Reviewer's report

Title: Are psychosocial stressors associated with the relationship of alcohol consumption and all-cause mortality? Findings from the MONICA/KORA Augsburg Cohort Study, 1984-2002

Version: 4 Date: 6 September 2013

Reviewer: Rebecca Evans-Polce

Reviewer's report:

This paper uses the MONICA/KORA, a large prospective cohort study to examine potential confounding as an explanation for the J or U-shaped curve seen with alcohol use and mortality. Specifically, this paper addresses an important issue of the potential confounding of psychosocial stressors in the relationship between alcohol and mortality. This is an important study addressing an existing research gap.

Major Compulsory Revisions

Results:

The inclusion of Table 1 showing abstainers are more unhealthy/sicker seems like a separate issue from the main question of this paper (are psychosocial stressors confounding the relationship of alcohol and mortality?). Particularly because these individuals are not even included in the main analysis, I would suggest taking this table out and just discuss who was excluded in the text of the methods.

Discussion

1. Second paragraph discussing the separation of lifetime abstainers and ex-drinkers is unclear. It needs to be clearer on stating which group showed a protective association. Authors should also discuss other possible differences between former drinkers and abstainers that they were not able to account for such as potentially previous problematic drinking among former drinkers.

2. In the strengths and limitations, authors should discuss the limitation of measuring alcohol for only a single week and the limitation of applying a single weekday of drinking to all weekdays.

3. The paragraph beginning with “despite of simultaneous consideration…” is unclear. It begins by discussing that there may still be uncontrolled confounding but I do not understand the meaning of the following sentences and how they relate to this issue, as this analysis controlled for smoking and some socioeconomic variables.

4. The short paragraph discussing potential biological mechanisms should be expanded.

5. The authors mention that binge drinking specifically may be harmful, but this
was not measured in this study so is that a limitation of the study?

Figures/Tables
1. Authors do not discuss Figure 1, except for in the methods to say that it uses different drinking categories. It is not mentioned in the results. What is the significance of this figure?

Minor Essential Revisions

Introduction:
1. Author does a good job of explaining that there is a relationship between both psychosocial stressors and alcohol and psychosocial stressors and mortality, but more discussion of the potential mechanism of this would be helpful in the introduction. The paragraph on internal/external psychosocial stressors and health is unclear.

2. Some awkward phrasing throughout paper. For example, pg. 3 “…relationship between alcohol consumption and mortality is accomplished by psychosocial factors.” Pg. 4: “moderate alcohol consumption as typical element…”

3. As gender differences are looked at throughout the paper it would be nice to have some background on sex differences in the alcohol/mortality relationships in the introduction and what the authors hypothesize for males and females.

Methods
1. Delete “a number of “ in study group section
2. Authors should bold or italicize variables or separate them by paragraph to make it easier to see at a glance of the text what variables were included.
3. Authors should include a citation for the ‘person-years method used to estimate crude incidence rates.
4. Author states that the proportional hazards assumption was assessed but not whether it was met. Please clarify this.
5. Change “goodness of the explanation” to goodness of fit
6. Authors should clarify why all possible interactions of alcohol with psychosocial covariates were tested.

Results
1. Why was the abstainer group chosen as a reference? It seems like it would be useful to have the moderate group as the reference in order to see if there is an increased risk for heavy drinkers compared to moderate drinkers.

Discussion
1. Authors should discuss the advantage/disadvantage of including only a healthy population at baseline and the impact on external validity by doing this.
2. There was a counter intuitive finding that among men, moderate drinkers living alone had a reduced risk of mortality compared to moderate drinkers not living alone. I would be interested to see a brief discussion of potential reasons for this
finding.

3. Also, the finding that there were no differences in depression and other psychological distress was interesting given that many others have found differences. Authors should explain why they think they did not find this in their study.

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

**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.