

Abstract

Introduction

Pedometers have become a frequently used tool to measure physical activity. The accuracy of pedometers has been an interest of many researchers given the popularity of the tool. When, pedometers are employed, there are many potential sources of error, including missing data. Because previous studies indicated that the amount of missing data does not alter the strength of the relationship between PA levels and relevant health outcome variables, some researchers argued that the missing data may not be a significant concern. In a public health perspective, previous researchers' point of view may be true. This missing data, however, can be a significant problem if researchers are interested in directly comparing between groups and/or conditions. Without knowing how much information is missing, it is impossible to make direct comparisons. Therefore, the purpose of the study is to examine how much information is missed when participants are asked to follow the common instructions of pedometer daily wear.

Methods

At this time, 27 participants have been recruited and randomly assigned to either the experimental or the control group. After participants were screened for eligibility criteria and consented to participate in the study, the participant was equipped with an accelerometer strapped to their wrist and given a belt with an accelerometer and a pedometer to be worn over the iliac crest of hip. All participants were asked to wear the belt from waking up until going to bed for at least seven consecutive days. The experimental group was given a log as well to see how self-recording wear times influence subject compliance.

In order to insure accurate assessment of the amount of missing data, Participants were blinded for the specific research questions, but were told the overall object of the study was to evaluate the effectiveness of the devices. To find the amount of missing wear time, the discrepancy between amount of physical activity recorded by the wrist accelerometer and hip accelerometer was used. When the wrist accelerometer recorded physical activity, but the hip accelerometer displayed no PA, it was considered that the participant was not wearing the pedometer. Periods of missing time were calculated from before bed time and after rising in the morning. Amount of steps missing due to missing data will be calculated.

Results and Discussion

Based on the preliminary data analysis, it is anticipated that a large amount of steps are not counted by pedometer due to missing data. It is important to develop effective strategies to increase subject compliance in order to ensure accurate data.