Reviewer's report

Title: Surveying alcohol and other drug use through telephone sampling: a comparison of landline and mobile phone samples

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Reviewer: Young Cho

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The paper addresses two key questions: 1) How different are mobile-phone only respondents from respondents sampled using traditional CATI methods?, and 2) How well does the use of a dual-frame sampling regime overcome issues of undercoverage in landline-based telephone surveys? Authors stated that these two questions can be answered by analyzing the “data in two ways – firstly comparing the respondents living in mobile-only households with the landline sample and then comparing the entire sample collected via mobile phones (including those who have a landline) with the landline sample).” It seems that the first question is addressed adequately. However, authors need to explain more clearly how these two ways of data analysis would answer the second question. Also, the interpretation of the results is not well linked to the second question.

In Discussion section, it is stated that, “The results … suggest that [a dual-frame survey] can provide more robust estimates of cannabis use and smoking.” However, it is not well explained how the results actually “suggest” more “robust estimates” of these two variables of interest. As authors noted, the estimates of cannabis use or tobacco smoking using landline-based telephone survey methodologies may underestimate prevalence rates by excluding respondents in mobile-only households who undertake these behaviors more frequently than people living in households with landline telephones. The evidence for this was presented as between-mode differences measured by odds ratios. To be clearer about this, however, I would strongly recommend authors estimating the potential bias in landline telephone surveys (excluding cell phones) by assessing the percentage by which these variables of interest would be underestimated if the estimates were based only on the landline survey data as used in the previous research (e.g., Hu et. al. reference # 12).

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