Reviewer's report

Title: A novel method to estimate exposure reduction in hospitality workers after a smoking ban

Version: 2 Date: 18 March 2013

Reviewer: Matz Larsson

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General Comments

This is a well-conducted study that addresses an important public health issue - the effects of anti-tobacco legislation. A strength of the study is that it is conducted in the same country, during the same period but in nearby regions with shifting or no smoking ban in hospitality venues. It also combines several methods to estimate the exposure.

The voluntary nature of the recruitment process and the loss to follow-up is likely to have resulted in selection bias, which however is adequately discussed.

Is the question posed by the authors well defined?
Yes, the primary question was to assess passive smoking exposure and how that is influenced by legislation.

Are the methods appropriate and well described? Yes but see below about the term “cigarette equivalents”

Are the data sound?
To measure exposure to passive smoking is complicated. I think the authors have tackled these problems and presented the data soundly.

Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes

Are the discussion and conclusions well balanced and adequately supported by the data? Yes

Are limitations of the work clearly stated? Yes

Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Yes

Do the title and abstract accurately convey what has been found? Yes

Is the writing acceptable? Yes

Minor Essential Revisions
Results

“At baseline, badge analysis of all smoke-exposed hospitality venues (intervention group and Control Group I) yielded an average value of 4.48 (95%-CI: 3.7 to 5.25; n=214) cigarette equivalents (CE)/day. This means that a person present in a smoke-exposed venue for 24 hours would passively smoke 4.48 cigarettes, on average”

It is not perfectly clear what “cigarette equivalents” means. Does it mean that they had been exposed to a similar amount of tobacco smoke as that of an active smoker smoking 4.48 cigarettes? Perhaps it could be reformulated into:

This means that a person present in a smoke-exposed venue for 24 hours would inhale a similar amount of smoke as a person actively smoking 4.48 cigarettes”

Or does it mean something else? The word “cigarette equivalents” needs to be clearly defined.

The benefits and limitations of using portable samplers for nicotine or locality-bound samplers as an alternative to other methods of assessing exposure to environmental tobacco smoke is interesting. I agree with the authors that a time-weighted average of the workplace badge is likely to be more reliable than e.g. urinary cotinine. The latter is influenced by individual physiological (respiration, absorption, metabolism, and excretion), temporal (exposure duration) and other factors, not least leisure-time exposure.

Discussion

“Thus, salivary measurements will be useful to ensure that future health analyses are restricted to non-smokers only.” It ought to be mentioned that the use of e.g. nicotine patch, nicotine chewing gum or oral tobacco use influence cotinine levels (which also may serve as a further argument for the badges)

The work of Larsson et al., Scand J Work Environ Health 2008;34(4):267–277 may be of interest to mention, since it has many methodological issues in common with the present article.

Conclusions:

The data e.g. showed in figure 1 may justify the formulation: “A comprehensive national law is needed in hospitality venues in Switzerland ….” (i.e. the word “more” could well be omitted).

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