Reviewer’s report

Title: Do people with risky behaviours participate in biomedical cohort studies?

Version: Date: 14 September 2005

Reviewer: Richard Holubkov

Reviewer’s report:

General

I like the topic of this report, as a clinical trialist who is continually concerned about generalizability of trial results. My major questions I had, after reading this paper, were the specific utilities and limitations of your analysis - please see below.

-------------------------------------------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Stat Methods (p. 8). Did you use versions of the chi-squared test (e.g. Mantel-Haenszel) that take ordering of categories into account for multivariate categorical ordered variables such as age group in Table 1? As a trials analyst, I am used to a single p-value summarizing differences between groups, for example, Age Group in Table 1 again. Yet here, you show 3 significantly different age groups - how was such a level-by-level analysis performed, and is it truly valid? In Table 2, you do seem to provide such a "global" p-value, but then again have category-level comparisons. Finally, in Table 3 your footnote indicates you use adjusted standardized residuals in this level-wise comparison. Is this the case for all tables? And would you please reference, or clarify, this approach in the Stat Methods Section?

Now, let's look at the flip-side of p-values. You sometimes have very high numbers of observations, wherein differences in proportions of small magnitude may be statistically significant but "similar for practical purposes." Could this be the case for the highest age category in Table 1? The 3rd vs. 4th quintile variation in Table 2?

How were the variables in Tables 1 and 2 chosen? Are these the major ones available for comparison?

The Table 3 comparison compares characteristics of respondents in a study with 49.6% response rate to those in a study with 68.7% response rate, if I interpret pp. 6-7 correctly. Is the fact that you are comparing only responders a weakness in this Table? Why in Table 4 does the number of subjects with BMI, blood pressure, and cholesterol available drop by more than half? (I am also not sure about the South Australian Health Monitor physical activity data - is this a subset of the same population?) Can the remainder be considered representative of the entire study? Of the population of interest? Can we really conclude these limited data give accurate insights about "the community [the participants] represent: (from p. 10, second paragraph).

Perhaps my strongest potential criticism would be as follows: you make the case, for example, that since the available self-reported blood pressure data (on less than half of 4060 NWAHCS participants, who in turn are 49.6% of those selected) are very similar to that reported by about half of the SAMSS participants, one may conclude that (paraphrasing your abstract conclusions) people with risky behaviour as evidenced by high blood pressure participated in the NWACHS study as
much as people without? In my judgment, such a conclusion is a bit too strong based on your available data and analysis! At the least, you should make a stronger and detailed case for this conclusion in your Conclusions section of the manuscript.

---

**Minor Essential Revisions** (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

---

**Discretionary Revisions** (which the author can choose to ignore)

Is there any information available from the interviewed subjects unwilling to participate (p. 11, bottom)? This might be most informative as an indicator of potential biases.

Any insights/references on how Australian experiences/bias types/attitudes leading to respondent bias might be unique, and/or generalizable to other regions? For example, in the U.S., cultures such as selected Native Americans are very hesitant to participate in studies involving specimen collection due to spiritual beliefs.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare I have no competing interests.