Reviewer’s report

Title: Does dog-ownership moderate seasonal patterns of neighbourhood-based walking among adults? A Longitudinal Study.

Version: 1 Date: 23 December 2010

Reviewer: Takemi Sugiyama

Reviewer’s report:

This study examined the seasonal change in walking among non dog owners and dog owners. The findings are informative and can be used to further justify policy-level support for dog walking. However, I am concerned with the way the authors analysed data and presented the results.

Major Compulsory Revisions

1. The main background issue the authors discussed in the introduction is reduced activity levels in winter months in countries such as Canada. Thus, the key information that needs to be presented is to what extent participants reduced walking in winter compared to summer, and whether this is different between non dog owners and owners. However, no such information is shown in Table 1, and the authors examined only consistency in walking in logistic regression. The logistic regression the authors presented partly answers the question, but not directly. I suggest the authors to include the proportion of those who decreased walking in Table 1 and to calculate the odds of reduced walking among those who reported walking in summer (in addition to the current analyses).

2. In Table 3, the authors presented the results of logistic regression and mean difference. I think the latter should be part of Table 2. (I assume that Table 2 shows adjusted means.) In page 9, the authors discussed the results of logistic regression before descriptive information on time spent in walking. This should be reversed. I also urge the authors to be consistent in reporting the results. Currently, there is a mixture of different decimal point and different ways of reporting range. (For Table 2, one decimal point seems enough.)

Minor Essential Revisions

1. (title) The authors used “moderate” in the title and throughout the text. However, the aim of this study seems slightly different from moderation analysis (examining whether the strength of a relationship differs between subgroups). I suggest using a different title to avoid potential confusion.

2. (page 5) A reference is needed for the last sentence of the first paragraph (“Extended periods of physical inactivity…”).

3. (page 5) Reference 13 is a study in Canada, which is not consistent with the authors’ claim.
4. (page 5) The authors wrote “their dogs as a source of motivation, companionship, and social support”, but dogs per se are unlikely to provide social support.

5. (page 6) Reference 15 seems to address the seasonal issue. The authors need to clarify what the Knight & Edwards paper found and how the current study is different from their study.

6. (page 8). Were there any participants who lost or obtained dog(s) between the two surveys? If so, please describe how such participants were treated.

7. (page 8, 9) The description of analyses should be in the order of (1) sample characteristics, (2) descriptive information about walking (continuous), and (3) logistic regression, corresponding to Table 1, 2, and 3. The authors described that they used linear regression to calculate adjusted mean. However, ANCOVA (or general linear model) is typically used to obtain adjusted means. Please also add the name of statistics software used for analysis.

8. (page 9) In the third paragraph, the odds ratio and 95%CI are different from those reported in Table 3. The table number is also wrong (not Table 2 but Table 3).

9. (page 10) Suggest adding “in recreational walking” after “showing dog-owners to be more physically active” in the second paragraph.

10. (page 11) It is not totally clear what “Further reductions in physical activity among this insufficiently active group” means.

11. (page 11) The sentence “Of the dog-owners in our sample, 63% reported walking their dog in both summer and winter; this is in line with previous work in Australia, where 74% of owners reported not walking their dog [22]” does not make sense.

12. (page 11) The discussion on walking for transportation focused on the difference between dog owners and non-owners. However, the central issue of this study is the seasonal pattern of walking in dog owners and non-owners. The authors need to discuss this in relation to walking for transport. The current discussion on transport walking included workplaces and educational institutions, which are often outside one's neighbourhoods. Since the study examined walking within neighbourhoods, some elements in this paragraph are outside the scope of the study.

13. (discussion) An issue the authors did not discuss is that dog owners walked more for recreation in winter than in summer. This is counter-intuitive and the authors need to discuss potential reasons for this.

14. (Table 3) Given that dog owners' NTW was about the same in summer and in winter, it is odd that they are less likely to maintain walking, compared to non-owners (OR= 0.65). Please check the data. In addition, to be consistent with Tables 1 and 2, non-owners should be presented first (above).
Discretionary Revisions

1. (page 6) “longitudinal findings… within a larger cross-sectional study” sounds odd. Suggest using “observational study” rather than “cross-sectional study”.

2. (page 7) The second paragraph describing Calgary should be placed after the overall explanation of the EcoEUFORIA in page 6.

3. (references) Some references are quite old (e.g., 1991, 1993). Suggest using more recent evidence.

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

**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