Author's response to reviews

Title: Prevalence of cardiovascular risk factors among truck drivers in the south of Brazil

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Author's response to reviews: see over
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Author's response to reviews: see over
Cover Letter with revision Notes:

We thank the reviewers for the important suggestions that contributed a lot to the quality of the manuscript.

1. Following, we present the answers for each comment of both reviewers. All changes are highlighted (in red) in the manuscript.

We addressed the comments of each reviewer separately.

Dear Raquel Hirata (REVIEW 1), thank you for your comments.

Major compulsory revisions:

1. This figure is confuse. I understood that the graph describes the prevalence of risk factors (one only or in association of two or three). If so, each patient is included only in one bar of the graph and the sum of all the bars should be 100%. However, the sum is 113.2%. In case of the patient with one risk factor be included in the bars with two or three associated risk factors, the sum should be greater than 113.2%. Besides, the prevalence of hypertension described in the study is 45.2%. If we add hypertension alone (2%) with hypertension associated to abnormal AC (29.7%), abdominal glucose (13.2%) and with both of them (13.3%), the sum is 58.2%. The same occurs for the other risk factors. Please, confirm the data and try to construct the graph more clearly. As a suggestion, each patient should be included in only one bar of the graph.

   Answer: We agree that the figure 1 was not correct, therefore, we excluded the column with repeated data (HYPERTENSION AND ABNORMAL GLUCOSE) - each patient was classified only once.

Minor compulsory revisions:

1. Methods

   This is not only a descriptive study. The correct characterization of the study is observational cross-sectional. The part "quantitative approach" is not necessary.
Answer: We changed the characterization of the study from “descriptive” to “observational cross-sectional study”, and excluded the words “quantitative approach”.

2. The term "random" has a specific meaning in research, it signifies that each participant has a known probability of receiving some intervention. This term is inappropriately used in this situation. You should remove it and describe the method precisely (Was there a specific schedule to recruit the participants? Was it always during the day? How many days of interval for the future visits? Were the future visits at the same time of the day?)
Answer: We removed the word “random” from the sentence. In order to clarify the method we rephrase the sentence: “The subjects were sequentially invited to participate in the research as they arrived at gas stations or were waiting to load and unload cargo, from 8 am to 17 pm, all days of the week.
Also, we added another sentence (page 7 line 20) “The second and third evaluation were performed at the same time of the day of the first examination”.

3. It was not described in the Results section any use of t test or ANOVA, all variables were represented as categorical variables. Please remove them from the "Statistical analysis" section as well as from the "Abstract".
Answer: We agreed that the initial presentation of data did not include t test or ANOVA. However, since we included the effects of age in the statistical analysis we maintained the description of test on the text. Moreover, we included data for the multivariate analysis in results. Thus, we included new information about the statistical analysis on abstract, methods and results. Please see pages 3,10,12 and 13.

4. The phrase ". and many of the drivers were overweight" is repetitive with the information of the next phrase.
Answer: We corrected this mistake: we removed this repetitive phrase.

5. Data described in the text is repetitive with tables and figure.
**Answer:** We agreed and removed the initial table 1. Moreover, we excluded the repeated text and included the phrase: This figure highlights that a high number of subjects included in our study present concomitant risk factors for CVD, and less than 6% has only one risk factor (pg 12, line 10).

Furthermore, we also combined tables 2 and 3 and presented a unique table (table 2) that included all variables associated (only significant associations) with blood pressure and glucose levels alterations.

6. Chi square test does not reflect causality. So you could not say that these variables increase the chances of a subject present hypertension, you could only say that these variables are associated.

**Answer:** We agreed and altered the words “increased the chances” to “are associated”. Moreover, in the table 3 we present data of a multivariate analysis that enhance the interpretations of the results and in order to reduce data without statistical significance, Also, at pg 12, line 24, we added in the text a paragraph showing that some parameters analyzed increased the risk of hypertension and abnormal glucose levels.

The logistic regression model confirms the important association between abdominal obesity with hypertension and abnormal glucose levels (Table 3). Thus, the risk of hypertension or abnormal glucose levels is, respectively, 55 and 29.5 times higher in truck drivers that present abdominal obesity than drivers without this abnormality. Furthermore, age and the family history of premature CVD also increased the chances of hypertension. We also found a relation between abnormal blood glucose levels and obesity grade II or III.

7. It should be highlighted that this prevalence (45.2%) is from this study.

**Answer:** We added the words “in this study” (page 13, line 3).

8. I miss a first table with the characterization of the sample, using continuous variables instead of categorical ones. Data as age, BMI, abdominal circumference, blood glucose, would be better described as mean and standard deviation so we can see the distribution of these data.
**Answer:** We added, as table 1, these characteristics with mean, standard deviation, median and minimum and maximum values.

In table 1 - "Use of any stimulant" - data 250 and 100% are at the wrong line.

9. Page 24, Table 3

"BP changes" and "Change of AC" - what are these changes regarding to? Would it be 'alterations' instead of 'changes'?

**Answer:** We correct these mistakes. Table 3 was incorporate in table 2.

**Discretionary revisions**

1. If this information is available, it would be interesting to describe if the drivers were independent or if they were from a company.

   **Answer:** Unfortunately this information was not recorded systematically. We agreed that this point is very important. We appreciate this suggestion and we will use this information for another study.

2. Another interesting point is if the drivers worked during the day and/or during the night. It is described in the literature that shift workers have a high prevalence of cardiovascular risk factors.

   **Answer:** We agreed and considered this period of work on discussion by the impact of sleep to CVD (discussion page discussion). We known that these truck drivers worked during day and night, especially during of months of May to October (harvest of grains in the state). Moreover, as these truckers drive for long distances to load and unload the cargo, they don’t have an established period of work (regular scale). Please see page 16, line 22.
Reviewer 2: Ruey-Hong Wong

Reviewer's report:

1. Introduction section

The first, second, and third paragraphs should be combined.

**Answer:** We agreed. Therefore, we combined these two paragraphs.

2. Material and method section

The last four paragraphs should be combined.

**Answer:** We agreed. Therefore, we combined these two paragraphs.

3. Occupational history including employment duration in the transportation should be presented.

**Answer:** We don’t have data of truck drivers’ previous occupation. However, the mean duration on long distance transportation was 8 years in the population included in our study.

4. How to define “long-distance” truck drivers?

**Answer:** This is an important point. We used the definition of the Employment Standards Act and Regulation – Section 1 – Definitions – Long Haul Truck Driver (Interpretation Guidelines Manual British Columbia): “person employed to drive usually for a distance exceeding a 160 km radius from their home terminal”. In our study the mean distance of each travel was 500 km. In order to clarify this point we added the phrase on page 7 line 8.

5. Subsection of statistical analysis should be revised. For example, in page 9, authors stated the numerical variables (i.e., age and education) were summarized with averages, quartiles, minima, maxima and standard deviations. However, we can’t found them in the text. Also, in Tables 2 and 3, we can’t find “Fisher’s exact test “. Authors also indicated student’s t test was used to compare the averages of the numerical variables between the two groups of independent samples. To compare the averages of more than two groups, analysis of variance (ANOVA) was used. However, they can't be observed in the section of Result or Tables.
**Answer:** We agreed and appreciate your comments. We correct these mistakes and did an extensive review on statistical session after your suggestions. Also we redid the tables and present new analyses. Please see statistical analyses and tables 1, 2 and 3 and in abstract page 3, methods page 10 and results page 12 and 13.

6. **Result and Table/Figure section**

   Table 1 should be condensed. Mutual categories should be eliminated. Also, Tables 2 and 3 should be condensed; the percent frequencies should be eliminated. Why the sum of percent frequencies for all categories in figure 1 is greater than 100%?

   **Answer:** We removed the initial table 1 and maintained the information only in the text. We removed the frequencies of the other tables. We agree that the figure 1 was not correct, therefore, we excluded the column with repeated data (HYPERTENSION AND ABNORMAL GLUCOSE) - each patient was classified only once.

7. In page 11, authors described the presence of risk factor occurred in various combinations. However, “concomitant presence” should not be “associated or association”.

   **Answer:** We agreed and altered the paragraph on pg 12 line 10.

   “This figure highlights that a high number of subjects included in our study present concomitant risk factors for CVD, and less than 6% has of only one risk factor.”

8. Age effect needs to be considered in all statistical analysis, and a multivariables model should be constructed.

   **Answer:** We agreed and included age effects both in the univariate and multivariate analysis.

9. **Discussion section**

   This is a descriptive study that focused on the prevalence estimate of cardiovascular risk factors in truck drivers. A key point is how to
demonstrate the representative of this study sample. For example, the prevalence of alcohol drinking in this study sample is high; however, smoking prevalence is low. Further, both of age and education effect were ignored in this study. However, age and educational level could largely affect the prevalence of cardiovascular risk factors. Truck drivers who have a longer employment might also have a higher prevalence of cardiovascular risk factors. Unfortunately, the effects of age, educational level, and employment history didn't be evaluated in this study.

**Answer:** These appointments are valuable and we do appreciate your comments. Thus, we evaluated the effects of age and years of study on cardiovascular risk (hypertension and abnormal glucose levels) through uni and multivariate analysis. These analyses are showed on tables 2 and 3. Indeed, the age is associated at the cardiovascular risk (hypertension). We included this information on results and discussion topics.

However, no association between years of study and cardiovascular risk was found in our study. The education level was homogenous among the truckers. Only three truckers had completed high school. Furthermore, our data demonstrate the impact of central overweight, physical inactivity and driving for long periods as factors prone to explain the cardiovascular risk.

We also would like to emphasize that the increase in waist circumference was not associated with age or education, but only with physical inactivity and BMI (we tested).

10. Reference format should be corrected.

**Answer:** We correct all references.