Reviewer's report

**Title:** Prevalence of cardiovascular disease and risk factors among rural Chinese in Beijing: a population-based survey of 58,308 residents

**Version:** 1  **Date:** 1 October 2011

**Reviewer:** Perviz Asaria

**Reviewer's report:**

Major Compulsory Revisions:

1. My major concern about this cross sectional study centres on the definition and collection of IHD and stroke prevalence data. This has not been clearly explained in the paper. My concerns are:

   a. Were possible ‘cases’ of IHD or stroke identified from the structured questionnaire or in other ways. I.e. were medical records/case histories only reviewed if the patient happened to mention that they had a stroke/IHD event, or were they reviewed for every single participant in the survey? Could it be that person who forgot that they had had a CVD event and did not mention this during questioning did not have their notes reviewed?

   b. Was the case history of every participant reviewed by a neurologist and a cardiologist or were only selected cases reviewed?

   c. What were the criteria used to define a case of IHD or stroke?

   d. What quality control measures were employed to ensure that these criteria were adhered to?

   e. What quality control measures were instituted to ensure that every possible prevalent case of IHD or stroke was identified?

   f. How was prevalence defined? Was it any participant who had ever had an event at any point in time?

2. The structured questionnaire should be available for review.

3. Secondly the wording is not always entirely clear as to whether the prevalence odds ratios are attempting to quantify the prevalence of CVD in diabetic/hypertensive/obese patients compared to those without diabetes/hypertension/obesity or whether they are trying to quantify the prevalence of diabetes in those with CVD. The two are different.

4. If the CVD prevalence data have not been systematically and rigorously collected then sections referring to CVD prevalence and prevalence odds ratios should be dropped.

5. Table1/Table2: The results of surveys like this one are often used for secondary analysis, national/international comparisons, or temporal comparisons. The main value of the current study is the primary risk factor data
which have been collected on a large sample size. It would therefore be useful to have the following variables broken down by 5 year age group and sex (i.e. age and sex specific) in the results table or as a webappendix: Sample size, SBP, DBP, Weight, BMI.

6. Title: wording misleading to the non-Chinese – implies that this is a survey of rural migrants who have moved to Beijing. Suggest: “Prevalence of cardiovascular disease and risk factors in a rural district of Beijing, China: a population based survey of 58,308 residents”

7. Background Para 1: Where is the evidence for sentence 1? Mortality from CVD is increasing (see Global Burden of Disease). We do not have good global data for prevalence of CVD. Secondly risk factor distributions are increasing in some places and decreasing in others – please see: Dannei (glucose), Farzadfar (cholesterol), Finucaine (BMI), and Dannei(BP) in Lancet 2011 for references.

8. Methods, Para 6 Statistical analysis: Unclear how confidence intervals were calculated.

9. Results Para 5: needs to be written more clearly. The confidence intervals for diabetes association with CHD and with stroke overlap – therefore not really valid to say that diabetes has stronger association with CHD than with stroke from this study, similarly with hypertension. Suggest:

“The prevalence of diabetes, obesity and hypertension in participants with CHD/stroke

is shown in Table 3. Prevalence of CHD in persons with diabetes was (POR=2.51, 95% CI, 2.29–2.75; P<0.001) compared to those without and in persons with stroke was (POR=2.24, 95% CI, 1.98–2.52; P<0.001) compared to those without. The same trends of increased risk for CHD and stroke were also present in those with overweight/obesity and in persons with hypertension (P<0.01).”

10. Discussion Para 3: Not appropriate to compare the pattern of CHD:stroke in incidence study directly to that found in a prevalence study. The paragraph itself says that mortality from stroke is double that of CHD (this will undoubtedly affect prevalence). The wording of this paragraph and its concluding sentence need to be revised.

11. Discussion Para 5: is there any evidence for the explanations proposed? There are no references given here.

12. Discussion Para 6: To make comprehensible international comparisons of prevalence rates, the rates would need to be standardised to a single population, or age specific rates need to be reported. The alternative would be to report absolute numbers (i.e. the actual burden) or to state that the figures reported are country prevalence rates not standardised for international comparison.
Minor Revisions:

1. Methods, Para 6 Statistical Analysis: It looks like the prevalence data have been directly standardised to the 2000 5th China Population Census and this should be explicitly mentioned. The current wording is confusing.

2. Methods, Para 6 Statistical analysis and Table 3: I think separate Prevalence Odds Ratios have been reported for each of diabetes, hypertension and obesity. Can the authors confirm this? Once again the wording is confusing. Something along the lines of “prevalence of CHD and Stroke amongst those with diabetes, hypertension and obesity compared to those without are reported after adjustment for age and sex, using logistic regression.”

3. Results Para 3 and Figure 2: Were data from the current study, from the 2007-2008 China National Diabetes Study and from the 2001 InterASIA study all directly standardised to the 2005 China population to allow comparison? If so please state this clearly.

Language and spelling:

4. Abstract Para 2 and 3 need to be carefully re-worded in light of above comments.

5. Data collection sentence 2 should be “using a structured questionnaire”.

6. Data collection: remove “with antidiabetes medication” and just say “with insulin or oral hypoglycaemic agents”

7. Data collection – was an average of the three BP measurements used? How long was the rest period between measurements?

8. Criteria for data interpretation: “(BMI) was calculated as the ratio of weight to height squared”

9. Results: “participants were classified into 10 year age bands”

10. Results para 2: English needs adjusting

11. Discussion para 2: “in spite” not “in spide”

12. Discussion para 6: “Korea” not “Korean”

13. Discussion para 6: could be worded more politely eg. “World population is aging and this has already made a considerable impact on the CVD burden in developed countries in recent decades. It is reasonable to suppose, that as the age structure of the Chinese population increases, the CVD burden in China will be aggravated.”

14. Discussion para 8: “cardiologists and neurologists were joined to confirm the diagnosis”? Does not make sense.

15. Table 2 appears to show age and sex specific rates except for the top and bottom lines – the heading therefore needs to be reworded.

16. Figure 3a legend: need “h” on hypertension

Discretionary Revisions:
1. Discussion: A comment on why twice as many women as men participated would be helpful. Were the same number of men and women invited?
2. Discussion: Age in the elderly – how easy was it to ascertain in the over 85s?

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

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

**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.