Reviewer’s report

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

Version: 1 Date: 10 October 2011

Reviewer: Katrien Wijndaele

Reviewer’s report:

This manuscript examines whether screen time (watching TV or videos and using a computer outside of work) independently predicts all-cause and cardiovascular mortality in a population-based sample of US adults (aged >= 20 years; NHANES). This is a topical research question with a potentially large population health impact, given the high prevalence of excessive TV viewing time in the US, and many other countries. The manuscript has several strengths, including the population-based sample of US adults aged 20 years and older, consideration of a wide range of potential confounding variables, and the inclusion of several objectively measured potential mediators. A limitation of the current study is the lack of knowledge on the reliability and validity of the self-report single question exposure measure, which might have resulted in misclassification, and therefore underestimation of the true hazard ratios.

I have the following comments/suggestions:

Major compulsory revisions:

1) Methods, sample description: please include in text the numbers and response rates at the different stages of both the home interview and the physical examination. Please comment in the discussion section of the manuscript on the external validity of the results found.

2) A somewhat limited number of cases in some of the 6 different screen time categories might partially explain the less stable risk estimates across conditions. Having higher numbers would also enable to put stronger emphasis on the analyses in which participants are excluded based on prevalent CVD, cancer and diabetes at baseline. Would there have been a possibility to include another NHANES cycle (2002-2003) to increase numbers and statistical power of the analyses? Or would this not result in a substantial increase in number of cases, given the relatively young average age, and the limited follow up time between 2002-2003 and 31st Dec 2006? Another option would have been to collapse the 6 screen time categories into 3 categories instead, although this strategy would partially reduce the information gained from this study.

3) Discussion: 7th Paragraph: this paragraph describes results of previous studies examining the association between total sitting time and mortality in large detail. This is in addition to the previous 5 paragraphs which describe in detail the results of previous studies specifically examining the association between TV
viewing/screen time and mortality. Please abbreviate this 7th paragraph, as this is too detailed, especially as the exposure of the studies described in this paragraph still differs from the exposure in the present study (TV viewing/screen time might be associated with mortality via additional pathways (e.g. dietary intake through exposure to advertisement etc), compared to sitting per se).

4) Please discuss in the discussion section of the manuscript the main strengths and limitations of the current study.

5) Discussion, page 14, line 5: besides non-discrimination between TV and computer use, the single question on screen time also did not ask to report separately between week- and weekend days (and these behaviours might differ substantially between week- and weekend days), which might be another potential cause for misclassification for the exposure variable. Please comment on this in this section of the discussion.

Minor essential revisions:

1) Background, last paragraph, page 4: please change into “... spent watching television or videos and using computers outside work in a population-based sample of adults in the United States.”

2) Methods, 2nd paragraph: please briefly include the level of completeness with which vital status is ascertained in NHANES participants by means of the National Death Index, is this 100%?

3) Methods, 4th paragraph, line 12: please include “in leisure time” after the phrase “moderate and vigorous physical activity”

4) Methods, page 7, line 2: please include “independents samples” t-test

5) Results, 1st paragraph, 2nd line: why were they ineligible for follow up, please include the reason in text

6) Results, 2nd paragraph: please include total person-years of follow up

7) Table 1: please specify by including “all cause” mortality status in the title

8) Table 1: Please change “Television viewing” into “Screen time“

9) Table 3: include numbers of deaths and totals numbers of participants in each of the six screen time groups in the table for the Models 5 with additional exclusions of participants (they are already in text, but it would ease interpretation if they were in the Table 3).

Discretionary revisions:

1) Title: a more precise but similarly concise title would be “Television viewing, computer use and all-cause and cardiovascular mortality among US adults: a prospective study”

2) Background, 3rd paragraph, line 7: please include the reference of the study executed in the US including a selective sample of men.

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.