Reviewer's report

Title: Leisure time physical activity and sedentary behaviour among school adolescents in Nepal

Version: 1 Date: 1 April 2014

Reviewer: Tim Olds

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This paper is a descriptive analysis of physical activity (PA) and sedentary behaviour (SB) in Nepalese secondary school students. It uses a reasonably large sample (n = 405), and a questionnaire including socio-demographic and environmental data which allow the authors to discuss determinants and correlates. As far as I know, this is the very first study to look at these behaviours in Nepalese youth, and it would benefit us all to have data such as these more readily available.

These are all positives, but there are several important limitations.

Major Compulsory Revisions

(1) The instruments used are suboptimal. The IPAQ is widely used, but has very modest validity in most populations, and as far as I know validity has never been determined in this population. This paper would be stronger with some local validity and reliability estimates. The instrument used to quantify SB seems to have been a custom instrument, with neither validity nor reliability data. I recommend the authors collect validity and reliability data on these instruments in the Nepalese context if possible (eg by comparing PA to pedometry). I realise this may not be an easy task in Nepal, but at the very least test-retest reliability data should be gathered on a sample of at least 30 students.

(2) I would like more information on how representative the sample was of the Nepalese population as a whole. For example, what percentage of Nepalese kids attend private schools? How many families are nuclear, how many extended? How does the SES distribution in this sample compare to national data? What proportion of Nepalese students are urban dwellers?

(3) The paper would also benefit from some socio-economic background about Nepal. What does "terai" mean? How common is motorised transport? What is the typical level of occupational PA in Nepalese kids (chores, paid work, work in family businesses)? How do private schools differ from public schools? What types of organisations offer sport in Nepal? Information such as this would help the Western reader to contextualise these interesting findings.

(4) The statistical treatment seemed odd to me. For PA, a multivariate (not multilevel) logistic regression is used, but for SB multiple regression has been used. I don't see the justification for this. Why not stick to the same analysis?
(5) Given that the median sitting time is 7-8 hours, why has sitting time been dichotomised at 4 h in the logistic regression, but at 6 h in Table 1?

(6) The Conclusion is too speculative. This is a cross-sectional study and causal inferences are not warranted.

Minor Essential Revisions

(1) What was the mean (SD) age of participants?

(2) What was the response rate for schools, and students within schools? What kinds of physical disability disqualified students from participation?

(3) Table 2

It would be more illuminating to use column rather than row percentages. For example, rather than knowing that 75% of the female students who had no LTPA were aged 15-17 (which doesn't mean much unless we know what percentage of all female students were aged 15-17), it would be more enlightening to know what percentage of female 15-17 year old had no LTPA, so we could compare it to the percentage of 18-20 year old students in the same situation.

(4) I was surprised that a lot of kids who walked or cycled to school (66 girls and 35 boys) were nevertheless classified as having no LTPA. Does this mean that in each case the walk/cycle was less than 10 minutes?

(5) In Tables 3 and 4, I assume "Adjusted" means adjusted for all other covariates? If so, clarify this in the table legend.

Discretionary Revisions

(1) A discussion of how these IPAQ data compare to other national data would be interesting (i.e., a comparison of actual minutes of LTPA and SB, as opposed to a discussion of correlates).

(2) In general, the Discussion leans too heavily on a comparison of covariates across very different societies. It is not at all surprising that covariate relationships vary across countries, particularly between high- and low-income nations.

(3) On the other hand, the difference between boys and girls is striking, and this should be highlighted more, particularly in the light of cultural expectations of girls and boys in Nepalese society. Are girls expected to be more studious than boys? Would girls be expected to go on to higher education? Are high-levels sports accessible to girls?

(4) I would be interested in seeing a linear regression of SB on PA, adjusted for relevant covariates.

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: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests