Reviewer's report

Title: Gender differences in mortality and risk factors in a 13-years cohort study of street-recruited injecting drug users

Version: Date: 22 October 2013

Reviewer: Jessica Storbjörk

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Major Compulsory Revisions

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Minor Essential Revisions

1. Background (p. 4-5): Are there previous studies of income (other than prostitution) and patterns of use and mortality? Risk factor included in the study.

2. Print out NEP (p. 5)

3. Participants and labelling (p. 6. and elsewhere): The authors use the term IDUs and say that the study uses a street-recruited sample. However, respondents were all visiting a NEP and thereby had contacts with at least one form of health care/drug treatment (although low-threshold and perhaps anonymously). Previous estimates of NEP populations or reports based on interview data in the current study of how many had other treatment contacts would be beneficial (both in analysis and conclusions). Are such data available? Would it be more appropriate to use another label than “street-recruited IDUs”? Only heroin users included (see also Sample characteristics below)?

The possibility to be able to link the sample also to information about imprisonment and treatment would help clarify some of the results and conclusions. Is that possible in the future?

4. Representativeness (p. 6) is judged by a comparison with those who did not want to participate in the follow-up. Do you have information about how many refused to baseline interview in the first place?

5. Sample characteristics (p. 11/Table 1): What other (illegal) drugs than heroin were used/injected? Is this primarily a study of heroin misusers? Other opiates? Amphetamines? Describe.

6. Aim/structure: The abstract and the aim state that the study analyses gender differences in cause of death. The abstract does not mention any results regarding cause of death and this is only briefly presented in the text. I suggest that cause of death is included in Results in the Abstract or, perhaps preferably, that cause of death is deemphasized in the aim/abstract and moved to the description of the sample (and deaths), i.e. prior to the risk factor analysis
Table 2: Interesting and unexpectedly, age is not significant in the Log-logistic regression analysis. Why? Is it such a young and extreme high-risk behaviour population that age becomes less significant? Mortality is unusually high compared to the previous studies cited (which could be elaborated in the text). Or, is that due to the fact that women who reported income from prostitution were older? Is age significant if prostitution is left out from the model? Elaborate why age is not significant.

8. Related to that, most of the deaths occurred in the first two years (17 out of 45 deaths). Does that mean that long-term follow-ups are less important when analysing typically hard to reach and very severe drug using populations? What happens after three years – either you die or you become motivated enough to change your way of life? Just a thought.

9. Describe the rationale for the post hoc analyses of differences between women who reported income from prostitution and those who did not (p. 13). This is now explained on p. 16 but should be mentioned earlier.

10. It is interesting that women have lower premature death than men despite their more hazardous pattern of substance use. How come? Is this explained by the prostitution covariate (given that more women who received money from prostitution had combined heroin with prescription drugs in injections)? Or is there something protective about being a woman (apart from perhaps receiving more treatment and less imprisonment, as now speculated in the Discussion p 17).

11. Not only women engaged in prostitution should be targeted in prevention but also men, in general. I thereby do not agree with the conclusion in the abstract that only list female prostitution as a special target in preventive measures. Why not suggest harm reducing interventions targeting the combination of heroin and prescription drugs in injections? This is quite well elaborated in the discussion. Please broaden the perspective also in the abstract.

12. Given that the article analyses gender differences, it could be stressed that only one gender specific risk factor is found. A better approach could have been to analyse men and women separately as concerns risk factors. Unfortunately, the sample size does not allow for such analyses.

Discretionary revisions

Add footnote explaining/referring to explanation in Methods about CMR and SMR when these first appear in the text (Background p 4)

Level of interest: An article whose findings are important to those with closely related research interests

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 interest