Author's response to reviews

Title: Is there an impact of public smoking bans on self-reported smoking status and exposure to secondhand smoke? Do smoking bans decrease exposure?

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Author's response to reviews: see over
Responses to Reviewer Feedback

Please see our responses to the reviewer feedback below.

Reviewer Alessandro Barchielli

Compulsory revisions

For a better comparison of the results of the two surveys, authors should add (to the analysis stratified by municipalities reported in table 4) a pooled analysis by type of ban modification performed with proper statistical methods, i.e. classifying groups of municipalities as:

- no charge to existing partial ban; - no charge to existing full ban; - strengthening of existing full ban; - introduction of full ban from previous partial ban; - introduction of partial ban from no previous ban; - introduction of full ban from no previous ban.

We have added this additional analysis.

Besides, the main conclusion (“Implementation of a full smoking ban was associated with the largest decreases in secondhand smoke exposure while partial bans and changes in existing bans had inconsistent effects”) is partially in contrast with results of figure 4, showing similar effects between the “Introduction of Partial Ban from No Previous Ban” and the “Introduction of Full Ban from Previous Partial Ban”.

This sentence is unclear to the reviewer. “Inconsistent effects” refers to the non-significant differences in workplace restrictions but significant differences for public exposure. There are indeed similar results between the “Introduction of Partial Ban from No Previous Ban” and the “Introduction of Full Ban from Previous Partial Ban”.

This paper needs to be extensively edited. The following sentences are examples of unclear writing:

The paper has been extensively edited for unclear writing.

Minor essential revisions.

1. Results, first paragraph. Why authors present data on influenza vaccination rates? Besides, the rates reported in table 1 (range: 34.3%-46.0%) are quite different across areas.

Influenza vaccination rates have been removed based on the
recommendation of reviewers.

2. Results, paragraph beginning with “Figure 4 shows...”, fourth and fifth sentences. Rates of complete smoking restriction at work in 2005 vs. 2003 are similar or the decrease was statistically significant? The two messages are conflicting.

This statement has been corrected.

3. Discussion, last sentences. Authors should explain why the 2000-2001 survey could not be used: the unique item of this survey (“the 2000-20001 survey contained one question about SHS exposure”) is comparable or not with items of the subsequent surveys?

This statement has been corrected to explain why the 2000-2001 survey could not be used.

Reviewer: Giuseppe Gorini
Reviewer's report:

Major Compulsory Revisions
1. Add and discuss in Introduction and Discussion the following references you did not report. These references are very important for the aim of your article, since these articles showed cross-sectional surveys before and after the implementation of smoking bans.

The recommended references have been cited in the paper in the introduction and discussion section.

2. Report, please in the Methods the number of participants to the Canadian Community Health Survey in 2003 and 2005.

The number of participants in the survey has been added to the methods section.

3. Explain briefly the Carriere methods, using one sentence more.

The explanation of the Carriere method has been expanded in the methods section.

This method is a nonparametric estimation and hypothesis-testing procedure for standardized rates of events. This test is applicable to both binary and non-binary events and recurrent or non-recurrent events. This procedure does not require any unrealistic or non-confirmable assumptions, such as a parametric distribution or an identical distribution for all observations. The variances are obtained using a simple measure of dispersion that applies to any type of event with no specific assumption as to the distribution; this measure is shown to be the usual estimator when
the distribution is binomial, negative binomial, or normal.

4. Differences in current smoking status before and after the introduction of a ban, is not the main aim of your article. So, in Results, move the part regarding smoking status to the end of the Result.

This section has been moved to the end of the Results Section.

Minor Essential Revisions
Moving the Current Smoking status at the end of Results, Figure 2 becomes Figure

Figure 2 has been renamed Figure 4

2: I am not sure that the table 1 is important. In particular, you could erase the proportion of males, of influenza vaccination, and the Median Individual Income. If you want to leave these variables, add some comments in Result Section to justify their presence in the table 1. IO think that you could add, if possible, the proportion (or the absolute number) of the interviewed samples per area.

This Table has been extensively edited to reflect the recommendations of the reviewer. We are however, unable to provide the proportion or the absolute number of the interviewed sample per area as this information is not available.

Reviewer: francesco barone-adesi

The following are the major compulsory revisions:
The main weakness of the study is that it is based on the results of only two surveys. That makes it impossible to estimate the underlying time trends of change of smoking habit and exposure to passive smoking that were already in act before the introduction of the full bans. Decreasing trends in the exposure to passive smoking and the prevalence of smokers are reported in most of the industrialized countries, even before the implementation of smoking regulations. For these reasons the estimated impact of smoking regulations reported by the authors are likely to be overestimated. The authors should state this explicitly. If information (even incomplete) is available from the other years (for example 2001), it should be used to produce educated guesses on the magnitude of the underlying decreasing trend.

This has been explicitly stated in the discussion section.

Between 2003 and 2005 (the two years for which survey data were analyzed) only 3 municipalities (Sudbury, Durham, Thunder Bay) had major changes of the enforced smoking regulations. For other municipalities, it is difficult to disentangle late effects of the introduction of more restricting rules from the presence of
underlying temporal trends of exposure to passive smoking.

**This has been explicitly stated in the discussion section.**

The authors should put the results of their study in the context of the existing literature. A number of large studies have been conducted to investigate the impact of the introduction of smoking regulations on the prevalence of active smokers and passive smokers in different populations (see, for example, Galan 2007, Gallus 2006, Haw 2007, Patja 2008). What does the present study add to the existing literature on the effects of smoking regulations? A comparison between the results of the present study and those reported in different countries could increase the interest of the paper.

**Comparisons with the existing literature have been added.**

Cross sectional studies measure prevalence (which are proportions), not rates as the authors reported. The term rate should be changed in prevalence in the paper. More importantly, methods to estimate 95% confidence intervals for prevalence difference should be used, instead of methods for rate difference.

**The terminology was incorrectly identified as a rate but has been corrected to prevalence. Calculations in the paper are for prevalence estimates and the 95% confidence intervals.**

The five questions of the survey used for the present study should be reported in the text (by the way, this reviewer was not able to find the questions using the websites reported in the references. Please double check their correctness).

**An additional updated reference has been added**

Is the reported prevalence referring to the exposure to passive smoking happened in the last day, in the last week, or in the last month? Without this information it is very difficult for the reader to compare these results with those from other studies.

**The questions have been added to the text. If required, they can be added instead to an appendix as a separate document.**

Information on the dimension of the sample used in the survey should be provided.

**The sample size of the survey has been included in the methods section.**

The graphical quality of figure 2 is low. It is not possible to judge the contents of the graph properly.
The graph has been enlarged.

The graphical quality of figure 4 is low and it is difficult to judge it. Nevertheless, it seems there are some inconsistencies in the reported figures. For example, in the second row 2003 and 2005 “rates” are reported to be 57.8 and 50.1 respectively. However rate difference is reported to be -1.30. Similar problems are present in other rows. Please double check it.

The graph has been adjusted to increase the quality of the figure. The numbers are correct.

The following are minor essential revisions:
Results section, last paragraph: statistical significance of changes in the exposure to SHS in Thunder Bay and Halton should be assessed.

The significance of these changes has been reported.

Discussion section, second to last sentence: 20001 should be changed in 2001
Change made

Figure 2, legend: an operative definition of “public place” (labeled as 1 in the figure) should be provided. Do they include restaurants (labeled as 2)?

An operative definition has been included to further clarify the different ban types. Restaurants are considered a separate category from public places.