The Effects of a Structured Pedometer Exercise Program on Blood Pressure and BMI of Children Aged 9-12 Years
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Stephanie A. Recko
Advisor: Dr. Lloyd Laubach

Introduction

• Sedentary lifestyle becoming the natural lifestyle of people in the United States
• About 1 in 3 U.S. adults are obese (BMI>40)
• 17% of children and teens are affected by obesity
– CDC defines child obesity by using “BMI-for-Age”
  • A percentile ≥ 95th is considered obese

Current Pedometer Research

Dr. Dena Bravata
– Meta-analysis of current pedometer studies
• Mostly women (85%)
• Mean age of 49 years
Research with Children
– Dr. Catrine Tudor-Locke
• Recommendation for children ages 6-12
  – Females: 11,000 steps/day
  – Males: 13,000 steps/day
• Found that from age 6-19
  – Females take on average 3,272 steps less than recommended
  – Males take on average 3,864 steps less than recommended

Limited Research conducted on developing a walking program for children

Purpose of Study

• To determine the effect of a structured pedometer walking program on blood pressure and BMI of children aged 9 to 12 years
• Experimental hypothesis: The program will help motivate children to become more active and improve their blood pressure and BMI

Methods

• Case study of 5 children (began with 10, but 5 subjects dropped-out)
  – 3 males, 2 females
  – Mean age: 10.6 ± 1.34 years
  – BMI range: 15.4 to 27.8 kg/m²
• Pedometer used: Yamax Digi Walker SW-200
– Dr. Patrick Schneider research for accuracy and validation
• Pre and Post Testing
  – Height and weight measured without shoes and in athletic wear
  – Blood pressure taken twice on right arm for both pre and post testing
• Data statistically analyzed using SPSS v18
  – Both group and individual results examined

Procedure

• Length: 3-4 weeks
• Each child given a pedometer and log book to record daily steps
  – Parents asked to initial after each data entry
• Preliminary step counting performed to define baseline for average number of daily steps
• Daily step goal was given for each child

Case Results

• Subject 2: 12 year old female
  – BMI category: healthy weight
  – Blood pressure: normal

Discussion

• No statistically significant changes
  – Small number of subjects
  – Short period of time
• All subjects improved number of daily steps
  – Mean improvement of 2628.7 steps/day
• 3 of the 5 subjects saw weight gain
  – Growth, poor diet, lack of further exercise, etc.
• Further research needs to be conducted in order to make more definite conclusions

Practical Applications

• May be beneficial to conduct during the school year as opposed to summer
  – Eating schedule
    – More monitored dieting
  – Possibly less drop-outs due to vacations
• Bigger pool of subjects
• Long-term results
  – Will improvements made continue or more improvements?
• Methods of body composition instead of BMI