Reviewer's report

Title: Patterns in sedentary and exercise behavior and associations with overweight in boys and girls

Version: 1 Date: 1 December 2006

Reviewer: Tuija Tammelin

Reviewer's report:

General

Study population and the methods are well described. The limitations of the study are also well discussed. The topic is already widely evaluated and reported, but relatively young study population and the cluster analyses give some new fresh points of view into this important area. The results of the cluster analyses show what kind of natural groups exists among children.

At this moment, however, data presented does not fully support the interpretation of the results and the conclusions. The authors are encouraged to rename the clusters, and then rewrite the discussion and abstract accordingly.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors are encouraged to rename the clusters, because as such the titles of the clusters are somewhat misleading. For instance:

- Cluster 1 "Healthy behavior" is characterized by low TV use and low PC use. In girls, this cluster is also characterized by high level of PA (PA = physical activity) but not in boys. These clusters are different in boys and girls.
- Cluster 2 "High TV viewers" are characterized by high TV use and by high PA in boys, but low PA in girls, which may lead different interpretation in boys and girls.
- Cluster 3 "Mixed" (only in boys) is mainly characterized by lack of PA.
- Cluster 5 "Unhealthy behaviour" is mainly characterized by high TV use and very high PC use. In boys Z-score for PA is slightly negative but in girls it is positive. This cluster is not behaving unhealthy when we consider PA.

Because the characteristics of the clusters are different in boys and girls, the results (especially in Table 5) should be interpreted in the different way in boys and girls. The results between boys and girls are not directly comparable. Firstly, the use of cluster 1 as a reference groups (Table 5) leads to different situation in boys and girls. And especially, the clusters 2 and 5 are titled similarly in boys and girls but include different characteristics in boys and girls. Therefore, the comparisons between genders should be done with caution.

The authors conclusion "In boys, both sedentary and physical exercise appear to be important with regard to overweight, while in girls the typical sedentary behaviors (TV viewing, PC use) seem more important than physical exercise behaviors in the association with overweight" is therefore somewhat misleading.

The authors are encouraged to reconsider to analyse data once again, without using the variable “TV during dinner” in cluster analyses. This would maybe make the interpretation of the results easier. This variable does not essentially add information into this manuscript. TV during dinner is included in the total time of TV viewing (hours/day) and these two variables are also highly correlated (as shown in Table 2).

Table 3. I would like to see 95% confidence intervals to values describing the proportion of overweight individuals in different clusters. I think this would be enough. The results in Table 5 are difficult to interpret, because the clusters in boys and girls are not characterized by similar properties. The authors could reconsider to leave the Table 5 out of this manuscript.
Table 4. It would be interesting to see the associations of different levels of PA and sedentary behaviours (TV and PC use) with overweight. For instance PA could be categorised into following groups: not at all, 1 to 2, 3 to 4, 5 to 6, and 7 hours or more physical exercise per week. TV viewing is quite prevalent habit among children: half of the children viewed TV for more than 2 hours per week. It would also be interesting to see the associations of TV viewing for more than 4 hours per day with overweight. And similarly for PC use for more than 2 hours per day.

Results

Table 3. I would like to see the mean values of variables TV use, PC use and Physical exercise. It would help in the interpretation of Z-scores in Table 3.

Discussion

Authors write: "In accordance with the 'displacement hypothesis' we found opposite associations between physical exercise and TV viewing with overweight."

This finding does not directly support the 'displacement hypothesis'. Instead, the correlations between PA and TV use, as well as PA and computer use were inverse and significant in girls, which gives slight support to displacement hypothesis in girls, but not in boys.

Title and abstract

I would like see the range of age among children (9-14 years) in the title and in the abstract (instead of the mean value 11 years).

Introduction


What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.