Reviewer's report

Title: Companion dog acquisition and mental well-being. A community-based three-arm controlled study

Version: 0 Date: 22 Aug 2019

Reviewer: Samson Agbaje

Reviewer's report:

Reviewer's Comment on Manuscript #PUBH-D-19-03078 entitled "Companion dog acquisition and mental well-being: A community-based three-arm controlled study."

Recommendation

Minor correction

Abstract

The abstract was well-written and explicit.

Introduction

The introduction provides a piece of quality empirical evidence on the link between dog ownership and positive mental well-being in humans. The background gives a vivid description of the study objective. However, I observed that authors gave justification for studying loneliness and psychological distress and omitted the rationale for the positive and negative affect/emotions. Furthermore, there was a typographical error (repetition of the phrase would raise) in lines 46 - 47 on page 4. I think the study background provides sufficient data on the current empirical evidence, the study rationale, and design.

Methods

In the methods section (line 21-23), the authors indicated that the primary outcome was to examine the impact of community-based dog ownership on human physical activity. The authors failed to inform readers about the study aim in the introduction. The information and justification provided focused mainly on secondary outcomes. Therefore, the authors need to provide information on how PA was assessed among the participants at the baseline (i.e., objective or subjective assessment).
Questionnaires/outcome measures

The questionnaires used for data collection are appropriate. However, I am about the reliability of the UCLA loneliness scale in the Australian population. The authors did not provide information on any previous studies that used the instrument for data collection in an Australian setting. Such information could help the reader evaluates the psychometric qualities of the UCLA Loneliness Scale in an Australian context.

Statistical analysis

I appreciate the authors' crisp explanation of the statistical analyses. However, I am concerned about the rationale behind the supplementary pooled analyses. From the study, the LC and CC groups were exposed to the same intervention. Nevertheless, the intention (though delayed) to acquire a dog in the LC participants was more pronounced. This attribute could have a profound effect on the results of pooled analyses. This procedure might have introduced inconsistencies in the results, as acknowledged by the authors in the study limitations section. I think such as an extraneous factor/attribute that could not be accurately measured might have introduced "response bias." Thus, combining the two groups (pool) could undermine the validity and generalizability of the findings. The authors need to report this as a study limitation. Also, the authors did not give information/criteria for the interpretation of effect sizes, as recommended by Cohen (1988).

Results

In the results section, Line 35-38, the authors reported that there were "no significant differences in baseline characteristics between participants who did not complete the study and the final sample, in terms of age, gender, education, smoking status, alcohol consumption, physical activity, sedentary behavior patterns, loneliness, positive and negative affect, and psychological distress". I ask the questions: how did the authors measure these outcomes? Also, are lifestyles part of the primary outcomes measured in the study? If yes, the authors should give a more explicit explanation.

Furthermore, the authors provided Figure 1 (study design and timeline), which gives valuable information on the study procedures. However, they also need to include the CONSORT flowchart of participants for the intervention.

Discussion

The section is well-written by the authors.

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.

Yes

**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

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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