Reviewer's report

Title: Risk factors for non-communicable disease and healthcare expenditure in employees with private health insurance presenting for health risk appraisal: A cross-sectional study

Version: 2 Date: 19 October 2013

Reviewer: Roy William Mayega

Reviewer's report:

General comment
The article touches on a public health issue that is increasingly growing in sub-Saharan Africa. The issue is explored in an important sub-population – employed persons – the implications of having an NCD on their employment status and their families are potentially far reaching. The findings also have implications for risk pools that involve such types of employees,

Major revisions

Methods
1. The methods section implies that the ‘annual wellness days’ are conducted annually. For participants who participated, it is important to know whether the data used refers to the most recent participation; aren’t there some who participated multiple times? If so, which occasion was used?
2. Interesting why height was measured to ‘0.1’ cm
3. It is important to note in the methods that these data were extracted from records (i.e. secondary data), and that the different ‘wellness testing sites’ follow similar standard procedures; it would be also important to know about the integrity of the dataset – whether everyone for instance had all the parameters required in their medical record of the study selected only those with complete records
4. Unless is was ANOVA for a linear regression, ANOVA for categorical variables is often used where there are more than 2 comparison groups; with 2 independent samples (numerical data) we use the t-test for data that fits the assumptions.
5. A statement of ethical approval needed

Results
6. Under characteristics of participants: The statement that ‘men and women were of similar age’; maybe you meant the different between means is not statistically significant
7. The second statement is also erroneous ‘placing them in the overweight category’ when you are referring to the mean; instead refer to the ‘mean’ not ‘them’ because many of them are not
8. Under ‘Health Expenditure’ it brings unnecessary confusion if you say those who met the guidelines were classified as ‘not at risk’ – why not simply refer to them as they are ‘met the guidelines’

9. The multiple regression model you refer to in this sub-section and therefore the r-square – is it a multiple linear regression model or a logistic regression model. The way it is stated, it is difficult to know what you are comparing with what

10. Provide statistical evidence for the following assertions where possible:
    o Para2, sentence 1 (under the subtitle wellness participants vs non-participants)
    o Under participant characteristics: for the difference between age of women and men
    o Under health care expenditure: Para 3, the statement on employees with more than 2 risk factors having more visits to facilities

11. Affirming what was noted in the methods, no where do we see ANOVA results (except for where you quote an r-square and even this is not clear

Minor essential revisions

Introduction
The introduction is sufficiently informative. There are minor language issues though

12. Paragraph 1, line 5: It is better to use ‘low physical activity’ or ‘insufficient physical activity’, or ‘sedentariness’ instead of inactivity

13. Paragraph 3, second last line ‘individuals ‘who’ choose’...

14. Last paragraph, sentence 2 is not complete the way it is written. Some key words in the object are missing

Tables
15. Table 1: Instead of ‘participants’ vs. ‘non-participants’ can you use a phrase that is more clear e.g. ‘participated in wellness clinic’ vs. Did not

16. Table 3: What do the figures in the table refer to? Are they frequencies?

Discussions
17. Conclusions are not well stated – the study has very important findings but these are not well summarised e.g. majority of employees having more than 2 risk factors, majority of employees not reaching desired physical activity threshold and comparison of those who participated with those who did not. Also do not talk about odds in the conclusions – simply state excess risk in ordinary terms

Level of interest: An article of importance in its field

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