Reviewer’s report

Title: Patient knowledge and behaviour regarding driving under the influence of medicines: a multi-country survey.

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Reviewer: Keshia M. Pollack

Reviewer’s report:

Article review – BMC patient knowledge
The purpose of this article is to describe the state of knowledge about medicines and driving among European adults. While interesting, I am very concerned that the data collection method only generated an 18% response rate, and as such, I question the validity of the comments that were made. I am especially concerned about non-response bias, which was not adequately explored. My specific comments on this article are below. Also, there were several grammatical errors and this paper needs to be closely read and edited.

Major Compulsory revisions

Abstract:
1. Results mention the number of questionnaires that were analyzed, but the denominator was not listed. I suggest either including the response rate, or both the response rate and the total number of questionnaires that were distributed.

2. Conclusions: Since education alone rarely changes behavior, why not call for policy change that could be combined with the education? Furthermore, by stating that the information provided is ineffective the authors are overstating the findings. The study was not an intervention effectiveness trial – rather it was cross-sectional. Thus, comments about the results should be germane to the data on knowledge and attitudes that was collected.

Background
3. Page 5: bottom paragraph “…numerous models have been derived…” the authors go on to discuss theory, but what studies used these models? Include references here.

4. Why is this US study (reference 11) germane to the background section? Why do the authors believe it is applicable to the EU?

Methods:
5. Were there other counties that were approached to participate in this research? As I can infer from the top of page 7, it seems that these 4 countries are different than others. Might there be some bias here?

6. The authors said that reliability was ensured since the survey was used in other study. This is not entirely true. An invalid survey can be used multiple times! What were the psychometric measures from the initial study? And why
was it chosen for this population?

7. Little information is provided regarding how the pharmacists chose the thousand patients. Did they sample every person who met the inclusion criteria who entered the pharmacy? For how long? All day? Or certain times of the day?

8. The number of pharmacists enrolled was included. What number from each country refused to participate?

9. Were the pharmacists trained? How can the authors be sure they screening methods were reliable between counties, and between pharmacists?

10. How long did the survey take to complete? How was it administered? Paper? How was the data entered? How was reliability assessed? Did anyone refuse to participate in the survey after hearing about how long it would take? Did the refusal rate vary by age? Or other key demographic variables?

11. The definition of frequent users is worrisome. “Frequent” seems to be only based on the number of times the vehicle was used, verses some combination of number of times and duration. If someone drives less than a mile 4 times a week, and 20 miles 1 times a week, the latter has greater exposure to the road, and thus should be at greater risk. How did you handle this?

12. One of the questions asked if the patient read the PIL. This for me raises the questions of reading versus comprehension. Did you also ask about the latter?

13. How was missing data handled? What percent of the responses had missing data? Did the percent missing vary by country? There was no mention of this in the article.

Results:

14. Page 13, consider further breaking down the percentages/frequency of the surveys that were discarded for various reasons. For example, XX% came back with no answer; XX% belonged to patients…also, how did these values vary by country? Were there systematic differences?

15. Table 2: This table is misleading. The number of surveys used in the analysis is less than the response rate. By including the frequencies and percentages, the numbers are questionable.

16. Table 3: Are these significant differences between the countries for these variables? Include a column in the table with p values where relevant.

17. Table 4: Drug use for the older groups: I suspect there is an interaction here. Also, what is the driving rate for people in this category? Does it matter if they have the knowledge if they are not frequent users? How did they key variable break down by age?

18. Figure 1: were these differences between countries significant? If so, add the p values to the figure.

Discussion:

19. Since questionnaires came back from patients that did not meet the inclusions criteria, how confident about you that the pharmacists adhered to the study protocol in administering the survey. Since no magnitude was given
regarding this number, it is difficult to determine how much of a problem this was in the study. And did it vary across countries?

20. The omission of questions about policies affecting impaired driving is curious to me. Why was this not asked or why was it not even discussed in the paper?

21. Page: in response to the low response rate the authors say the results are still valid. How is this the case? Please comment further.

22. The authors assume that increasing/better communication will improve knowledge. This is not true and it does not fit with the theoretical models presented earlier in the paper. Please comment further on this.

Minor

Abstract:
1. DRUID: either remove or spell out what this acronym stands for.
2. Should be patients’ intended use; apostrophe is missing.

Results:
3. Table 1: missing parenthesis in bullet #2. Typos in the table.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I declare that I have no competing interests