Reviewer's report

Title: Health impacts of exposure to second hand smoke (SHS) amongst a highly exposed workforce: survey of London casino workers

Version: 1 Date: 27 June 2007

Reviewer: giuseppe gorini

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

-- Selection bias

The most important problem in your work is the selection bias due to the low response rate (36%). You suggested that those who were suffering from ill-health associated to exposure to SHS were more likely to respond, but it would be better to add that these persons were mainly non-smokers. In fact, smoking prevalence is very low (22%) in respondents. It would be better to compare the smoking prevalence recorded in your survey with the smoking prevalence in UK in the last years, for men and women aged from 20 to 60 years. If available, you can compare the smoking rate recorded in your survey with that recorded in UK in similar occupational groups.

Moreover, smoking status is an important predictive variable in the logistic regression. In fact, if you disentangled your results according to the smoking status, you obtained:

Non smokers Smokers p-value

Sensory irritation symptoms
Eyes red or irritated 305 (70%) 65 (52%) <0.001
Runny nose, sneezing or nose irritation 341 (79%) 90 (72%) 0.123
Sore or scratchy throat 300 (69%) 68 (54%) 0.002

Respiratory irritation symptoms
Wheezing or whistling the chest 166 (38%) 47 (38%) 0.895
Short of breath 205 (47%) 55 (44%) 0.40
Usually cough first thing in the m.. 134 (31%) 60 (48%) <0.001
Cough at all during the rest.. 258 (59%) 80 (64%) 0.359
Bring up any phlegm 185 (43%) 61 (49%) 0.22

You can see that smoking respondents had a higher prevalence of 2 out of 3
sensory irritation symptoms and 1 out of 5 respiratory irritation symptoms. So, the selection bias due to the low response rates in smokers is very important. You have to add 2-3 sentences on this subject in the limitations of the study section within discussion.

-- Dose-Response Relationship

It would be better evaluate the dose-response relationship using the logistic regression, in order to adjust your estimates for confounding factors (smoking status; living with smokers; years worked in casinos; gender; age; qualification). You have to analyse the linear trend for the frequency and intensity of every item of sensory and respiratory irritation symptoms including the variable of intensity or frequency as a continuous variable in logistic regression models.

Table 2 has to be modified according to this analysis. You don’t need to report the ORs for all the confounding variables.

Examples for the variable "Red or irritated eye":

<table>
<thead>
<tr>
<th>Never/sometimes exposed</th>
<th>Often exposed</th>
<th>Nearly always exposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Adj.OR*(95%CI)</td>
<td>N Adj.OR*(95%CI)</td>
</tr>
<tr>
<td>9</td>
<td>1 § 28</td>
<td>1.23(0.67-2.39)</td>
</tr>
</tbody>
</table>

§ reference category
* adjusted for smoking status; living with smokers; years worked in casinos; gender; age; qualification

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Other European Countries: in the background you reported the situation for casino-workers in Australia, United States, and UK, missing completely to report the situation in other European countries, the first countries in the world to introduce smoke-free legislation also for casinos. In particular, it would be better if you discuss the situation in Ireland and Norway, where a total ban has been introduce since 2004 and 2005 respectively, but also in Italy, where the nation-wide smoking ban is also for casinos, even if it is possible to build a smoking areas.

Table 1: Remove, please, the last columns with total. It is sufficient you reported the total (N=559) in the title of the table. Moreover, regarding the missing data (=no response; around 5%), you suggested either a reticence to answer or uncertainty of having symptoms in the past four weeks. I would cut this sentence of comments, having the missing data rate(around 5%) acceptable and there is no need to suggest explanations.

Adjusting for presence of cold and other respiratory conditions: I prefer that you add that you did not adjust for presence of cold and other respiratory conditions in the section of limitations of your study.
Table 3:
-- Remove, please, the columns with p-value. You already reported 95% CI. It’s enough.
-- Explain in the footnotes of table 3 the acronyms of qualifications and the number of years of education they correspond, being peculiar of UK education system.

Table 4:
-- Explain in the footnotes of table 4 the acronyms for ns (non-smokers)

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.