Reviewer's report

Title: Assessing cardiovascular risk in regional areas: The Healthy Hearts - Beyond City Limits program

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Reviewer: Aage Tverdal

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The aim of the study was “to determine CVD risk factor levels and the potential value of national risk clinics” (abstract). However, the focus was more on sex differences and age differences than in regional differences.

Major

A main weakness of the study is the self-selection of participants. No attempt has been made to assess to what degree the participants represented a random sample from the communities. I assume that it is possible to compare the age, sex, marital, educational and occupational distribution of the participants with that of the total population in the selected communities. The authors touch upon this limitation and suggest that the self-selection introduces a bias towards those with higher levels of risk (last paragraph page 12). This presumption is not consistent with the low smoking prevalence of 11% among the participants, which may be compared with figures from The National Health Survey, Victoria, 2007-2008 which showed that for men aged 15+ 21% were current smokers and 17% of the women. These figures are also in contrast with the summary in the article which reads “the Healthy Hearts program confirmed a high proportion of individuals with elevated CVD-related risk factors….“.

Minor

The definition of elevated cholesterol level is not clear. It is referred to a target level of < 4 mmol/L for higher risk participants taking lipid-modifying drugs and a target level of 5.5 mmol/L for all other participants not on lipid-modifying treatment. Are these the limits defining elevated total cholesterol? How many participants were higher risk taking lipid-modifying drugs? A similar question applies to hypertension where two limits are mentioned. How many had hypertension with associated conditions or end organ damage?

Target levels for triglycerides are described, but information on triglycerides is not reported. Triglyceride levels enter into the definition of metabolic syndrome, but information on the prevalence of this syndrome is not given.

Students t-tests were used for normally distributed continuous variables. Was the normality assumption assessed? Was alcohol consumption normally distributed?
Was the huge difference in standard deviation accounted for when testing for equality in consumption between men and women?

On page 10, line 4, it is stated that women were more likely to be obese than men. In table 1 the mean value of body mass index is higher in men than in women. On the other hand the standard deviation is higher in women than in men thus giving a higher proportion of obese women. This should be commented.

Many sentences are obscure. Examples: “Across all communities there were similarities between men and women in their age distribution,….”. (page 9, line 15). “High levels of risk and engagement in these communities….”. (Page 11, upper). “Despite highly prevalent CVD risk factors, absolute CVD risk scores were not congruent, …”. (Page 11, lower).

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**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.