Reviewer's report

**Title:** Implementation and Evaluation of Smoke-free Hospital Policies in Beijing

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**Reviewer:** Cristina Martínez

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The manuscript deals with an interesting issue asking whether a policy document to promote smoking bans in health care institutions in China (Beijing) leads to smoke-free compliance and increases doctors' knowledge and agreement with tobacco control policies.

So, to evaluate the impact of this policy document, seven hospitals in Beijing and about 2800 physicians were conveniently selected. Authors run different evaluation before and after the policy: surveyed the physicians; monitored the implementation of some written tobacco control policies; and monitored Second Hand Smoke (SHS) by using airborne nicotine levels in different settings among the participant hospitals.

The main conclusion is that this strategy has helped to improve the implementation of smoke-free hospitals. However, more efforts beyond the promotion of policy documents are needed. Although, these results are apparently right, there are many details about the results that are omitted, so it is difficult to have confidence in the conclusion.

However, the manuscript is well-written and has multiple strengths including: a multi-center pre-post evaluation in a country with high tobacco consumption prevalence and with loose legislation in tobacco control; a large sample of physicians; and the usage of objective measures for detecting SHS. However some considerations may help to improve this work.

Below, I detail my considerations and recommendations taking into account with ones need major and/or minor changes:

**Major Compulsory Revisions**

1) The paper may not be clear is the Chinese Association on Tobacco Control (CATC) is a National ban or only a document to promote the implementation of smoke-free policies in health care services. In addition, it does not mention if according to the Chinese legislation, or at lease with the Beijing one, smoking is forbidden in hospitals or is only a recommended policy to apply that depends on hospital internal policy. Authors could provide which is the current legislation in China to help the reader to understand the particularities of this area. In addition, has China ratified the FCTC? Has passed any new law since its ratification? These are some of the questions that readers may search in the paper but are not included.

2) The paper may not be clear describing the aim of the study. Instead of this,
authors explain the different methodologies that they have used. Potential readers would appreciate if authors pose the aim in a clear manner.

3) In the methods section, authors describe the training activities conducted in order to increase the implementation of tobacco control policies and the doctors’ awareness on this issue. However, they do not provide any information about how many sessions were conducted, how many doctors attended the sessions, how many hospitals were enrolled, what kind of content was included in the training, whether the training was based on an existent guideline or implementation model, and so on.

4) In addition, authors do not justify why only managers and physicians were included in the training and other members of the personnel were excluded (such as nurses, administrative, and so on). Moreover, we don’t know the percentage of personnel represented by each hospital. Authors mentioned that about 400 participants per hospital were enrolled, but we don’t know if they surveyed to all or only a percentage of the potential sample.

5) Moreover, it draws my attention the huge number of doctors and managements recruited in each hospital. Frequently, 50% of the hospital manpower is represented by nurses, and only between 10-15% by physicians. Therefore, more rationale about why was the criterion for selection of participants is necessary, and the total population of the hospitals should be provided.

6) In addition, please provide information about the method to reach the participants.

7) Regarding the questionnaire used, authors lack to inform whether they have used a validated instrument, or they have based on a previous questionnaire, or if they built an adhoc one for the purpose of this study. Previous studies have used questionnaires that explore similar aspects such as:

• Related to risks: Takano Y et.al (2001), Oncken C (2005)
• Related to smoking knowledge, attitudes, and practices (S-KAP) Instrument: Deluchi (2011)
• Related to consumption and compliance: Martinez (2008)

If the questionnaire used was created by the purpose of this study please inform if a pilot test was run and elements that could help to increase the internal validity of the instrument.

8) Regarding the policy guideline assessment, please inform if the 13 components included in the assessment come from a previous guideline such as the ENSH-Global Network for Health Care service or the Joint Commission on Hospital Accreditation (JACHO). As well, more information about the validity of the instrument would be necessary. Such as its creation, validation and pilot test.

9) In the results section, please present data about the knowledge of smoking-related diseases in a table. Authors don’t provide data about specific knowledge by tobacco-related disease or other harms related to tobacco products; instead, they have aggregated data and plotted in a bar graph. If you have not found any difference please inform about it. In addition, I suggest change figure 1 to a table with more complete information on it.
10) Regarding to attitudes, please inform about changes in the different attitudes explored such as role of physicians in tobacco control, smoking indoors, and so on. Aggregated data presented here distorts the results and do not allow to see the change on attitudes among physicians.

11) It is difficult to have confidence in the conclusion that the document CATC has increased the policies if we don’t know the baseline results. Authors mention that this data is on table 1, but the table does not provide data from the baseline point and only explain the post evaluation results.

12) Please review your reference, some are misplaced. Reference 21 was not conducted in China.

Minor Essential Revisions

13) In the results, please describe how many female and male doctors are smokers to compare with general population. As authors mentioned tobacco consumption in China seems to be a masculine behavior, so maybe we can see differences among the consumption pattern between female and male doctors.

14) Data presented about the compliance could be split among those hospitals that have adopted 100% indoor smoke-free policy and those that they have not. Please consider that smoker physician could have different behavior and compliance depending on the hospital policy.

15) In addition, it would nice to know the areas more and less developed in general among the 7 hospitals after the approval of the CATC policy document.

Discretionary Revisions

16) Regarding the relationship between nicotine level and policy score, I assume that this data has only been studied after the intervention. Authors do not mentioned changes before and after. Please if you have data include it and if you don’t have explain the reason you only provide data after the approval of the CATC, when in the paper you mentioned that you have done a pre-post evaluation of SHS.

17) In the discussion, both, readers familiar with the topic and not familiar, would benefit if you pointed out which kind of policies have shown better improvements in tobacco control so far in this sector in other parts of the world. Maybe the new policies and strategies that China needs has been un/successfully tested before elsewhere.

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.