Reviewer’s report

Title: Cardiovascular Risk Factors and 30-Year Cardiovascular Risk in Homeless Adults with Mental Illness

Version: 2
Date: 24 October 2014

Reviewer: Charlotte Jones

Reviewer’s report:

1. General comments:
CVD risks factors were assessed in 352 homeless individuals with mental illness in Toronto, Canada, at the time of their enrollment in the At Home/Chez Soi Project, a randomized trial of a Housing First intervention. The 30-year risk for CVD was calculated using the BMI-based Framingham CVD risk assessment. They determined the association between risk and the need for mental health services, diagnosis of psychotic disorder, sex, ethnicity, access to a family physician and diagnosis of substance dependence. They found that when compared with a normalized version of the participants’ own risk score, the homeless people with mental illness have highly elevated 30-year CVD risk, particularly among males and those with substance dependence.

This is a well-written manuscript that addresses an important aspect of homelessness, mental illness and CVD risk. In the absence of long-term cohort date, the use of the 30-year CVD risk calculation makes sense in this rather young group given that the 10-year Framingham is likely to underestimate CVD risk. Given that the ideal comparison with homeless individuals without mental illness would be a near impossible task, using a “normalized” value for each individual seems a reasonable substitute.

2. Minor essential revisions:
There are only a few minor revisions needed that will enhance this manuscript.

Page 5: the authors should clarify that the AT Home/Chez Soi project is a Housing First initiative for those homeless specifically with mental illness (rather than all homeless individuals). This is not clear in the introduction.

Page 16 line 326: the normal should read reference “normal” or “normal”

Page 7: Exclusion criteria: lack of Legal residence status in Canada = qualify for Government income assistance: were any of the 352 not getting it at the time of data collection? If not, how many and could that impact any of the key variables?

134 excluded because they lacked complete data: since this group represents almost 25% of the original 575 participants that completed baseline interviews, it is important to determine if there is anything about this group and its exclusion that might skew or bias the results of this study.
The timeframe of recruitment and baseline measures collection should be indicated.

Results:
What was the age difference between males and females? As age plays a major role in CVD risk assessment and is of interest to the readers.

Data presentation:
Results: for table 2. While not practical to be included in the table (due to the size of the table), the authors should present (in the results section) and discuss the findings for the confidence intervals of the difference in the means of the key variables that were found to be significantly different using P values e.g. on pages 14 and 15: “Compared to participants with moderate needs for mental health services, high needs participants had larger waist-to-hip ratios (0.94 vs. 0.92, P=0.039), greater alcohol use (56.0% vs. 44.0%, P=0.038), and lower perceived stress (19.8 vs. 22.8, P=0.004). Compared to individuals with a diagnosis of psychosis, those 296 without this diagnosis had higher alcohol use (52.3% vs. 40.3, P=0.029) and higher perceived stress scores (23.7 vs. 18.9, P<0.001).”

Figure 1: Are the error bars that of standard deviation or standard error of the mean?

Figure 2: label: what colors rep the risk levels: black = high risk, grey mod and white low?

3. Discretionary Revisions:
I think the message would be much stronger if the two methods (the 10 year and 30 year BMI-based risk assessments) were compared within individuals. Do the same interactions between sex and substance abuse arise when the 10 Y BMI-based risk is assessed? Or are they just weaker and non-significant? Rather than “weight” the manuscript down by adding another complex table, a simple comment might be made with the results of this assessment. I think it would help to demonstrate the point that the standard 10 year risk assessment does underestimate the risk (as these authors have shown in a different homeless population in their 2005 article which used the lab measure-based 10 year risk for CHD not total CVD) and to emphasize the fact that risk calculation by standard methods does not include the major risks for mortality in this population: being male and living with substance abuse and therefore may be misleading along with what the authors discuss: “provides a longer time-frame during which the effect of modifiable CVD risk factors could be mitigated”.

Level of interest: An article of outstanding merit and interest in its field.

Quality of written English: Acceptable.

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.