Reviewer’s report

Title: Trends and correlates of driving under the influence of alcohol among different types of adult substance users in the United States: A national survey study

Version: 0 Date: 04 Sep 2018

Reviewer: Reviewer 2

Reviewer’s report:

PEER REVIEWER COMMENTS: To view the full report from the academic peer reviewer, please see the attached file.

REVIEWER COMMENTS FROM REPORT: The authors have devoted their study to an important public health issue of driving under influence of alcohol. The paper is well-structured and generally well written. Authors provide a sound justification for their approach to consider the changes in drinking-and-driving among those people who abuse other psychoactive substances. However, it seems that their analytic approach contradicts the study rationale. What was done, does not allow answering the question of whether drinking-and-driving among drug users declines faster or slower than among all drivers.

REQUESTED REVISIONS:

To bring the analysis in concordance with the declared goals, I would expect to see the mathematical description of how the selected outcome measure (DUIA) declines (or changes) over time among either the whole surveyed population or among those who do not use the listed psychoactive substances and, based on this, the deviations from this trend seen in the groups of people using various drugs. To do this, in the regression model, I would (1) add the groups of non-users, (2) consider year variable as a continuous (not categorical) one, (3) explore which function is the best to approximate the trend of DUIA over time, (4) consider interactions drug X year and possible interactions with other variables. After this model is fitted, it would be possible to conclude that, for example, in case of linear approximation, overall DUIA declined by x% per year while the decline among drug N users was 30% slower or 70% faster etc.

Then the discussion would be logically devoted to the analysis of those interventions which were in place over the studied time span and the mechanisms of their varying impact on the considered groups. Hypotheses on what can work in the future usually also look well in such discussions.

ADDITIONAL REQUESTS/SUGGESTIONS:

Comments related to particular sections:
The explanation regarding "six mutually exclusive groups" is given both at the end of the Introduction and in the Methods section. Probably the first one needs to be deleted.

In subsection 2.2.3, the authors explain that "The NSDUH used DSM-IV criteria for substance abuse and dependence [41]"; however, it is not quite clear who was considered as alcohol dependent for the particular analysis.

Table 1 shows the distribution of study subjects by sociodemographic characteristics. However, it is not clear why confidence intervals for percentages of people are shown. These are not estimates of associations but just the characteristics of the structure of the sample. These confidence intervals are not needed and are usually not shown.

In section 3.1 of the text, the authors describe the differences in terms of lower alcohol use among those study participants who used prescription opioids only. However, it is hard to consider this as an advantage. Studies conducted in various countries identify people who prefer opioids and avoid alcohol. However, I would abstain from the conclusions that this makes driving safer.

Particular sentences in need of revision are as follows:

"In the NSUDH, respondents were asked about following questions..."  

"3.3. Adjusted logistic regression model predicting factors associated with DUIA (Table 3)"

**Are the methods appropriate and well described?**  
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**  
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**  
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript
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Please indicate the quality of language in the manuscript:

Acceptable

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