Reviewer's report

Title: Teenage drinking, alcohol availability and pricing: a study of risk and protective factors for alcohol related harms in school children

Version: 1 Date: 2 March 2009

Reviewer: Tomi Lintonen

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The paper examines 15-16 year-olds’ drinking habits and associated self-experienced harms using a relative large, though non-representative sample. Some potential associations with ecological and personal factors are also analysed. An anonymous school survey was used for personal level data collection. In addition, ecological data was used to examine neighbourhood effects. Information on alcohol retail prices in the region was also gathered. Altogether, the paper addresses interesting issues on adolescent alcohol use. The emphasis on related harm is rather novel and, in my opinion, very important. The research questions seem to have been formed based on practical prevention interests as opposed to theoretical models - and this is, to some extent, reflected on the somewhat fragmented structure of the paper.

The use of the phrase ‘memory lapse’ to refer to the question ‘tend to forget things after drinking’ is, in my understanding, not warranted. ‘Memory lapse’ has been discussed here in the context of neurobiology whereas in my view, adolescents’ tendency to forget some things after drinking more probably indicates social-psychological defences or absentmindedness. In its current form, I think the paper over-interprets and exaggerates the meaning of forgetfulness. Please re-phrase ‘memory lapse’ throughout the paper. I consider this revision ‘major compulsory’.

It was interesting to note that cider, spirits and beer seemed more related to harm while alcopops where not - bearing in mind the wide concern over the spread of these rather new products seemingly developed for the adolescents. Maybe something could be mentioned on this issue?

Abstract

p.2 The abstract should inform the reader that the sample was non-representative.

p.2 (and e.g. p.9) Excessive numerical precision gives the reader a false sense of accuracy as well as makes reading harder - please omit decimals.

p.2 The Results paragraph contains marginally interesting details on e.g. deprivation while ignoring results on the importance of drinking style (=bingeing) and drink type; cider and beer seem to associate with more harm whereas alcopops don’t - this is not just a ‘cheaper alcohol’ issue.

p.3 The conclusion ‘…limiting … once a week…’ is not really based on results.
How about something on price control?

Background

Please explain ‘CRITICAL adverse outcomes’ (immediate harms?)

Methods

‘usual frequency’ - this concept is not particularly useful in the context of adolescent drinking, which is more characterised by partying and occasional drinking. Very little can be done about it at this point except discussing the issue later in the paper.

‘memory lapse’ - see above. It would help the reader to form his/her view on the issue if the question and its options were presented here in their original form. What was the original distribution? How was the cut-off decided on?

‘sampling’ or ‘data collection’? Please also explain the reasoning behind intended data-set size and age-limits.

Please provide information on the number of eligible students and response rate. Also, information on gender distribution (and response activity) is needed.

information on the ‘income’ (allowance?) indicator is missing.

information on the numbers of missing responses per variable is needed.

Results

excessive numeric precision

‘...increase with...’ this wording actually leads the reader to think in the lines that when e.g. a person’s income increases the negative outcomes will increase - which may not be the case and has not been studied here anyway. What has been shown is that the outcomes are more frequent among those that have more money at their disposal.

it is difficult to decide if the use of ‘income’ is justified when the actual question has not been shown. Or is this more like 'money at their disposal’?

2nd para row 4 ‘large value cider’ - the analysis shows that drinking cider regardless of the bottle size is related to the described outcomes.

3rd para ‘...controlling for interaction...' or confounding?

‘...income was strongly ...' how was the strength/weakness of the relationship analysed?

the results (table 3) show that the difference between those whose parents provide alcohol versus those whose don’t is evident among those that drink infrequently but no difference is observed among those drinking several times a week - is this not an interesting result?

Discussion

Discussion is commonly opened by presenting the main results.
p.11 there are a number of other limitations worth mentioning; e.g. non-representative and possibly biased (percentage of respondents per those eligible) sample, item missing information, measurement issues (e.g. ‘usual frequency’, ‘typical week’).

p.11 ‘…only be approximations…’ - I would say rather very rough approximations.

p.12 ‘…adverse effects of alcohol were limited to four measures…’ - it would be informative to refer to other studies addressing a wider range of adverse outcomes, e.g. the Hibell et al. ESPAD reports and Lavikainen H, Lintonen T (2009): Use of open-ended versus structured questions to identify alcohol-related harms among teenagers: A method comparison study. Journal of Substance Use 14(1):39-48.

p.13 3rd para while it is shown that bingeing is related to greater harm, the discussion on neurocognitive effects presumably based on the ‘memory lapse’ biological interpretation is not well studied nor shown in this paper.

p.14 2nd para: the first 9 lines of this paragraph describe results not shown in the Results section. If the authors wish to present these, they should be moved to the Results section. However, a better solution would be to omit them altogether since they do nothing to clarify the issue further.

p.14 2nd para: drinking cider was related to more adverse outcomes regardless of the bottle size; the explanation offered here is not warranted. The explanation offered later in the paragraph seems more feasible: cider was the cheapest form of alcohol, presumably more readily available and possibly better culturally suited to the drinking context.

p.15 ‘…a minimum price for alcohol…’ this is really a recommendation - and an important one. I suggest it be presented in the conclusions and the abstract.

p.15 ‘Drinking standard size beer …’ the issue of beverage type has been studied e.g. in Lintonen T, Konu A (2003): Adolescent Alcohol Beverage Type Choices Reflect their Substance Use Patterns and Attitudes. Journal of Youth and Adolescence 32(4): 279-289 - with results that are in line with those found here.

p.16 no references to Tables are needed here in the Conclusions section.

p.16 the recommendation of limiting drinking to once a week is not well supported by the study whereas the recommendation to never binge is.

References

p.21 ref38 access date should be provided

Tables

Table 2 This really should be two separate tables

Table 2 The alcohol beverage types should be ordered using some logic, e.g. the mean unit price

Table 3 Excessive precision makes the table hard to read and adds no usable
information. Further, it gives the reader a false sense of accuracy.
Table 4 ‘Bitter cans…’ should be ‘Beer cans…’
Table 4 the highlighting does not show - better come up with some other solution to pinpoint the non-exclusive categories.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.