The Effectiveness and Cost-efficiency of Group Contingency in Promoting Walking Behavior of College students

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Background

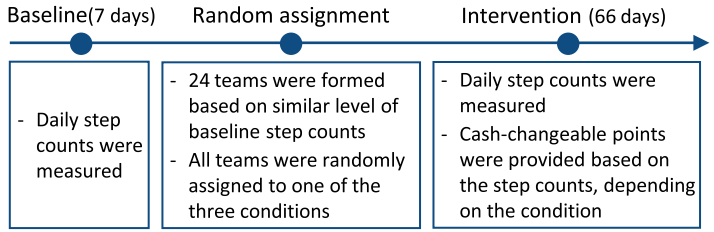
- Physical activity is an essential component in maintaining a physically healthy life and also has positive effects on psychological wellbeing (Oja et al., 2010).
- Group contingency, a behavior management strategy in which a consequence is based upon the behavior of all or selected portion of a group of people (Litow & Pumroy, 1975), has been successfully applied to programs with the purpose of increasing academic performance and decreasing problem behaviors in school settings.
- The effectiveness of group contingency on other behaviors has been investigated through numerous studies, but results are inconsistent (Hartman & Gresham, 2016).

Purpose

- The purpose of this study was to examine the effectiveness and cost-efficiency of three types of group contingency for promoting the walking behavior of college students.

Methods

- **Participants**: 72 college students (female = 45)
- **Experiment Design**: Randomized Controlled Trial (RCT)
  - All participants were randomly assigned to one of the three types of group contingency, as described below.
  - **a. Independent**: Participants earned points each time they met the predetermined goal, regardless of their teammates' performance.
  - **b. Interdependent:** Participants earned points each time all teammates met the predetermind goal.
  - **c. Dependent:** Participants earned points each time a randomly selected teammate met the predetermined goal.
- **Measures**: Participants' daily step counts (measured using Pacer[1])
- **Procedure**



Results

- **Differences in effectiveness between groups (Figure 1)**
  - Analysis method: Linear mixed model
  - The increase in step counts in intervention was higher in the dependent condition compared to the independent and interdependent conditions.

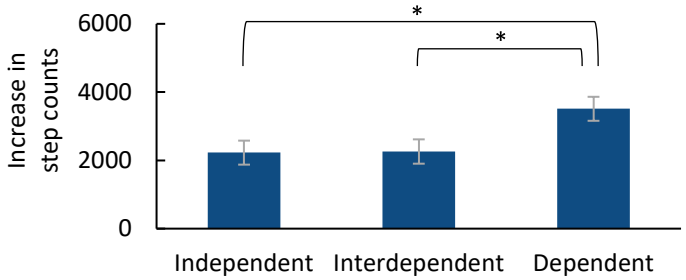


Figure 1. Increase in step couns between groups

- **Differences in cost-efficiency between groups (Figure 2)**
  - Analysis method: Kruskal-Wallis H
  - The increase in step counts per point was higher in the interdependent condition compared to the independent and dependent conditions.

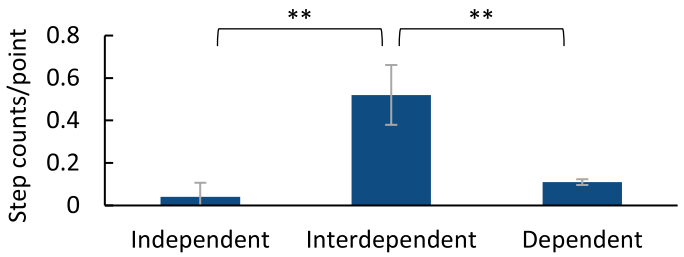


Figure 2. Increase in step couns per points between groups

Discussion

- In terms of effectiveness, the dependent condition was most effective in promoting walking behavior.
- In terms of cost-efficiency, the interdependent condition was the most cost-efficient in promoting walking behavior.
- The findings suggest not only that there are practical advantages in using group contingency in a program to promote physical activity, but that there is also a need to use different types of group contingency to match the purposes and monetary conditions of the program.

Reference

- Hartman, K., & Gresham, F. (2016). Differential Effectiveness of Interdependent and Dependent Group Contingencies in Reducing Disruptive Classroom Behavior. *Journal of Applied School Psychology*, *32*(1), 1–23. https://doi.org/10.1080/15377903.2015.1056922
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1) Pacer is a pedometer based mobile application for healthcare (https://www.mypacer.com)

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