

## **Reviewer's report**

**Title:** Steps/day predict changes in anthropometric outcomes: HUB City Steps

**Version:** 1 **Date:** 31 July 2012

**Reviewer:** Ann Swartz

### **Reviewer's report:**

This study is a secondary data analysis that aims to determine the relationship between various representations of steps/day and change in body composition, anthropometric, and cardiometabolic variables. The novel aspects of this study include the use of measured percent body fat, and a specific focus on an African American population. Further, this study includes an evaluation of many common methods of expressing steps/day over an intervention period, and how these different expressions of the same data can impact health variables. These questions are important due to the prevalent use of pedometers as a physical activity intervention tool, and the popularity of walking interventions.

### **Major Compulsory Revisions**

The title does not clearly reflect the purpose of the study. It leads the reader to believe this study examines the relationship and predictive ability of steps/day on various health variables, when in fact the purpose is to examine the “utility of descriptive indicators of pedometer-determined steps/day for predicting” changes in health related variables. The title does not indicate that this is an evaluation of different methods of representing physical activity data as collected by pedometers.

The title and background do not match with the stated purpose of the study. The title and background set the reader up to expect a paper focusing on the impact of physical activity, as represented by steps/day, on health parameters. The purpose focus' on method in which the PA data is presented impacts health indicators. Therefore, the reviewer suggests clarifying the purpose statement and improving the agreement between the purpose and the rest of the manuscript.

Paragraph 1, background: The authors have begun to set up the rationale nicely. However, most of the research studies cited were performed with primarily Caucasian volunteers. Little is known about the health implications of a PA intervention on health variables in an African American population. To strengthen the rationale for this study, the authors may consider highlighting the lack of evidence on the health benefits of walking in the African-American population.

Methods, Lines 100-111: A nice general overview of the HUB study is presented, but the reviewer would like to see more details on the specific secondary analysis included in this manuscript.

Methods: Information on participants in this study is missing. Please provide more information. For instance, in the statistics section, “participant subgroups” is

mentioned, however the reader has not been introduced to what the subgroups are.

Methods, lines 115-124: Please provide information on the validity and reliability of your outcome measures (e.g. Tanita TBF-310T, OMRON HEM-907XL, Cholestech LDX Lipid Analyzer).

Methods, lines 115-124: Please provide more information on the procedures for collection of outcome data (e.g. blood pressure, body fat, height, weight, 6MWT, etc.). If standard procedures for the collection of these variables were followed, please provide reference.

Methods, lines 117-118: What mode was used to assess body fat levels with the Tanita: "Adult" or "Athlete"? What body composition equation was used to transform impedance values into body fat values, given that the majority of the participants were African American?

Methods: The HUB study provided education on the DASH diet and on healthy eating. How was this accounted for in this study, given that dietary changes have been shown to have an impact on the output variables of interest in this study?

Methods: Did any participants change their medications throughout the course of the study? If so, how was this accounted for in the study design or analysis?

Methods: How was the motivational interviewing accounted for in this study in terms of change in variables of interest?

Lines 148-151: Please provide rationale for assess change between the first two weeks and then categorizing the remaining 5 months and 2weeks of the intervention together. For some, there would have been substantial change right away, for others, gradual change, and for others, minimal change- how is this accounted for in the results? Why not compare (for instance) the first two weeks and the last two weeks, or a first two weeks, middle two weeks, and a final two weeks?

Lines 153-154: This is a very important statement. In order to better understand the implications of this statement, the physical activity intervention and step goals of the HUB study need to be defined in this paper.

Discussion, lines 290-298: Please clarify the purpose of this study- is it to focus on the representation of the data or the changes in health outcomes that occur with a physical activity intervention. The discussion is nicely written if the purpose of the study is to evaluate the changes in health outcomes that occur with a physical activity intervention.

#### Minor Essential Revisions

Line 103: It is not clear why the 12 month maintenance period was mentioned when it was not included in the paper.

Methods: Based on the inclusion/exclusion criteria, were any participants excluded based on physical activity level?

Line 169: It is not clear what "participant subgroups" are being referred.

Lines 264-266: The authors are encouraged to provide examples that would

include clinically meaningful changes in percent body fat. For instance a change in body fat of 2% may be statistically significant, but is within the error range of the Tanita device.

Lines 267-268: The difference in changes in anthropometric variable between genders is interesting. The authors are encouraged to expand on this. Was there a difference in steps/day between the two groups, or is it simply a difference in body composition between genders?

#### Discretionary Revisions

Line 204-205: It is not surprising that little change was seen in the cardiovascular variables, since most were within normal limits or very close to being normal. IT is not clear why the authors did not select a sub-sample with abnormal values to determine the impact of PA on these variables.

Lines 218-219: Since only 2% of the variables fell outside the pre-set limits of steps/day, it is not surprising that there were no differences between the full, truncated and excluded data sets.

Line 278: It is not clear what is meant by “possible exceptions”. Please clarify.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.