Author's response to reviews

Title: Frequency of alcohol use and obesity in community medicine patients

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Dear Editors:

Our responses to the reviewers comments are detailed below. Please note that we took all comments very seriously, given the strong credentials of the reviewer. The result was an expansion of our literature review and a complete re-analysis of the data. The new results necessitate a change in the title of the manuscript.

Major Compulsory Revisions

1) The title is not appropriate, as the paper considers not only alcohol drinking, but also other risk factors for obesity.

Response: we have revised the paper throughout to focus just on alcohol use and not other health behaviors. The title of the paper has been changed, because re-analysis of the data resulted in a finding that corroborates that reported by Breslow and Smothers. By introducing binge drinking as another measure of alcohol use, we now find a negative linear relationship between frequency and obesity.

2) A lot of caution must be given to the finding that smoking is inversely related with obesity, as anyway smoking must not be considered a preventive measure for any condition. This must be pointed out clearly in the abstract and throughout the manuscript.

Response: we have revised the manuscript to deter readers from thinking that we view smoking as a prevention strategy for obesity.

3) Results of the Abstract: "In comparison to non drinkers, people who consumed alcohol 1-14 days per month ...." Do the authors know how much alcohol? Although they are all occasional drinkers, depending on the amount drunk, these people can be heavy or moderate drinkers.

Response: we introduced a new variable into our model: times in the last month when five or more drinks were consumed (binge drinking). This changed the findings as mentioned above.

4) Background, 3rd paragraph, 8th line: "Investigators from ...." This should be a different paragraph to avoid confusion between risk factors for obesity and risk factors for chronic diseases, as cigarette smoking is favourable on obesity risk, but extremely dangerous for many chronic diseases.

Response: done.

5) Background, before citing reference 11: It must be specified that reference 11 refer to chronic disease and not specifically to obesity, for which smoking is not a risk factor.

Response: done.

6) Background, last three words: I would omit "as risk factors", as it is ambiguous for the same reasons specified above.

Response: done.
7) No information is given in the Methods on how variables of interest were collected. For instance, smoking information appears to include number of cigarettes/day; did it include also duration, age at starting or other time-related factors? Did the information on drinking include only number of days/month in which the subjects drunk, or also if it was regular drinking, the amount drunk, etc? These type of information should be given in the Methods for each variable of interest.

Response: we have expanded the methods section to detail how each variable was measured.

8) Results, 2nd paragraph, 2nd sentence: "Age 46 to 55 ...." this sentence is not clear. It could be something like "subjects aged 46 to 55 years and those with more frequent mental distress are more often obese. Cigarette smokers were more often lean, independently of number of cigarettes smoked".

Response: the paragraph has been revised.

9) Results, 2nd paragraph, 3rd sentence: A new paragraph should start here because the text refer to a new Table and include all the rest of the results, which should not be divided further in paragraphs.

Response: done.

10) Results, 3rd paragraph, 3rd sentence: "In comparison ....." Too few subjects are included in the 15 or more category and the results are not informative. I would suggest to change the cut-point to the median value, and report this finding on 15 or more in the text of the Results.

Response: we changed the cut point. Now about 15 percent are in the occasional drinking category and about 15 percent are in the frequent category.

11) Table 1 and 2 should be put together, as they give the same information for different variables.

Response: this is the only suggestion we did not follow. We were concerned that the table would be too long to fit easily on the page in the journal. If combining is necessary and desirable, we are happy to do so.

12) Table 1: for 46 subjects there was no information on BMI. These subjects can be excluded from the analysis and this mentioned in the Methods.

Response: done.

13) The percentage of male/female and by educational status are wrong, as the sum is not close to 100 in the "overall" column.

Response: we changed the first column of the table to show percent and frequency. Cases are limited to those with responses to the weight and height questions.

14) I would suggest to put numbers rather than percentages in the "overall" column. Percentages by column are confusing, as they are by line in the other two columns of the Table.

Response: we changed the first column of the table to show percent and frequency. Cases are limited to those with responses to the weight and height questions.

15) Table 3: variables included in the regression models should be listed in the legend of the Table.

Response: we now show a legend with other variables included in the model listed.

16) All the discussion related to alcohol drinking should wait for a better analysis of results and the very recent paper from Breslow and Smothers (Am J Epid 161: 368, 2005). Also the paper from Colditz et al (Am J Clin Nut 54: 49, 1991) should be mentioned.

Response: the following text has been added to the discussion.

Recent epidemiological studies of alcohol use and health have measured alcohol use in a variety of ways. Some measured frequency of alcohol use while others measured intensity (drinks per occasion) and some measure alcohol use both ways. Researchers also measured obesity in several different ways. These have included body mass index, waist circumference, and hip circumference.

The relationship between episodic heavy alcohol use and overall self-rated health was examined by
Okosun et al (2005). Episodic heavy drinking was defined as consumption of 5 or more drinks at one occasion (for men) or 4 or more drinks (for women). This kind of bingeing was a significant risk factor for poor self-rated health. Okosun et al did not report any findings relating to total drinks per week or number of drinking episodes.

Paschall, Freisthler and Lipton, who studied alcohol use and depression among young adults (AJPH 2005) created seven categories of alcohol use based on drinks per occasion rather than frequency of drinking. They defined moderate drinking as no more than 1-2 drinks per occasion. Their analysis of data from the National Longitudinal Study of Adolescent Health showed that moderate drinkers were less likely to have depressive symptoms than either heavy drinkers or abstainers. Since depression and alcohol use both are related to obesity, this is an important finding.

Vadstrup et al (2005) studied waist circumference in a large population survey of Danish adults. They measured alcohol use with total number of drinks per week but counted neither the number of drinking days nor the number of drinks per occasion. Vadstrup et al found the smallest waist circumference in persons who consumed 1-7 drinks per week.

In another Danish population-based study, Tolstrup et al (2005) studied both frequency of drinking and total alcohol intake. They found obesity to be positively correlated with total drinks consumed but inversely correlated with frequency of drinking. Obesity was measured by waist circumference and hip circumference.

Finally, we note that Breslow and Smothers (2005) found a positive and linear relationship between BMI and quantity of alcohol, while drinking frequency was positively related to BMI. The lowest BMI was found among persons who drank small quantities frequently. This study was limited to persons who never smoked so the results may not be generalizable.

Our study differs from previous research in that it uses a sample drawn from a primary care population that is largely low-income. We employed BMI to measure obesity and we measured alcohol use with drinking frequency as well as intensity. Our measure of intensity (binge episodes) was answered too infrequently to allow for firm conclusions. With this design, we found that persons who drink more often were less likely to be obese. This finding corroborates the results reported by Breslow and Smothers. Since our study appears to be the first to focus on drinking frequency in a low-income primary care population, we think the results are useful to investigators who study the epidemiology of obesity.

Minor Essential Revisions

None

Discretionary Revisions

1) I would suggest to omit the second and the fourth sentences of the Conclusions of the Abstract. I would report also that hours watching television should be reduced, while smoking, although its effect on body weight must be stopped, because of other more deleterious effect on general health.

Response: done.

2) eliminate the second last paragraph of the background.

Response: done.

3) I am surprised that in the USA a low-income population with 25-26% of people worried about having enough food, may have such a relatively high educational level.

Response: We use worry about food as an indicator of poverty. When we cross-tabulated education and worry about food we found a strong association in the expected direction. The confusion here may be due to the nature of our sample, which we describe as largely low income. The sample is not entirely low income, as the number of persons with higher educational levels demonstrates. We believe this to be typical of community medicine clinics: patient populations are below average in income and include many persons in poverty. However, other people who are better off sometimes use these clinics.

Thank you for the opportunity to revise. The feedback from the reviewer has made this a much better paper.

Sincerely,
The authors.