Reviewer's report

Title: Associations between psychological stress, eating, physical activity, sedentary behaviours and body weight among women: a longitudinal study

Version: 2 Date: 19 April 2013

Reviewer: Janis Baird

Reviewer's report:

Thank you for asking me to review this manuscript, which I read with interest. The paper describes the relationship of psychological stress with body weight and weight-related behaviours (diet, physical activity and sedentary behaviour) in 1382 women recruited from disadvantaged communities in Victoria, Australia who were participants in the READI study.

The study advances our understanding of the relationship between psychological stress and overweight and obesity in disadvantaged women. Most previous studies exploring the relationship between stress and body weight have not assessed the role of health-related behaviours. In this study, the authors found that higher stress was significantly associated with overweight and obesity, and with lower levels of physical activity, greater sedentary behaviour and more frequent fast food consumption.

These findings are important in public health terms particularly with the study’s focus on women from disadvantaged background who we know have higher prevalence of obesity than more advantaged groups, and given the clustering of unhealthy behaviours in disadvantaged groups as demonstrated in recent review by the King’s Fund.

The study has a number of strengths: it is based on a large sample of 1382 women randomly sampled from disadvantaged communities and analyses are based on longitudinal data over a three year period and are adjusted for important confounding factors. The methods are appropriate and well described. Statistical methods are appropriate. The study is not without its weaknesses, however, and the sample of 1382 women represent 28% of the READI baseline study population, thus limiting the external validity of findings. The other main weakness is that the primary outcome, body mass index, is based on self reported height and weight, and so the prevalence of overweight and obesity are likely to have been underestimated.

The manuscript is well written and structured. I would suggest some discretionary revisions and one or two minor essential revisions:

Discretionary revisions

The results section of the abstract does not describe the association between stress and television viewing time clearly. The direction of association is not stated.

While analyses are adjusted for important confounding factors (age, education,
marital status, smoking, number of children and country of birth) it would be interesting to know what the effect of employment status on the associations of interest given.

Interpretation of findings focuses on the possible influence of stress in predicting diet, physical activity and sedentary behaviour. This is entirely justified but I wonder whether the authors have considered reverse causation. Given what is known about the benefit of diet and physical activity for wellbeing, I wondered whether lack of physical activity and poor diet might predict stress.

Height and weight are self reported and this may have led to an underestimate of prevalence of overweight and obesity. What effect might this have had on study findings?

Minor essential revisions
I was not entirely clear of the justification for the indicators of dietary intake and wonder whether there are references to support the approach taken. References 40-42 appear to relate to the FFQ used, but is not clear whether these references also relate to the choice of variables.

Page 12, second paragraph, first sentence should read ‘Evidence of the associations....’

Table 1, row headings – replace ‘M’ with Mean.

Authors’ contributions – should read ‘GA and KB assisted JM in performing statistical analysis...’


**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests