Reviewer's report

Title: Television viewing, computer use, and mortality among adults in the United States: a prospective study

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Reviewer: David W Dunstan

Reviewer's report:

This manuscript describes the findings from a study that examined the associations between self-reported screen time (television viewing and computer use) and mortality in a large cohort of American participants in the NHANES 1999-2000 and 2001-2002 cycles. Several studies have now shown prospective relationships between self-reported sedentary behaviours and mortality in adults; a recent meta-analysis published in JAMA has described this relationship in detail based on findings from > 6 studies. Within the introduction the author provides a description of these studies, including the meta-analysis, and provides the rationale that there is limited data available in a representative USA sample – it is difficult to appreciate the extent to which this is a novel contribution solely on this basis. Additional rationale is provided on the grounds of combining television watching and computer use – however, this has also been recently reported on in a large UK cohort (Stamatakis 2011). While it is important to confirm or refute such observations, an important limitation (as duly highlighted by the author) is the unknown measurement properties (validity/reliability) of the question used in the NHANES study. Furthermore, another downfall of this question is that the influence of TV viewing or computer use cannot be assessed separately.

Overall, this is a very well written manuscript and has potential to provide an important contribution to the literature. However, there are elements of the manuscript that the author should provide additional attention to improve the scientific clarity and readability

Major compulsory revision:

A key distinction between the previous studies that have reported significant associations with TV and mortality and the current study is the number of categories of the exposure that have been used in the analysis. The current study has used 6 categories – based on the item responses within the question. Other prospective studies have used fewer categories to great effect. The utilisation of 6 categories invariably influences the cell sizes for recorded deaths, with only 56 deaths observed in the reference category <1 hr. For CVD, very low numbers of deaths are recorded across all of the categories. The author should consider whether greater statistical power could be obtained from the collapsing of categories.

Minor essential revisions
2. Methods: Please provide some information on the level of accuracy of the National Death Index with respect to data linkage.

3. Methods: Line 124: Please provide information on the validity and reliability of the questions used to ascertain physical activity status.

4. Methods: It appears that history of CVD was based on self-report – was a verification process applied to this data?

5. Methods: Did the author perform an analysis to explicitly assess the sex interaction? If there was a significant interaction, should the results be presented separately for males and females?

6. Discussion: Page 11: The author should acknowledge that the Scottish Health Survey included both TV viewing and computer as their exposure variable.

7. Discussion: the author needs to acknowledge the possibility that other unmeasured or unknown confounding factors may have played a role in the findings.

Level of interest: An article of importance 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.