Reviewer’s report

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

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Reviewer: Maria Jose Lopez

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- Major Compulsory Revisions

The study is assessing the impact of different smoking regulations in Switzerland using several methods in order to assess the SHS exposure pre-post law. The study is original since it is using a quasi-experimental study with different groups and methods of SHS measurement. However, the objectives of the study are not clearly stated, the methodology should be more detailed, many parts of the manuscript and the results showed are confusing, and some conclusions do not seem to come directly from the results showed. In my opinion, the manuscript should be rewritten, clarifying the objectives of the study, explaining in detail the methodology used, and showing the results –and consequently the conclusions- in a clearer way.

I include some suggestions and questions that may improve the first version of the manuscript.

Title
I think the title is a bit confusing, since the main objectives of the study are to assess the impact of the smoking regulation and compare the methods used. Therefore, I would suggest the following title: “Impact of different smoking restrictions in SHS exposure in hospitality venues in Switzerland: a quasi-experimental study using four methods of SHS assessment”

Introduction
The aim of the study is referred to the “effect of different smoking bans on SHS exposure in bars, cafés and restaurants”. However, no results are shown stratified by these types of venues. Results stratified by these different types of settings should be shown in the manuscript. On the other hand, “different smoking bans” should be changed to “different smoking regulations”.

The second aim of the study is “to evaluate the reliability”, but “reliability” is a term related to the consistency of a measure, it means a term related with the fact that a measurement produces similar results under consistent conditions. This is not what you are testing in this study; I would suggest rewriting the second aim as “to compare the different methods of SHS assessment”.

Methods
When defining the groups, it would be more appropriate “hospitality venues and non-smoking employees for whom smoking was banned” instead of “for whom smoke exposure was eliminated as a result of a new smoking regulation” (since if the exposure has been eliminated is what you are going to assess with your study).

Why participants of Control Group II were examined only for a cross-sectional baseline analysis?

Control Groups I and III were examined at the same time points that the Intervention Group? If not, what about the comparability??

Regarding the recruitment procedure, it is not clear to me. It is said that the authors used a list of hospitality venues in the cantons of Zurich, and a list using the digital Swiss phone book from 2009 for Basel, but how were the venues selected? Randomly? On the other hand, how was the sample size assessed?

At the end of page 9, it is said that the control venues were measured “at random points in 2010 and 2011”. What does it exactly mean? The time points are not the same that for the intervention group??

Information regarding the losses in the follow-up is necessary

Regarding the MoNIC badges, you said it is adapted from that proposed by Hammond. Why did you develop a new method? Has it been tested against the Hammond method?

At the end, you said that the final batch of saliva samples from control group were excluded due to inconsistencies in lab procedures. Further details would be needed. If these samples were not available what samples included in the group “all” of salivary cotinine in Table 1?

In data analysis, it is said that “the resulting value was multiplied by 1.75 to avoid underestimation of the exposure”. This factor comes from a PM2.5 study, it is not clear to me that the same factor can be applied to nicotine concentrations…

Results

Regarding the Figure 2, What does “time regulation” mean?

Regarding Table 1, it is not clear if you are comparing the intervention group with all the sample, or only with the comparison groups… You should be clear defining what “all” means. Anyway, 87+53=140, but you said you were taking measurements with the badges in 193 hospitality venues…

A priori, the best way of showing the results would be stratifying the data by each group

Discussion

It is said that a significant decrease was observed in all participants that worked
in an environment where a new law was introduced, but according to the data showed in Table 1, it seems that there was also a decrease in the group “all”… How do you explain that?

It is said also that “the type of venue” clearly influenced the number of passively smoked cigarettes per day”, but no data by type of venue are shown in the manuscript.

According to the characteristics of the different methods (personal badges are also measuring exposure outside, badges are specific to a given day, the workplace badge is exposed for a period of one week) it does not seem that the comparability is good enough in order to obtain conclusions about what is the best method…

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

**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