Reviewer's report

Title: Alcohol consumption and binge drinking in adolescents: comparison of different migration backgrounds and rural vs. urban residence - a representative study

Version: 1 Date: 7 September 2010

Reviewer: Lorenza Scotti

Reviewer's report:

The manuscript provides useful data on the prevalence of alcohol consumption and prevalence of binge drinking in a large representative sample of German adolescents focusing on difference in behaviour according to migration background and urban-rural residence. However there are some flaws which require to be taken into account.

Minor Essential Revisions

Method section

In the “Design” subsection the authors:
- wrote: “The classes of region size were: Western Germany (urban districts): cities with more than 500,000 inhabitants, cities with more than 100,000 inhabitants, cities with less than 100,000 inhabitants”. Perhaps the authors means "cities with more than 100,000 inhabitants and less than 500,000". Could the authors specify it in the text?
- asserted that: “The goal was to survey 50,000 adolescents from different regions”. Could the authors briefly explain how the sample size was established?

In the “Sample” subsection the authors:
- wrote that 44,610 students out of 71,891 drawn accepted to participate. Is the response rate similar to other survey on adolescents?
- gave an example of the reliability of the proportion of the sample respect to the proportion of population for each area. Perhaps a more details about this reliability between the drawn sample and the target population could be useful for the readers.
- should always report the standard deviation when a continuous variable (as the mean age of first consumption) is reported.
- wrote “In the large cities, the return rate was lower in comparison with rural districts and urban districts with less than 500,000 inhabitants”. Could part of the difference in prevalence of alcohol consumption between cities, rural districts and urban districts be explained by this fact?

The authors have already reported in “Discussion” section that generally the subjects who refuse to participate could have a higher alcohol consumption.
respect to those who participate in the survey. Could the authors stress this concept?

In the “Statistical analysis” subsection:
- the author should better specify that ANOVA test was applied to continuous variable and chi square test to the categorical variables. Moreover the authors reported as significant a p-value of 0.001. Could the authors add a reference which justify this value?

Results section

In the “Alcohol consumption patterns in a rural-urban comparison “ subsection:
- the authors should report the data of life-time prevalence of beer and hard liquor in the text.
- is not clear how the authors reported the test F results. Are the numbers included in brackets the degree of freedom of the test? In this case, should not be reported two type of degree of freedom?
- the authors reported that there’s a difference between rural and urban residence in age of first consumption of beer and alcopops. These results are in contrast with figure 3 were confidence intervals seem to overlap suggesting no difference. Please check these results.
- the authors specified that a sensitivity analysis was performed. Please describe better this analysis reporting the details in the “Statistical analysis” section and provide the corresponding results in the “Results” section.

In the “Alcohol consumption patterns in adolescents with migration background” subsection the authors:
- wrote “As shown in Figure 5, beverage specific lifetime prevalence shows the same pattern as life-time prevalence of alcohol with differences between Turkish adolescents and more similar behaviour among German and former Soviet Union adolescents”. Did the authors perform an ANOVA with contrast to detect this result?
- stated that “Beverage specific analyses show that basically the youth tries first beer, later wine and sparkling wine, then alcopops and last hard liquor”. Please could the author specify better this issue?
- reported “…adolescents with “Russian background” have the highest prevalence of regular consumption of..” Please provide a definition for “regular consumption”.
- showed a range of days of binge drinking with decimal. It’ not clear why this maximum and minimum values are not integer values?

The authors should include the data on alcohol in general in table 2, and the confidence intervals in figures 2 and from 4 to 8.

Discussion section

The author stated:
“Furthermore, the differences were also shown in a multivariate analysis of the sample for drugs in general”. It's not clear if the multivariate analysis was performed on the same sample and which results were confirmed.

“In summary, 15-year-olds residing in rural areas drink on more occasions a year, engage more often in binge drinking and have higher life-time prevalence for all alcoholic beverages” Which is the reference group?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests