Author's response to reviews

Title: Association between Television Viewing and the Risk of Metabolic Syndrome in a Community-based Population

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Author's response to reviews: see over
Dear Editor:

Thank you very much for giving us the chance to reply the reviewers’ comments for our paper "Association between Television Viewing and the Risk of Metabolic Syndrome in a Community-based Population ".

Concerning the comments of all reviewers, our reply was made as following:
20 February, 2008

Dear reviewers,

The authors would like to thank you for judicious reading of the manuscript and valuable comments which greatly improved this manuscript. We have made revision according to your comments.

Yours sincerely

Cheng-Chieh Lin
Professor,

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1. Was the question regarding the amount of TV watched an open question, or were categories provided?
Reply: The question regarding the amount of TV watched was an open question and we have mentioned it in the manuscript (p.7, 1st paragraph, line 3).

2. The authors state that a modification of the NCEP definition was used, but they do not state what that modification was. It is apparent that the modification is regarding the cut-offs for abdominal obesity. The authors should explicitly state this, and state the reference for the 90 and 80 cm cut-offs.
Reply: The NCEP definition modified for Asians was adopted by our study. And we have added this information in the method section and cited the reference in the manuscript (p 8: the last paragraph, lines 1-2; p9: 1st paragraph, line 4).

3. Carbohydrate intake should be adjusted by energy intake before use in correlation or regression analyses, as recommended by Willett and others.
Reply: Yes, we did adjust total energy intake for carbohydrate intake. We describe more clearly in the method and cite the reference in the manuscript (p7, 1st paragraph, the 3 lines from the bottom).

4. The authors frequently use the word “developing” in reference to their findings. They did not find that more TV watching was associated with a higher risk of developing the metabolic syndrome. Rather, they found that it was associated with a higher risk of having the metabolic syndrome, or more simply, of with a higher risk of the metabolic syndrome. “Developing” implies that the findings are prospective.
Reply: We have changed the wording from ‘developing’ to ‘having’ in the manuscript.

5. The second to last sentence of the conclusion of the discussion needs to be split into two sentences.
Reply: We have corrected the sentence according to the reviewer’s suggestion.

1. The authors need to reconsider the terminology they have used to describe the associations between TV time and the MS. This is a community-based cross-sectional study of a selection of Taiwanese residents living in Taichung City who were surveyed between October 2004 and September 2005. The terminology used by the authors throughout the manuscript (ie: risk of ‘developing’ the metabolic syndrome) implies that the outcome is ‘incidence’ of the MS, which can only be ascertained from longitudinal studies. From an epidemiological viewpoint, cross-sectional studies can only provide information on associations with the ‘prevalence’ of the MS in this population. Only longitudinal studies can determine whether a specific risk factor can influence the development of a condition. In its present format, the manuscript is misleading since it states that watching excessive television places an individual at greater risk of developing the MS. TV viewing is associated with an increased prevalence of the MS (ie: incidence was not assessed). Careful consideration and appropriate re-wording is warranted on the terminology used throughout the manuscript.
Reply: We have changed the wording from ‘developing’ to ‘having’ in the manuscript.

2. The rationale for using the three categories of TV viewing status (< 14, 14-20, and > 20 hr/week) needs to be provided. Were tertiles considered? In both men and women, the extreme TV group (> 20 hr/week) contains significantly more subjects than the 2 other groups. What is the likely influence of this imbalance on the findings?

Reply: Yes, we classified TV viewing into three categories according to tertiles. The extreme TV group containing more subjects than the other 2 groups is due to a lot of individuals having the values of the cutoff point for this category. Using tertiles to classify a continuous variable into a categorical one is to avoid the imprecision due to few individuals in any categories. Although there exists imbalance for the number of individuals in different categories, each category still has enough study subjects to provide precise estimation.

3. Table 4: The authors provide details of the covariates that were included into the adjusted models. It is noted that occupational activity is included into the model and not total activity. What is the rationale for not including total activity into the adjusted model? While this is probably a decision based on the univariate analyses (eg: not significant in women), the same could be said about smoking – which has been included into the model.

Reply: Yes, we chose the significant variables into the final model according to the results of univariate analyses, which was proposed by Hosmer in Applied logistic regression. Since total activity is equal to the summation of leisure-time activity and occupational activity. Total activity contains information of both leisure-time activity and occupational activity, thus there is overlapping information for this newly derived variable with leisure-time activity and occupational activity. Therefore, it is not appropriate to choose total activity and occupational activity variables at the same time into the final model because of collinearity (the correlation between total activity and occupational activity is 0.92 from table 3). The proper way is to consider total activity alone or leisure-time activity or occupational activity for inclusion, not three of them at the same time. We choose the latter because we can examine which type of activity (leisure-time, occupational or both) contribute to the variation of metabolic syndrome. And because univariate analyses were the same for man and woman, we have the same model for man and woman.


4. Following on from the point above, it is stated that “Since total activity (leisure-time activity + occupational activity) might be inversely associated with sedentary behaviours…”. However, Table 3 reveals that, while statistically significant, the correlation between total activity and TV viewing is very weak (-0.09). This is consistent with several other studies that have shown very weak correlations between TV and PA (mostly leisure-time activity). Figure 1 is very useful as it describes the joint association between TV and physical activity.
Importantly, it shows that, at least in women, there is an increased odds ratio even in those who undertake sufficient physical activity. From a public health viewpoint, this is an important message as it indicates that sedentary behaviour and physical activity are two distinct behaviours. It is recommended that the authors remove the sentence and replace with a brief statement describing how the joint associations (TV/PA) were assessed.

Reply: We have deleted the sentence according to the reviewer’s suggestion and added a brief statement describing how the joint associations (TV/PA) were assessed (p10, 3rd paragraph, lines 1-3). And this part of findings is in Figure 1.

5. The rationale for selecting the categories of leisure-time activity, occupational activity and total activity needs to be provided.

Reply: We classified leisure-time activity, occupational activity, and total activity into three categories according to tertiles. Due to more than 33% of individual having value of 0 for leisure-time activity, we combine the first and second tertiles into one category. We have added the information in the method (p9, the last line; p10, 1st paragraph, lines 1-6).

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct) 1. With regards to the TV viewing time question – could the individual have been doing any activity during this time? For instance, could the individual be engaged in preparing the meal whilst watching TV? Or did the TV time question specifically relate to the time whereby the individual was only sitting watching TV?

Reply: We asked subjects how many hours they spent on watching TV per week. Our question cannot know whether they only sit watching TV, or prepared the meal whilst watching TV. Your comments are quite good. We’ll modify this question for our future follow-up study.


Reply: We have added the reference in the reference list.