Reviewer's report

Title: Exploring comorbid use of marijuana, tobacco, and alcohol among 14 to 15-year-olds: Findings from a national survey on adolescent substance use

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Reviewer: Jeremy Luk

Reviewer's report:

This is my review of the revised manuscript “Exploring comorbid use of marijuana, tobacco, and alcohol among 14 to 15-year-olds: Findings from a national survey on adolescent substance use”. This research utilizes a large national survey in New Zealand, and addresses a novel question regarding comorbid use of three prevalent substances. The analyses appear to be appropriate for the research questions. The limitations of the study have been clearly and adequately noted. Overall, I believe this report has important public health relevance and is of publishable quality.

I have several suggestions for the authors to consider:

Minor Essential Revisions

1. The authors mention that this study is not only about factors leading to, but also about results of multiple substance use (e.g., page 2 abstract: “revealing the factors leading to and resulting from…”, page 6: “This study investigates the prevalence of, underlying risk factors for, and harm arising from…”). It is clear to me that many of the variables examined in this research can be considered as risk factors. However, I am unable to identify the “harm arising from” comorbid substance use. Given how the authors set up the paper, I thought other types of harm, such as internalizing or externalizing problems, or poor academic achievement, would be examined. Please clarify whether or not there are indeed other outcome variables included in this study, and if so, which ones (i.e., make it clear which ones are the risk factors versus the outcome variables).

2. Pages 7-8: When I first read alcohol use in the manuscript, my impression was that the authors were measuring past month alcohol use, but not past month binge drinking. Given that alcohol use is measured by a single past month binge drinking item (which is acceptable), I wonder if it’s more accurate and straightforward to simply call the variable binge drinking throughout the manuscript. I think this could avoid potential and unnecessary confusion for the readers.

3. Page 9: Combining the parental rule enforcement and monitoring items seems odd to me. Perhaps they are moderately or highly correlated in your sample (?), but I cannot conceptually connect the two as a single construct. Please either separate the two items in your analyses or provide a justification of your choice (ideally both theoretical and statistical).
4. Page 12 and throughout manuscript: I find the terminology confusion. At times, the authors refer to the three substance use behaviors as risk behaviours (page 11) or harmful behaviours (page 12). While all of these are not incorrect, I think it’d do the readers a big favor if the authors can be consistent with their terminology. For example, call these “risky substance use behaviours” throughout the manuscript.

5. Page 14: The authors alluded to the idea that there might be a common underlying vulnerability to substance use. I believe there is a pretty sizable literature on the externalizing spectrum. I think the authors should cite a few representative articles so that readers can refer to those papers if they were interested.

6. Minor typos:
   - Given that “student-level” is hyphenated, I think “school level” should also be (page 10).
   - I think “focussing” page 15 should read “focusing”.

Discretionary Revisions

1. Page 4: “A longitudinal study of children studied to the age of 16…” I wonder from what age did this longitudinal study start—was it from birth, childhood, or early adolescence? Some additional information would be helpful (e.g., from the age of 12 to 16).

2. Page 8: This is a minor point. For international readers, it might be useful to specify what currency the income was measured by, and perhaps a conversion to USD might be appreciated by some.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests