Reviewer’s report

Title: Marijuana legalization and historical trends in marijuana use among US residents aged 12-25: Results from the 1979-2016 National Survey on Drug Use and Health

Version: 0 Date: 24 Jul 2019

Reviewer: Jorgen Bramness

Reviewer's report:

Major concerns

We know that there is "mixed situation" in the US (this is from a European reviewer), and for us quite peculiar. Where medical use is blended in with a somewhat of a precursor for the recreational use. In Europe this is quite different and more divided. And the authors should take this more into consideration. In the first paragraph they say in the same sentence "it may relieve pain, but there are also adverse consequences [of recreational use]", illustrating this mix - a mix that is also apparent in the first paragraph page 4

I am surprised they don't cite and discuss Hughes and coworkers form addiction 2018 - an important piece of work in this context. I would think this could be done on the top of page 4 (Hughes B, Matias J, Griffiths P. Inconsistencies in the assumptions linking punitive sanctions and use of cannabis and new psychoactive substances in Europe. Addiction 2018; 113(12): 2155-7).

There are too many figures, and they are not all necessary. I would think that figure 2 could be eliminated, as this is the figure that contributes the least with new data, only confirming what we already know

It is not easy to understand the cohort phenomenon in detail. Please go through the manuscript and try to make it clearer, especially in the discussion (page 13) what the findings signify.

Minor concerns

Please state that this is an ecological study already in the abstract. The abstract should also contain a mention of the 31 waves included.

The abstract has repetition of the method used (last part of method and first part of results). This is unnecessary.

I would prefer if the abstract contained more explicitly what they have found.

Page 4 line 6 (16-17): don't use "non-responsible" - it is judgmental and imprecise

First paragraph of page 5 should have a better discussion of the weaknesses of previous studies

Last but one line on page 5: is it likely that these data can say something about the use of cannabis back to 1954 (when the first respondents were first born....)?
I am not sure that the last sentence of the second paragraph of page 6 holds true (the sentence that ends with reference 27)

Page 6 last sentence: please explain all abbreviations before they are used (here NSDUH)

Second paragraph page 11: it would be better if they wrote: "(1) the Historical Declining Cohort (HDC): those born in 1954-1972" etc.: to make it clearer that this is different form the prevalence data

Last paragraph page 11: it is excellent that they control for the cohort data in the prevalence data, but please explain better how this was done

Discussion, first paragraph: I would refer if the first paragraph of the discussion stated the main findings and did not contain yet another reference to method and some general remarks about the value of the research

General remark to discussion: in all other parts pf the manuscript (aims, methods and results) the period/prevalence data are mentioned first, but in the discussion the cohort data are discussed first. Please keep one order and stick to that to help the reader

Page 15 second paragraph last sentence "…and avoided using "War in Drugs". Avoided what: the term, the idea or the action?

The limitations section should contain a reflection on state-wise data, as this is a short-coming that I am unsure why they did not consider. It would have been a very significant addition to the manuscript if they were to have such data (comparing different states) in stead of just adding up the percentage of the US population having experience with different laws.

Table 1: the last 5 lines of this table can be deleted. Such "sum values" are contribute very little. If any additional numbers should be added it should be percentages of the male/female columns or even the ethnicity columns. This would help the reader to see if some of the trends could be explained by these factors. But even this would be a bit too much.

Figure 2: can be taken out.

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

Yes

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

Yes

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

Yes
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.

I recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Acceptable

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