Reviewer's report

Title: Smoking, heavy smoking and expenditure in low income Chinese: cross-sectional survey

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Reviewer: Xinguang Chen

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General:
This study report self-reported smoking data among a sample of 1958 urban workers and 3248 rural migrant workers from workunits in Hangzhou City that employ unskilled individuals and 1909 rural residents from two rural counties of Zhejiang Province. The purpose of the study is to provide data supporting tobacco control. Despite the fact that the reported data are very useful and highly needed (particularly for tobacco control in workplaces in urban), the comparisons of the three subpopulations are creative, and the assessment of expenditure on tobacco use is unique, several key issues need to be addressed before the paper can be considered for publication.

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

1. The study population has not been defined clearly. What does it mean by ‘low income Chinese’? Does the study target unskilled rural migrants, unskilled urban workers, or rural residents (most of them are farmers, could also be unskilled), or target one group and other groups are used as contrast population, or target all of the three groups? Why?
2. The purpose of the study has not been adequately justified. Without a complete review of published studies on smoking among rural migrants (e.g., Chen et al. Preventive Medicine, 2004), it is not possible to justify the need for such study. The findings from this study seemingly imply that smoking among unskilled workers in urban setting might be an important public health problem. If this is the case, authors should focus on this point to review related literature and to find the data gap. If the purpose is to target population with low income in China, the income of urban workers is much higher than that of the rural residents. How could we combine these three groups of people into one category of ‘low income Chinese’? In addition, when ‘low income’ becomes the focus, it is miss-leading. This is because SES is negatively associated with smoking, the theme ‘low income’ appears to imply that increasing income be a tobacco control strategy.
3. Although it is informative in general to contrast smoking of unskilled urban workers and unskilled rural migrants working in urban setting with rural residents, the purpose of such comparison is clear, particularly when the ultimate purpose of the study is to provide data for tobacco control. If tobacco control in general is the purpose, justification should be provided on each of the three subpopulations. Data presentation and discussion/conclusions should also be organized accordingly. If the focus of the study is unskilled workers in urban settings, the paper should be developed around this theme.
4. Description of sampling and data collection is not adequate. Readers do not know whether and how the selected urban district and rural counties of this study differ from other districts/counties in Zhejiang and from other urban and rural areas in China in general. Potential errors due to the sampling scheme should also be discussed. Some subjects completed the survey at workplaces while others completed the survey at home. Potential biases due to this different data collection protocol should also be addressed. The types of workunits should also be presented.
5. Description of the study variables is not adequate. Readers cannot tell what information was used in assessing the study variables, particularly smoking variables, such as ‘current smoking’, ‘heavy smoking’, ‘quitting’, etc. It is not clear if a person smoked one cigarette once in a month is treated the same as a person who smoked one cigarette but smokes every day. A list of the key questions used in the survey would be useful. A related question, how the questionnaire was developed? If any questions translated from English into Chinese are used? If yes, how the translation was handled?
6. The presentation of the data was not well organized. For example, data presented in Tables 2 and 3 mixed smoking behavior measures with other factors (e.g., occupation and expenditure). Age of smoking, onset, current use, intention to quit and actual quitting provides a very good profile of cigarette smoking while others should be presented separately. In addition, a combination of figure and tables would greatly increase the efficiency in presenting the data.
7. Citations are needed for many statement in the paper.
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

8. Other issues: A slightly more detailed description of the study site is needed so that readers can use the information from this study to help perceive smoking in China in general. “Hangzhou, the capital” on page 5 should be “Hangzhou, the Provincial Capital”; “women smokers” (page 7) should be either smoking women or female smokers; only few but not most analyses were conducted for females only (page 7). The term Hukou is used but no explanation is provided. How do the rural migrants who live in urban 5 to 10 differ from urban residents? Given the significant differences of the three subgroups of the study population, only the adjusted odds ratios are informative (Table 4 and the corresponding text). With such huge sample size, a small difference would be statistically significant. This should also be mentioned as a limitation. When interpreting the low smoking prevalence of this study (page 13), authors ignore the fact that Hangzhou is one of the urban areas in China with the strongest health education programs, not because the sample of this study is from low income population, which is against the existing knowledge of negative association between SES and smoking. The conclusion that rural migrants are at low risk of smoking may not be true because subjects included in the sample are rural migrants with a ‘formal’ job. However, there are a lot of rural migrants have no such job in urban area. There are numerous studies in this regard. Many other conclusions may also need to be revised after the previous questions have been addressed.

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 of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.