Dear Authors,

In this paper was investigated prevalence and distribution of diabetes, obesity and the combination of them (called diabesity) in a large Indian population. In particular, it was explored social determinants of diabesity, diabetes and obesity evaluating also the association with other selected non communicable diseases such as CVD, hypercholesterolemia, hypertension, thyroid diseases. It was interesting to notice how diabesity condition can influence people life satisfaction and healthcare utilization: it clearly shows social, psychological and economic impact of this new morbidity. As reported in the discussion, a relevant element of weaknesses of this study is the “self reported” diagnosis use. Moreover, in this paper authors consider obesity (defined as BMI greater or equal to 25 kg/m²) but it wasn't considered abdominal obesity (even if the data are available) which is an important and known risk factor for diabetes, CV and metabolic disease. It could be interesting to analyze the prevalence of abdominal obesity (using waist and hip circumferences) and its relation with diabetes and NCDs. However, the main concern about this paper regard the study design and participants selection: this part is unclear and difficult to understand. It must be revised in order to public the study.

Major points:

In “Methods” authors must clarify LASI and how data are obtained. Suggestions:
- Deepen how the sample utilized could be representative about whole India population
- Deepen how information related to diagnosis of NCDs is obtained and why you focused on those specific diseases
- Explain how anthropometric measures are collected
- Deepen, during method explanation, how the categories of social determinants (e.g. social group, years of schooling, residence) are divided (as per Tab.1) and how the selection criteria for categories
are individuated (e.g. how you evaluate wealth quintile and how they are defined)
- In “Study design and participants”, “biomarker datasets” are mentioned: what kind of biomarker? How and where biomarker datasets are used in the analysis?

Minor points:
The whole paper wording shall be revised. There are a few punctuation errors, wrong constructed sentences, missing prepositions, wrong verb tenses.
Hereby I summarize suggestions for some paragraphs:
Abstract:
Evaluate to review abstract structure (introduction – aims – methods -results - conclusion)
Introduction:
Explain better SDG (line 43)
Methods:
For diagnosis of obesity has been used BMI greater or equal to 25: nevertheless the quote, could be better explain even in the text why has been used this cut off (according to WHO BMI classification for Adult Asians of obesity).
Results:
Table 1 in not clear and not easy to read:
- Authors should declare what values in brackets are referred to
- Wealth quintiles should be better defined
- statistical analysis performance should be better exposed (author need to clarify how bivariate associations was done)

In the final part of the paper authors underline the importance of weight loss in diabetic patients and the importance of prescribing “no-weight-gain” anti-diabetics drugs in patients with diabesity. In the last years we have witnessed of a progressive growth of anti-diabetic drugs. Those new drugs (such as GL1 RA, SGLT2 inhibitors) proved to be also beneficial for weight loss, for cardiovascular system and kidney. One of them (liraglutide) has also indication for obesity treatment. For this reason I would suggest to write some lines about this drugs, particularly indicated in patients with diabesity. Regard of this I would suggest the following articles:

REVIEWER
Xu, Beibei
Beijing Medical University

REVIEW RETURNED
22-May-2022

GENERAL COMMENTS
This topic is meaningful. But there are several issues that need to be addressed by the authors.
1. On page 3 lines 53-38, it is not clear which group the authors mentioned. Also for the last sentence of the result part, which groups did the others indicate?
2. On page 5 lines 25-27, it is not stated what the numbers 34-42 and 17-21 were.
3. On page 6 line 57, why using 25 to define obesity? Need to justify if this cutoff is appropriate for Indian populations. WHO uses 25 to define overweight for adults.
4. On page 7 line 10, this study included age, sex, residence, religion, social group, years of school and wealth to describe social determinants. Better to further describe how these variables were defined for this study.
5. On page 7 lines 23-29, several NCDs such as psychiatric diseases, bone diseases and others were not included. Wonder why.
6. Was this study designed as longitudinal? The study design was not clearly described. If the baseline information was collected in 2017, what about the follow up? Did they collect the follow up data in 2018? When were the outcomes (including the life satisfaction, number of inpatients visits and number of out-patients visits) collected?
7. The tables and figures need to be revised to meet the publication standards.
8. Regarding to the regression analyses, why those lifestyle or behavior factors were not included as confounders?

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Paolo Fiorina, Boston Children’s Hospital

Comments to the Author:
Dear Authors,

In this paper was investigated prevalence and distribution of diabetes, obesity and the combination of them (called diabesity) in a large Indian population.

In particular, it was explored social determinants of diabesity, diabetes and obesity evaluating also the association with other selected non communicable diseases such as CVD, hypercholesterolemia, hypertension, thyroid diseases. It was interesting to notice how diabesity condition can influence people life satisfaction and healthcare utilization: it clearly shows social, psychological and economic impact of this new morbidity.

As reported in the discussion, a relevant element of weaknesses of this study is the “self-reported” diagnosis use. Moreover, in this paper authors consider obesity (defined as BMI greater or equal to 25 kg/m2) but it wasn't considered abdominal obesity (even if the data are available) which is an important and known risk factor for diabetes, CV and metabolic disease. It could be interesting to analyze the prevalence of abdominal obesity (using waist and hip circumferences) and its relation with diabetes and NCDs.

However, the main concern about this paper regard the study design and participants selection: this part is unclear and difficult to understand. It must be revised in order to public the study.

Author’s Response: Thank you so much for your time and valuable inputs to improve our manuscript.

Major points:

In “Methods” authors must clarify LASI and how data are obtained.
Suggestions:
- Deepen how the sample utilized could be representative about whole India population

Author’s Response: We have now added a section on sampling process adopted by LASI survey which makes the sample representative of whole India.

- Deepen how information related to diagnosis of NCDs is obtained and why you focused on those specific diseases.

Author’s Response: We have now mentioned how the data on the included NCDs were obtained by the survey. Additionally, we have focused on specific diseases based on an extensive literature search which helped us in identifying the most common NCDs included in the study. This has now
been elaborately mentioned in the manuscript too.

- Explain how anthropometric measures are collected
  **Author’s Response:** Thank you for your comment. We have already mentioned this under procedures section of the manuscript. “Height and weight were measured using a stadiometer and a Seca 803 digital weighing scale, respectively.”

- Deepen, during method explanation, how the categories of social determinants (e.g. social group, years of schooling, residence) are divided (as per Tab.1) and how the selection criteria for categories are individuated (e.g. how you evaluate wealth quintile and how they are defined)
  **Author’s Response:** All variables have been elaborated for better understandability. Thank you for the suggestion.

- In “Study design and participants”, “biomarker datasets” are mentioned: what kind of biomarker? How and where biomarker datasets are used in the analysis?
  **Author’s Response:** Height and weight used to calculate BMI is provided in the biomarker dataset of LASI survey. By biomarkers, we mean height and weight in this study.

Minor points:
The whole paper wording shall be revised. There are a few punctuation errors, wrong constructed sentences, missing prepositions, wrong verb tenses.
  **Author’s Response:** Thank you for noting this. We have edited the entire manuscript for grammar and punctuations.

Hereby I summarize suggestions for some paragraphs:

**Abstract:**
Evaluate to review abstract structure (introduction – aims – methods -results - conclusion)
  **Author’s Response:** Abstract structure has been modified as suggested by the reviewer.

**Introduction:**
Explain better SDG (line 43)
  **Author’s Response:** We have changed this line to make it more understandable and have also added a few more details.

**Methods:**
For diagnosis of obesity has been used BMI greater or equal to 25: nevertheless the quote, could be better explain even in the text why has been used this cut off (according to WHO BMI classification for Adult Asians of obesity).
  **Author’s Response:** As suggested by the reviewer, we have added few lines on why 25 or more has been kept as a cutoff to define obesity.

**Results:**
Table 1 in not clear and not easy to read:
- Authors should declare what values in brackets are referred to
  **Author’s Response:** Thank you for pointing out this mistake. We have rectified as suggested.

- Wealth quintiles should be better defined
  **Author’s Response:** We have now defined wealth quintile elaborately.

- statistical analysis performance should be better exposed (author need to clarify how bivariate associations was done)
Author's Response: As suggested by the reviewer, we have now mentioned that chi-square test was used to investigate bivariate associations.

In the final part of the paper authors underline the importance of weight loss in diabetic patients and the importance of prescribing "no-weight-gain" anti-diabetics drugs in patients with diabesity. In the last years we have witnessed a progressive growth of anti-diabetic drugs. Those new drugs (such as GL1 RA, SGLT2 inhibitors) proved to be also beneficial for weight loss, for cardiovascular system and kidney. One of them (liraglutide) has also indication for obesity treatment. For this reason I would suggest to write some lines about this drugs, particularly indicated in patients with diabesity. Regard of this I would suggest the following articles:

Author's Response: Thank you so much for such thoughtful insight in the subject matter. This has been of immense help. We have added few points in the drug as suggested.

We thank you again for valuable time and thoughtful comments which have helped us in improving our manuscript.

Reviewer: 2
Dr. Beibei Xu, Beijing Medical University

Comments to the Author:
This topic is meaningful. But there are several issues that need to be addressed by the authors.
1. On page 3 lines 53-38, it is not clear which group the authors mentioned. Also for the last sentence of the result part, which groups did the others indicate?
Author's Response: Thank you so much for the suggestion. We have now mentioned the names of the group instead of others as suggested by the reviewer.

2. On page 5 lines 25-27, it is not stated what the numbers 34-42 and 17-21 were.
Author's Response: These numbers in the bracket indicate uncertainty intervals which has now been mentioned in the manuscript.

3. On page 6 line 57, why using 25 to define obesity? Need to justify if this cutoff is appropriate for Indian populations. WHO uses 25 to define overweight for adults.
Author's Response: According to WHO BMI classification for Asian adults, a BMI of 25 or more is used to denote obesity. We have thus used this Asia specific parameter. However, this was not explicitly mentioned in the manuscript earlier but now we have explained this point in detail.

4. On page 7 line 10, this study included age, sex, residence, religion, social group, years of school and wealth to describe social determinants. Better to further describe how these variables were defined for this study.
Author's Response: All variables have been elaborated for better understandability. Thank you for the suggestion.

5. On page 7 lines 23-29, several NCDs such as psychiatric diseases, bone diseases and others were not included. Wonder why.
Author's Response: We have focused on specific diseases based on an extensive literature search which helped us in identifying the most common NCDs. Only the most common NCDs were included
in the study due to which other NCDs were left. This has now been elaborately mentioned in the manuscript too.

6. Was this study designed as longitudinal? The study design was not clearly described. If the baseline information was collected in 2017, what about the follow up? Did they collect the follow up data in 2018? When were the outcomes (including the life satisfaction, number of inpatients visits and number of out-patients visits) collected?

Author’s Response: In the first line of methods section, we have mentioned that this study is an observational analysis of the first wave of LASI study conducted in 2017-18. Although, LASI is a longitudinal study but the present analysis is based on only first wave of survey thus it is a cross-sectional analysis. The data were collected during 2017-18 while the follow up data is yet to come in future.

7. The tables and figures need to be revised to meet the publication standards.

Author’s Response: Thank you for the suggestion. We have edited tables and figure and hope it suits the requirements of the journal.

8. Regarding to the regression analyses, why those lifestyle or behavior factors were not included as confounders?

Author’s Response: We agree with reviewers that considering lifestyle factors as confounders could have been interesting. However, aligning with our objective to investigate the social determinants only we did not include these factors.

We thank you again for your valuable time and thoughtful comments which has helped us in improving our manuscript.

VERSION 2 – REVIEW

<table>
<thead>
<tr>
<th>REVIEWER</th>
<th>Fiorina, Paolo</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Milan</td>
<td></td>
</tr>
<tr>
<td>REVIEW RETURNED</td>
<td>01-Aug-2022</td>
</tr>
</tbody>
</table>

GENERAL COMMENTS

Dear Authors,
the revision has certainly improved the quality of the paper. However in my opinion before an eventual publication, there are still some minor points to be revised. First of all, I recommend a further grammatical and syntactical revision by an english native speaker to improve the fluidity of the reading.

Hereby my suggestions for each paragraph:

Abstract:
- In “Methods” authors could specify the prevalence of which conditions they are determining.

Introduction:
- review sentence in line 15-16
- review sentence in line 23-24-25 (explanation of SDG)

Methods:
- In “study design and partecipants” and in “procedures” authors talk about biomarkers but they never explain what kind of
biomarkers they referred to or how and where biomarker datasets are used in the study.

Results:
- Authors should indicate RRR with CI and p value (e.g RRR=1.68; 95% CI, 1.2-2.35 ; p < 0.001)

Discussion:
- In page 19 at line 27-28 citation of the study corresponding to quote 30 is a little bit out of contest; if authors want to maintain the citation I suggest to better contextualize and add more details about this study.

Implication for Policy and Practice
- Review the first sentence
- Among new anti-diabetic drugs with beneficial effect on weight you have to mention also SGLT2 inhibitors.
Moreover I want to highlight that several studies (e.g. EMPAREG, LEADER, SUSTAIN 6, REWIND, CANVAS, DAPA CKD etc) have shown an effect of SGLT2 inhibitors and GLP1 RA not only in reducing weight but also in reducing risk of cardiovascular events in patients with type 2 diabetes with high cardiovascular risk and progression of kidney disease. Hence, utilization of these drugs in patients with diabetes, obesity and other NCDs (such as CKD, heart failure, ischemic heart disease) can have an impact on the history of the disease.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1
Dr. Paolo Fiorina, University of Milan
Comments to the Author:
Dear Authors,
the revision has certainly improved the quality of the paper.
However in my opinion before an eventual publication, there are still some minor points to be revised.
First of all, I recommend a further grammatical and syntactical revision by an English native speaker to improve the fluidity of the reading.
Author’s Response: Thank you so much for your suggestion. We have further revised the manuscript for grammar and English by making appropriate edits wherever applicable.

Hereby my suggestions for each paragraph:

Abstract:
- In “Methods” authors could specify the prevalence of which conditions they are determining.
Author’s Response: We have added the conditions as ‘diabetes, obesity and diabesity’

Introduction:
- review sentence in line 15-16
Author’s Response: We have revised the sentence. Thank you for noting this mistake.

- review sentence in line 23-24-25 (explanation of SDG)
Author’s Response: We have now revised the sentence.
Methods:
- In “study design and participants” and in “procedures” authors talk about biomarkers but they never explain what kind of biomarkers they referred to or how and where biomarker datasets are used in the study.

Author’s Response: In the procedure section, third line mentions about the use of biomarker dataset. “LASI collected information on anthropometric measures- height (in centimeters) and weight (in kilograms) provided in the biomarker dataset.”

Results:
- Authors should indicate RRR with CI and p value (e.g RRR= 1.68; 95% CI, 1.2-2.35 ; p < 0.001)

Author’s Response: We have revised the entire results section accordingly.

Discussion:
- In page 19 at line 27-28 citation of the study corresponding to quote 30 is a little bit out of context; if authors want to maintain the citation I suggest to better contextualize and add more details about this study.

Author’s Response: Thank you for the suggestion. We have removed the quote and reference. Accordingly, we have changed the reference numbers for further citations.

Implication for Policy and Practice
- Review the first sentence

Author’s Response: We have rephrased the sentence.

- Among new anti-diabetic drugs with beneficial effect on weight you have to mention also SGLT2 inhibitors. Moreover I want to highlight that several studies (e.g. EMPAREG, LEADER, SUSTAIN 6, REWIND, CANVAS, DAPA CKD etc) have shown an effect of SGLT2 inhibitors and GLP1 RA not only in reducing weight but also in reducing risk of cardiovascular events in patients with type 2 diabetes with high cardiovascular risk and progression of kidney disease. Hence, utilization of these drugs in patients with diabetes, obesity and other NCDs (such as CKD, heart failure, ischemic heart disease) can have an impact on the history of the disease.

Author’s Response: Thank you so much for the suggestion. We have now added this now.

We thank you again for your valuable time and thoughtful comments which has helped us in improving our manuscript.