Reviewer's report

Title: Long-term follow-up in European respiratory health studies - patterns and implications

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Reviewer: Linnea Hedman

Reviewer's report:


In this paper, data from three large prospective population-based studies were used to study consequences of loss to follow-up. Baseline data among those participating only at baseline was compared to baseline data among those also participating at 10 and 20 year follow-up studies. The paper is well written and the research question is interesting and relevant. However, there are some concerns:

Minor essential revisions:
1. The submitted paper lack page numbers.
2. Throughout the paper, the phrase “compared with” has been used. However, in some cases it is more correct to say “compared to”. Please make the appropriate changes in the manuscript.

Discretionary Revisions:

Introduction
3. The aim includes a description of the method (“to quantify bias in 10 prevalence estimates” and “we analyzed data from (…)”). This information is redundant in the aim which should focus on the objective of the study.

Method
4. Understanding of the study design could be facilitated by a flow chart.

Result and Discussion
5. The sections entitled “Baseline prevalence of respiratory symptoms” and “Associations of age and sex…” could be considerably shortened. Presenting only the most important results from each table in fewer sentences would facilitate the reading.

6. The study showed that the prevalence of respiratory symptoms was underestimated among the longterm participants. One aspect that could explain part of the result is a selection bias caused by the healthy survivor effect. This should be included in the discussion.

7. In several places in the Discussion (as well as in the abstract), the authors state that the exposure-outcome associations were mainly unaffected by loss to
follow-up. However, a more appropriate term would be “unchanged”. The prevalence of respiratory symptoms was higher (and the prevalence of smokers was probably also higher) among those lost to follow-up and if they would have been participated in the follow-up surveys, the exposure-outcome associations would probably have yielded different results. This aspect should be included in the discussion.

8. In the Discussion, under the headline Characteristics and bias..., fifth paragraph, last sentence, the authors state that the results from the present study should be taken into account in future prevalence reports from RHINE, I-ECRHS and ISAYA. Please give an example of how it should be taken into account (in analyses?) and in what way the prevalence should be interpreted differently.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have no conflicts of interest.