Reviewer's report

Title: Smoker's awareness and the effects of smoking or quitting on tuberculosis in a Chinese population

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Reviewer: Richard van Zyl-Smit

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Summary:
The authors present findings from a prospective cohort study in Taiwan examining the association of tuberculosis and tobacco smoking. The study comprises a database of almost 500,000 individuals. The primary results are that smokers reported less TB disease but the mortality in TB patients was higher in smokers. Although there are several interesting results presented there several major issues that significantly weaken the impact of this manuscript. The language is poor and not of publication standard. The major findings do not appear to be supported by the data presented.

Major Compulsory revisions

1) The authors all appear to be of Taiwanese origin although two have affiliations in the USA. The quality of the English is not of publication standard and there are numerous grammatical and comprehension errors. The authors would do well to include an English first language speaker with publication experience to re write the manuscript as there are excessive grammar and language errors.

2) There is an enormous and excessive amount of data presented in both text and tables. The tables are poorly laid out and several analyses are performed using less than 5 subjects (in a 500,000 patient study). Tables 1,2,3 require extensive revision and simplification.

3) TB “awareness” is frequently used. This term is confusing and undefined in the manuscript. History of TB is the issue at hand and once defined as “self reported” TB history should be used not “awareness” which has several other connotations. This is especially true when: smokers have less “awareness” of TB history suggesting that they somehow forgot or did not know because they smoked?

4) The major finding was that smoking was not associated with TB disease but was associated with dying from TB. The authors then calculate that 44% of TB was associated with smoking. It is unclear if TB history and TB death were combined to calculate TB incidence in the cohort? I am uncertain how if TB and smoking are not associated that 44% TB can be attributed to smoking?

5) Abstract
Results section

Line 4 “… were translated into nearly half (44.6%) of Tb being attributable …. “
In this study smoking was associated with TB death but Tb was “25% less” Tb history. If TB and smoking were not associated then is does not seem possible to attribute risk to smoking for TB?

6) Introduction:
There are numerous grammatical and language errors (throughout the manuscript) that should be re written (I strongly recommend asking a first language English speaker to read and correct the manuscript) there are too many to individually indicate but examples are:

“Significance was interpreted with less enthusiasm” : colloquial
“took on an unnoticed importance” poor language

7) Methods
The use of the term “awareness” should be avoided unless awareness is specifically meant i.e. a•ware ness n. Synonyms: aware, cognizant, conscious, sensible, awake, alert, watchful, vigilant These adjectives mean mindful or heedful: Aware implies knowledge gained through one’s own perceptions or by means of information [free dictionary ref]

It would be more logical to define TB history as self reported… i.e. the elderly reported more TB (which is logical as the chances of having TB over a life time is higher). “Smoker were less aware of TB history” this sentence implies that somehow smokers had TB but did not know about it – this does not make biological sense.

It is unclear if both TB death and TB history are combined to calculate TB incidence? It is important to make this point very clear, as those that died from TB would not necessarily provide a “history of TB” but clearly had TB- but only recorded in the death registry.

Statistics - appear to be correctly performed

8) Results
The results are presented in a exhaustive manner - It would be better to combine several outcomes together i.e. all smoking related, then associated diseases etc.

Some of the variables are reported in a manner that is illogical. i.e. BMI it is well know that malnourishment is a risk for TB therefore reporting high BMI first is illogical unless associated with diabetes…

Several associations are reported where the “n” is very small i.e. 2 these are frequently “not significant” and detract from the data that is. In other words report on the significant results and relevant negative ones only.
The tables are overly inclusive of data and should be revised and significantly pared down of unnecessary data. The layouts are also confusing with HR$, HR3 etc…

9) Discussion

The discussion is over 6 pages and should shortened.

The discussion on the “lack of association” between TB and smoking is poor – lack of awareness of TB or “being less vigilant” is a weak explanation for the finding. The authors are suggesting that if you smoke, you might get TB but don’t know about it or seek help. Again is would be important to note if all TB i.e. history and death without previous history are included in the incidence numbers.

The term “inverse dose response” relationship cannot be attributed to BMI as there is no “dose” – the term inverse relationship between BMI and TB history would be better used.

The final paragraph discusses the limitations of the study and then ends. It would be advisable to provide a summary conclusion at the end of the manuscript.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**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'