weighted analysis. Was this done in the analysis? This needs to be mentioned. Even if it was not done, then also it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study."
The above comments made during the first review for data analysis section have not been answered nor the authors have given any justifications for these comments. It will be good to have the correction or justification.

Thank you for the comment, which recommended us to carry out analyses taking into account of the sampling weight, although we described simple unweighted prevalence and mean values separately for men and women in the housing level 1 and housing level 2 in the previous manuscript.
Following the reviewer's advice, we have carried out analyses that used sampling weights by housing levels in men and women. The mean values and proportions did not differ materially from those obtained by unweighted analyses. However, we have replaced all the values for total men and total women in the main text as well as in Tables. In accordance with the revision of the results, we revised

other parts of the text as well, as shown below.

Page 3, line 17–23: Abstract
Prevalence of current tobacco users was 60.4% in men and 23.5% in women. Most of them (90.8%) consumed more than 1 serving of fruits and vegetables per day, however, only 2.1% had more than 5 servings. Overweight/obesity was more common in women (39.2%) than in men (18.9%), while underweight was more common in men (21.0%) than in women (7.1%). Prevalence of hypertension was 18.6% in men and 20.7% in women. Prevalence of diabetes was 15.6% in men and 22.5% in women, much higher than the estimated national prevalence (7%). The prevalence of raised total cholesterol was 25.7% in men and 34.0% in women.

Page 4, line 10–12: Strengths and limitations of this study
- This study targeted only one urban poor community, which may not represent the nationwide situation.
- We could not measure fasting blood samples, but used HbA1c as a useful alternative.
(We deleted the last bullet of limitation.)

Page 10, line 25 – page 11, line 5: Methods
We presented sampling weight corrected prevalence or means for total men and women. Finite population correction was applied to the calculation of 95% confidence intervals. For variables with skewed distributions, log-transformed data were used. To test differences between men and women on each categorical data, chi-squared test was applied. Student's t-test was used for testing difference of means across gender. All of the statistical analyses were performed using the statistical software, Stata IC, Release 12 (StataCorp LP, College Station, TX, USA).

Page 11, lines 22 – page 12, line 13: Results
Mean age of the 2551 participants was 35.8 years in men and 35.6 years in women. Current tobacco users were 60.4% of men (……..) and 23.5% of women (……..). Tobacco smoking (…..) was reported only from men (53.0% in total ……..). Smokeless tobacco chewing was more common in women (23.5% in total ……..) than men (16.3% in total ……..). Alcohol drinking was reported only from men (3.2% in total ……..).
Most of them (92.9% of men and 88.7% of women) consumed at least 1 serving …….. more than 5 servings were only 0.9% of men and 3.3% of women. Those who had less than 1 serving were 7.1% of men (…..) and 11.3% of women (…..). Only 20.9% of men and 21.0% of women reported that they never added table salt to their meals, while 55.9% of men and 51.2% of women always took additional salt. Prevalence of moderate or high level of total physical activity (…..) was 76.5% in men and 35.8% in women ……..,

Page 12, line 21–22: Results
Overweight/obesity was more common in women (39.2%) than men (18.9%), while underweight was more common in men (21.0%) than women (7.1%).

Page 13, line 2: Results
….. were 9.2% and 64.4% in men and 53.3% and 80.1% in women, respectively.

Page 13, line 5: Results
The prevalence of hypertension was 18.6% in men and 20.7% in women …..

Page 13, line 8–9: Results
….. was 15.6% in men (……..) and 22.5% in women (……..)

Page 13, line 10–11: Results

Only 4.5% of men and 5.4% of women showed diabetes level of random blood glucose …..

Page 13, line 13 – 19: Results
Mean value of total cholesterol was 167 mg/dL in men and 174 mg/dL in women, and mean value of HDL-cholesterol was as low as 33 mg/dL in men and 38 mg/dL in women. The prevalence of raised total cholesterol (…..) was 25.7% in men and 34.0% in women, respectively. High risk range of low level HDL-cholesterol (…) [20] was 73.2% in men and 55.7% in women, and borderline-high/high level LDL-cholesterol (…) [20] was 11.7% in men and 12.6% in women. High level triglycerides (…) [20] was more common in men (32.2%) than women (22.4%).

Page 14, line 4: Discussion
….as high as 39.2%,…

Page 15, line 2: Discussion
…..in women (14.8%) than men (1.8%),…..

Page 16, line 7–10: Discussion
However, this study has several limitations. First, we targeted only one urban poor community, which may not represent nationwide situation. Second, we could not measure fasting blood samples. While random blood glucose value was unreliable for screening diabetes, we found measuring HbA1c could be a useful alternative.
(We deleted the third limitation.)

Page 23–29: Table 1, Table 2, Table 3
(We revised the values and footnotes in the tables, as we have carried out analyses that used sampling weights by housing levels in men and women.)

VERSION 4 – REVIEW

REVIEWER	Dr M Mostafa Zaman World Health Organization Bangladesh I have authored several articles with one of the co-authors
REVIEW RETURNED	04-Jun-2017

GENERAL COMMENTS	All concerns from my side has been addressed

REVIEWER	Krishna Kumar Aryal Nepal Health Research Council
REVIEW RETURNED	11-Jun-2017

GENERAL COMMENTS	"Data analysis line 54 to 57: Alike the definition of hypertenstion, the authors would define the variable blood glucose level to different categories of raised blood glucose or diabetes mellitus. The authors have now mentioned that blood glucose levels were classified..... and HBA1C levell were classified....total cholesterol levels were classified...which does not mention about the the meaning of different levels. So it is suggested to mention with clarity what does different levels of glucose, HBA1C and cholesterol mean?" "As this was a prevalence study and the sampling was stratified, ideally it would be required to carry out a complex sample analysis

	along with weighted analysis. Was this done in the analysis? This needs to be mentioned. Even if it was not done, then also it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study. " The above comments made during the first review and second review have not been answered nor the authors have given any justifications for these comments. It will be good to have the correction or justification.

VERSION 4 – AUTHOR RESPONSE

Reviewer 3

Although we are puzzled to find that the comments of the reviewer are exactly same as his previous comments, to which we think we had responded, we added phrases and provided explanations for further clarification, and highlighted them in green. We highlighted the revisions we had made in the previous version in blue to help the reviewer evaluate our attempts to respond fully to the comments. We also added a supplementary note.

1. Data Analysis "Data analysis line 54 to 57: Alike the definition of hypertenstion, the authors would define the variable blood glucose level to different categories of raised blood glucose or diabetes mellitus. The authors have now mentioned that blood glucose levels were classified.....and HBA1C levell were classified...total cholesterol levels were classified...which does not mention about the the meaning of different levels. So it is suggested to mention with clarity what does different levels of glucose, HBA1C and cholesterol mean?"

As described in Method, “Data analysis,” we categorized all continuous readings of physical and biochemical measurements according to well-defined standards (with some modifications). For some variables, we have used more than single criteria so that our finding could be compared to other existing or future literature. For Table 3, we defined higher risk levels of each indicator considering recent NCD literature, pathophysiological meaning and the prevalence.
In the current round of revision, “Supplementary Note” is also added according to the reviewer’s advice in order to show the meaning of each category with relevant references. We also replaced reference 18. Considering the word count limitation, we could not describe the meanings of all categories in the main text.

Page 11, line 3–4: Methods, Data analysis
(The meaning of each category of the indicators are shown in Supplementary Note.)

Page 10, line 18 – page 11, line 3: Methods, Data analysis
We categorized all continuous readings of physical and biochemical measurements according to well-defined standards (with some modification). Body mass index (BMI) was calculated as weight in kilograms divided by height in metres squared and then categorized into four groups: <18.5, 18.5–24.9, 25–29.9, and ≥30 kg/m2 [17]. Hypertension was defined as SBP ≥140 mmHg, DBP ≥90 mmHg, or the use of any antihypertensive medication [18]. Random blood glucose levels were classified as follows: <140, 140-199, and ≥200 mg/dL. HbA1c levels were classified as follows: <5.7, 5.7–6.4, and ≥6.5% [19]. Blood lipid levels were classified by the following cut-off values: total cholesterol levels as <150, 150–189, 190–199, 200–239, and ≥240 mg/dL; HDL cholesterol levels as <40, 40–49, and ≥50 mg/dL; LDL cholesterol levels as <100, 100–129, 130–159, and ≥160 mg/dL; and triglyceride levels as <100, 100–149, 150–199 and ≥200 mg/dL [20, 21].

Page 13, line 8–12: Results
According to WHO-recommended cut-off points [24], the prevalence of increased waist circumference (men >94 cm; women >80 cm) and increased waist-hip ratio (men ≥0.90; women ≥0.85) were 9.2% and 64.4% in men and 53.3% and 80.1% in women, respectively.

The prevalence of increased waist circumference in men was 16.2% according to the cut-off point for South Asian men (>90 cm) recommended by the International Diabetes Federation [24].

Page 13, line 15–16: Results
The prevalence of diabetes (HbA1c ≥6.5%, random blood glucose ≥200 mg/dL, or diabetes treatment) [19] was 15.6% in men

Page 13, line 23 – page 14, line 2: Results
The prevalence of raised total cholesterol (≥190 mg/dL or on medication) was 25.7% in men and 34.0% in women. The high-risk range of low-level HDL cholesterol (<40 mg/dL) [20] was 73.2% in men and 55.7% in women, and the high-risk range of borderline-high- to high-level LDL cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.6% in women. High-level triglycerides (≥200 mg/dL) [20] were more common in men (32.2%) than women (22.4%).

Page 15, line 10–13: Discussion
However, the higher HbA1c levels in women compared to men might have been due to the higher prevalence of anaemia (haemoglobin <11 mg/dL) [30] in women (14.8%) than men (1.8%), which was reported to shift HbA1c values towards the higher end [31-34]. In our study, we used the WHO-recommended HbA1c cut-off point [35],

Page 20, line 19 – page 21, line 7: Reference
17 WHO Consultation of Obesity. Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: WHO, 2000.
18 Mancia G, Fagard R, Narkiewicz K, et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). J Hypertens. 2013;31:1281–357.
19 American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2014;37(Suppl 1):S81–90.
20 National Cholesterol Education Program (NCEP) Expert Panel. Third report of the NCEP expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III) final report. Circulation 2002;106:3143–421.
21 World Health Organization. Prevalence of raised total cholesterol (≥190 mg/dl). http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=2382 (accessed 9 Feb 2017).

Page 21, line 12–13: Reference
24 World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008. Geneva: WHO, 2011.

Page 22, line 3–4: Reference
30 WHO Vitamin and Mineral Nutrition Information System. Hemoglobin concentrations for the diagnosis of anemia and assessment of severity. Geneva: WHO, 2011.

Page 22, line 15–16: Reference
35 World Health Organization. Use of glycated haemoglobin (HbA1c) in the diagnosis of diabetes mellitus: abbreviated report of a WHO consultation. Geneva: WHO, 2010.

Page 29–30: Table 3
- Overweight or obesity: BMI ≥25 kg/m2; Obesity: BMI ≥30 kg/m2
- Large waist circumference: men >90 cm, women >80 cm (for south Asian men by IDF); men >94 cm, women >80 cm (by WHO)
- Large waist-hip ratio: men ≥0.9, women ≥0.85
- Hypertension: SBP ≥140 mmHg or DBP ≥90 mmHg or on medication
- Diabetes: HbA1c ≥6.5% or random blood glucose ≥200 mg/dL or diabetes treatment.
- Raised total cholesterol: ≥190 mg/dL or on medication
- Low HDL-cholesterol: both men and women <40 mg/dL; men <40 mg/dL, women <50 mg/dL (a diagnostic criteria of metabolic syndrome)
- Raised LDL-cholesterol (borderline-high / high): ≥130 mg/dL
- Raised triglycerides (borderline-high / high): ≥150 mg/dL

2. "As this was a prevalence study and the sampling was stratified, ideally it would be required to carry out a complex sample analysis along with weighted analysis. Was this done in the analysis? This needs to be mentioned. Even if it was not done, then also it requires mentioning that the analysis was simple unweighted analysis and the result would only reflect to those selected in the study. "
The above comments made during the first review and second review have not been answered nor the authors have given any justifications for these comments. It will be good to have the correction or justification.

Responding the reviewer's comment, we respectfully disagree to this reviewer's statement that his previous comment has not been incorporated. We had already carried out a complex sample analysis that used sampling weights by housing levels in men and women in the previously submitted revision. We further added a couple of phrases for further clarification of our responses. We had already replaced all the values for total men and total women in the main text as well as in Tables, although the mean values and proportions did not differ materially from those obtained by unweighted analyses. In accordance with the revision of the results, we had already revised other parts of the text as well.

Page 11, line 5–13: Methods, Data analysis
Analyses adjusted for the complex survey design with four strata by the housing level and gender were conducted. To deal with unequal probabilities of selection, we presented sampling weight-corrected prevalence or means for total men and women. Since the survey was done in a single community, the finite population correction was applied to the calculation of unbiased 95% confidence intervals. For variables with skewed distributions, log-transformed data were used. To test the differences between men and women for each categorical data variable, the chi-squared test was applied. Student's t-test was used for testing mean differences between genders. All statistical analyses were performed using the statistical software Stata IC, Release 12 (StataCorp LP, College Station, TX, USA).

Page 2, line 17–24: Abstract
The prevalence of current tobacco use was 60.4% in men and 23.5% in women. Most of them (90.8%) consumed more than 1 serving of fruits and vegetables per day; however, only 2.1% consumed more than 5 servings. Overweight/obesity was more common in women (39.2%) than in men (18.9%), while underweight was more common in men (21.0%) than in women (7.1%). The prevalence of hypertension was 18.6% in men and 20.7% in women. The prevalence of diabetes was 15.6% in men and 22.5% in women, which was much higher than the estimated national prevalence (7%). The prevalence of raised total cholesterol (≥190 mg/dL) was 25.7% in men and 34.0% in women.

Page 12, line 5–21: Results
The mean age of the 2551 participants was 35.8 years for men and 35.6 years for women. Current tobacco users were 60.4% of men (54.6% in housing level 1 and 64.2% in housing level 2) and 23.5% of women (14.8% in housing level 1 and 29.1% in housing level 2). Tobacco smoking (cigarette, beedi, etc.) was reported only by men (53.0% in total, 48.7% in housing level 1 and 55.8% in housing level 2). Smokeless tobacco chewing was more common among women (23.5% in total, 14.8% in housing level 1 and 29.1% in housing level 2) than men (16.3% in total, 11.6% in housing level 1 and 19.3% in housing level 2). Alcohol use was reported only by men (3.2% in total, 4.6% in housing level 1 and 2.3% in housing level 2).
Most of the participants (92.9% of men and 88.7% of women) consumed at least 1 serving of fruits and vegetables per day; however, only 0.9% of men and 3.3% of women consumed more than 5 servings. Among those who had less than 1 serving were 7.1% of men (7.3% in housing level 1 and 6.9% in housing level 2) and 11.3% of women (3.3% in housing level 1 and 16.5% in housing level 2). Only 20.9% of men and 21.0% of women reported that they never added table salt to their meals, while 55.9% of men and 51.2% of women always added salt. The prevalence of moderate or high levels of total physical activity (≥600 MET minutes per week) was 76.5% in men and 35.8% in women,

Page 13, line 4–5: Results
Overweight/obesity was more common in women (39.2%) than men (18.9%), while underweight was more common in men (21.0%) than women (7.1%).

Page 13, line 10: Results
were 9.2% and 64.4% in men and 53.3% and 80.1% in women, respectively.

Page 13, line 13: Results
The prevalence of hypertension was 18.6% in men and 20.7% in women

Page 13, line 16–17: Results
was 15.6% in men (13.7% in housing level 1 and 16.9% in housing level 2) and 22.5% in women

Page 13, line 19: Results
Only 4.5% of men and 5.4% of women showed diabetic levels of random blood glucose,

Page 13, line 21 – page 14, line 2: Results
The mean value of total cholesterol was 167 mg/dL in men and 174 mg/dL in women, and the mean value of HDL cholesterol was as low as 33 mg/dL in men and 38 mg/dL in women. The prevalence of raised total cholesterol (≥190 mg/dL or on medication) was 25.7% in men and 34.0% in women. The high-risk range of low-level HDL cholesterol (<40 mg/dL) [20] was 73.2% in men and 55.7% in women, and the high-risk range of borderline-high- to high-level LDL cholesterol (≥130 mg/dL) [20] was 11.7% in men and 12.6% in women. High-level triglycerides (≥200 mg/dL) [20] were more common in men (32.2%) than women (22.4%).

Page 14, line 13: Discussion
39.2%, which could be

Page 15, line 11: Discussion
in women (14.8%) than men

Page 24–30: Table 1, Table 2, Table 3
(We revised the values and footnotes of the tables in accordance with the results of the complex analyses.)

VERSION 5 – REVIEW

REVIEWER	Krishna Kumar Aryal Nepal Health Research Council, Nepal
REVIEW RETURNED	28-Jul-2017

The reviewer completed the checklist but made no further comments.