Reviewer’s report

Title: The Correlates of Leisure Time Physical Activity among Adults in a City in Southern Taiwan

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Reviewer: Dafna Merom

Reviewer’s report:

This paper examines leisure time physical activity in a city in southern Taiwan. As the authors mentioned there are not many publications on physical activity pattern, and even less on correlates, from non-Western societies. In this respect the paper has the potential to contribute to the global understanding of physical activity influences. The authors covered several correlates and contextualized their findings in existing literature but it needs much more improvement before publications.

Major compulsory revisions:

1) The level of analysis is not satisfactory to be published. The results from the logistic model are not informative at all. I truly advise the authors to get a statistician advice. The similarity between the ORs in both columns should have raised authors’ attention!!: Does it make sense that, for example, men are more likely not to meet the recommendation compared to women (<10 MET-hr) and also more likely to meet the recommendation than women? Another example, does it make sense that those that consume alcohol are less likely to meet recommendations than those who do not but also less likely not to meet the recommendations? They can not be both. In logistic model they should not estimate the odds for each cut-off but rather estimate the odds of meeting only one cut-off (i.e., 10MET-hr=1 versus not <10MET_hr =0), or vise versa). The authors should decide which “side of the coin” they want to report on , the other will be just the reverse.

A proper analysis will be to add “a multivariate logistic model” in which they present both unadjusted and adjusted odds ratio - this is important because some behaviors may cluster within individuals and some associations will be confounded - the logistic model will compute the “net” effect of each correlates given all other important ones are in the model with adjustment for confounders. Age and gender are usually confounders, if the distribution by age is different for men and women, the associations with LTPA cut-off must be adjusted for this. So it is expected that the associations of each alone will be changed when both variables are included in the model.

Last, Leisure time physical activity varied significantly between men and women, and thus influences may be different. I strongly advise to examine gender differences in correlates before deciding to report on the whole population.
2) It is important to clarify the design. In the method the authors mentioned that the first survey was conducted in 1996 sampling 1,638 people. From this paragraph it seems that the 762 people were those that participated in 1996 and 2006-8. Is this true? Such a design is a longitudinal study. Thus the results of the 762 people are not based on an independent cross-sectional study. It is rather a dependent sample of selected population. This methodological aspect must be clarified, and including some demographic information related to those who did not return their survey, so we know if this is a selective population.

If it is a cohort study it will be more interesting to report change in physical activity over 10 years within this cohort and the correlates that predict a positive shift. Is the choice of reporting on the second wave was because more questions were added? Is the data used in the analysis related to 2006-2008 survey only, or some data from 1996 were included.

Minor revisions

Background

The sentence in the introduction starting with “In many Asian setting, the interrelationship “… is too long and the English should be clearer.

Discussion

Another limitation of this study is the lack of measurement transport and occupational physical activity. There are several published papers from Asia (in china Muntner et al., 2005, Hu et al., 2002, in Vietnam by Trinh et al, 2008) that showed low level of leisure time physical activity but high level of work-related and transport related activity.

It is important to include this in the discussion as it is possible that low level of leisure time activity is compensated by high level of activity in other life context. If they did not collect this data it is important to address it as a limitation.

It will be good to restructure the discussion around themes and not to repeat each correlate one by one.

I believe that with a multivariate logistic model the story will be clearer and will evolve around what is unique in Taiwan and what seems to be similar to other Western societies.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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