Reviewer's report

Title: Cardiovascular disease risk factors and ventilatory function: A cross-sectional study in young adults

Version: 3  Date: 22 September 2014

Reviewer: Stig Hagstad

Reviewer's report:

The authors have presented a paper on the relationship between lung function and cardiovascular risk factors in young subjects. While the subject is of interest and worthy of further studies, there are several points that need to be amended.

Major Compulsory Revisions:

1) There are numerous factual errors related to the numerical analyses in the manuscript that must be corrected.
   For example: p2, row 38 "...FVC bLLN 7%..". 7% is among males only and should read 4.7%.

2) Page 8, row 175: "As expected, men had higher lung function than women". Clearly incorrect. I presume the authors mean that men had larger lung volumes as compared to women. In continuation on row 175: "Over 7% of men had lung obstruction as indicated by FVC bLLN". First, the term is airway obstruction. Second, using FVC alone is not a correct manner of establishing airway obstruction.

3) Page 8, row 181-183: "a consistent trend for a lower FVC with higher tertiles of LDL and TGs in men only". However, among the whole sample association between FVC and LDL was statistically significant, p=0.03.

4) Page 8, row 185-186: "...elevated levels of HOMA-IR had lower levels of FEV1 and FVC levels in the whole sample, as well as per gender (the association being weaker in females). The association between HOMA-IR and FEV1 in women is not statistically significant (p=0.43), which should be clearly stated. Subsequently the same conclusion should be drawn from the association between metabolic syndrome and FEV1 in females, where the association was not, as stated, weaker but not statistically significant.

5) Page 11, row 261. "7% of the population....more marked in men than in women". Se comment 2. (32+14)/970= 4.7. The authors must be certain that their calculations are correct and are advised to redo them.

Minor revisions:

1) General comment: when presenting prevalence data, please give one decimal instead of rounding up/down. E.g. p2 row 38: "...prevalence of MS was 12%", should read 11.8%. This error can be found throughout the manuscript and must be corrected.
2) p2, row 31: "...a sample 998 adults...". Should read "a sample of 998 adults".

3) p8, row 173 "over two thirds of males and half of women". For men, prevalence of current smokers was 66.0%, i.e. almost two thirds. For women, 266/541 = 49.2 (not as stated in table 1 48.6%), i.e almost half. Please see major revision comment 5.

4) p8, row 178 "Nearly a third...". Should read "More than a third..."

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\frac{(153+182)}{970} = 0.345
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5) p10, row 221: "...fourth cause of death...". According to the reference used, COPD is now (2010) the third cause of Death globally. Please correct the text accordingly.

Discretionary Revisions:
1) p 4, row 87: "not included in the study because of Death (3.2%)". As the study population consists of comparatively young subjects, this is surprisingly high. The authors should comment on this.

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