Reviewer’s report

Title: Dog ownership, dog walking, and leisure-time walking among Taiwanese metropolitan and nonmetropolitan older adults

Version: 0 Date: 27 Dec 2017

Reviewer: Therma Cheung

Reviewer's report:

Thank you for the opportunity to review this article.

It is a very interesting study. I have a few suggestions and comments as below:

1. Background and 2. methods: no issue and very easy to understand

3. Results: the authors would need to revise this part to improve its readability

3.1 Characteristics of the participants (is it better to change it to 'sociodemographic characteristics of the participants')? - the authors have repeated information given in Table 1. As a reader, I am not sure why the authors chose to repeat certain percentages in the text. what is the significance of these percentages? What is the message here? For example, if the authors want to highlight the population proportion of female to male are significantly different between metro and non metro area, they have to put the message across in the text and discuss the significance of this data in the discussion section later.

Table 1 - it says data are expressed as number(percentage) or mean(SD). However, from what I read, only percentages were reported in the table. Please amend as appropriate. It is also stated that the proportional differences across metropolitan area categories was tested using chi square. Please state explicitly what you are testing? is it the association between the participants' characteristics and the areas (metro/ non metro) that they stay in? Here I see that population proportions of gender and self rated health status are significantly different. Please discuss these results in your discussion section.

Page 8 second paragraph - I think you should give this paragraph a different subheading (consider 'prevalence of dog ownership and dog walking status) under 3.2 as it is not really under the sociodemographic characteristics of the participants (provided you change the earlier sections, and I think this deserves a separate headings as it is the start of describing your main results). In this paragraph, again percentages were reported as subtractions from the results tabulated in table 2 (For example, table 2 reported non dog owner 88%, and in text '12% owned a
dog). The text in this paragraph is not adding value to the article. What is it that the authors want to highlight here?

Table 2: the categories of Non dog owner, non dog walker and dog walker are a bit confusing (I know the terms are defined in the methodology section but I think the table can still be presented in a way that makes these data even more readable. For example:

Dog ownership -

Dog owner 12%

Dog walker 8.3%

Non dog walker 3.7%

Non dog owner 88%

You may take a look at the table and see how you can improve the readability. In terms of statistics, I have checked and realized that you have done a 3x2 table with non-dog owner, non-dog walker and dog-walker with metro and non-metro area. It is a bit confusing as the three categories of non-dog owner, non-dog walker and dog-walker are not under one variable. the authors may want to explicitly state that they are doing a chi square for dog owner, non dog owner with metro and non metro, then another chi square for dog walker and non dog walker etc.? Again what is the significance of your finding here as you didn't highlight it in the text. Also please check the summation of these three variables of non-dog owner, non-dog walker and dog walker under non-metro area, they add up to 99.9% only. Please rectify the decimal place calculation.

3.2 (could be changed to 3.3 if there is a 3.2 after revision) Dog ownership and dog-walking status associated with 150 min of leisure-time walking in metropolitan and non-metropolitan areas - Table 3 can be revised to make it easier to understand. Does Ref means a reference point defined as OD = 1? Also, it is not clear how many people who are not dog owners actually achieve the 150 mins leisure time walking. This information is not available from Table 2 or anywhere else.

Discussion - No major issues once all of the above are addressed. Personally I would be interested to know the sizes of the dogs as it could a very important confounding variable in terms of dog walking.
Conclusion - I would be interested to read a qualitative study as an extension from this study to find out the reasons of dog owners not walking their dogs both in metro and non metro area. The authors may find some of the reasons may extend to a scope that is beyond what they have discussed in this article.

I wish the authors the best in the publication of this interesting research.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

Acceptable

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