

School-Based Exercise Intervention Increases Free Living Exercise Behaviors In Children

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Introduction

Cardiovascular disease is the most common cause of death and disability in the US. The study examines a community-based intervention program directed to improving the cardiovascular health promoting knowledge and behaviors of 3rd grade school children.

Hypothesis

We assessed the hypothesis that an intervention program directed toward improving cardiovascular health promoting behaviors of 3rd grade children would result in increased free living physical activity after the intervention.

Methods

Design: A mixed-subject design 2 x 3 x 3 x (3 x 2) was used. The three between-subject variables were gender (male, n=45; female, n=68), school (W, n=40; S, n=30; H, n=43) and race (Caucasian, n=44; African American, n=55; other, n=14 consisting of 14 students: 6 Hispanic, 7 Asian and 1 Native American.). The two within-subject variables were time of test (pretest, post-test) and three most frequent activities. *Population, Sample, Setting:* The study was conducted in 2003. One hundred thirteen 3rd grade children from three elementary schools in Nashville, Tennessee, participated in the pretest and post-test study. *Instruments:* Participants indicated via self-report their three most frequent activities. These activities were assigned *Metabolic Equivalent (MET)* scores. The MET scores ranged from 0 to 8.

Results

MET scores from the reported three most frequent activities were submitted to a mixed-subject design. The three between variables were gender, school and race. The two within-subject variables were time of test and the three most frequent activities. After the intervention, students changed their most frequent activities to activities with higher MET scores. The average MET score increased by .7 from the pretest (m=5.77, se=.19) to the post-test (m=6.47, se=.15), $F(1,62)=7.46, p<.05$. The MET scores for pretest and post-test differed with race, $F(2, 62) = 3.24, p<.05$. African Americans and students belonging to the *other* race exhibited the largest increase in MET scores (.9 difference, pretest=5.50, posttest=6.39 and 1.22 difference, pretest = 5.52, posttest =6.74, respectively). Caucasian showed the smallest increase of .10 (pretest =6.27, post-test =6.37). Weekday accelerometers recordings from 3 to 5 pm for a subset of participants support the self-report findings of increased activity after the intervention, $t(5) = 3.18, p<.05$.

Conclusion

In conclusion, we found that a short intense physical activity intervention positively affected free living exercise behaviors in 3rd grade children.

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