Study Design, Setting and Participants, & Intervention: Two cohorts were enrolled in a controlled study with measures at baseline (BL; beginning of school year), follow-up 1 (FU1, end of school year), and follow-up 2 (FU2; beginning of following school year). Cohort one (C1, n=288) and cohort two (C2; n=278) participated in FFF, an elementary school-based nutrition and PA education program including SPARK active recess targeting 4th grade students.

Outcome Measures & Analysis: PA and ST were measured with an adapted version of the Godin Leisure-Time Exercise Questionnaire. 24-hour recall measures AHA considered the effect of gender, baseline weight status (overweight/obese, healthy weight), and cohort.

Results: Cohorts did not differ in baseline PA, ST or weight status. All PA levels were significantly lower at BL than FU1 and FU2 (MPA BL 135±146, FU1 163±159, FU2 175±175; MoPA BL 165±139, FU1 189±145, FU2 183±147; SPA BL 229±141, 246±140, 234+137 minutes/week; all P<0.05) with no significant differences between FU1 and FU2. Patterns of change did not differ between cohorts or overweight/obese students. Overweight/obese students reported significantly higher levels of ST than healthy weight students (3.4±3.1, 3.4±2.8, 2.5±2.3 vs. 2.5±2.4, 2.7±2.3, 2.5±2.1 hours/week; P<0.01). Males reported significantly higher levels of SPA (247±147, 269±140, 248±136 vs. 210±135, 224±137, 200±136 minutes/week; P<0.01). A non-significant decrease in ST was noted for overweight/obese in C2, but not in C1.

Conclusions & Implications: Findings demonstrated seasonal, weight, and gender variance in PA and ST. Further analyses to investigate subjects that responded to the FFF intervention are warranted.

Fuel for Fun

Methods

Recruitment: 4th grade students participating in Fuel for Fun received SPARK as part of their school day curriculum.

Measures: Adapted version of Godin Leisure-Time Exercise Questionnaire.3,4 Measured height and weight.

Results

4th graders report more physical activity in May than in October; this increase is maintained through the summer to September of the following school year. Screen time is greater for boys than girls, for overweight/obese than normal weight students.

In general, SPARK did not significantly impact activity levels of these already highly active 4th graders compared to controls, who were also highly active. Two non-significant changes merit notice:

- Girls in Fuel for Fun maintained more mild activity than controls & than boys & this increase continued through the summer (an increase of 43 min/week).

- Unlike overweight/obese controls, the screen time of overweight/obese Fuel for Fun students decreased from fall to spring (by more than 20 minutes/week) & continued to do so over the summer.

Analyses are ongoing to compare activity changes to Fuel for Fun outcomes.

Reference


Conclusions

Data Collection: Surveys were completed in class at three time points: Baseline-Fall of 4th grade; Follow-up 1-Spring of 4th grade; Follow-up 2-Fall of 4th grade.

Data Analysis: Data were examined for normality, differences at baseline between cohorts, boys and girls, normal weight vs. overweight/obese controls. GLM compared mild, moderate, and strenuous minutes/week and screen time hours/week over the 3 time periods controlling for gender or weight status using SPSS 23.0.

<table>
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<th>Ethnicity/Race</th>
<th>Fuel for Fun Controls</th>
<th>Fuel for Fun Cohorts</th>
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<tr>
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<td>Mild</td>
<td>Moderate</td>
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<td>Screen Time</td>
<td>Activity Levels</td>
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</table>

Mild activity increased from fall to both spring & fall follow-up (P<0.001), but changes did not differ by treatment even when controlling for gender or weight status.

Mild activity increased from fall to both spring & fall follow-up (P<0.001), but changes did not differ by treatment even when controlling for gender or weight status.

Moderate activity increased from fall to spring & decreased from spring to fall follow-up (both P<0.005).

Changes did not differ by treatment when controlling for weight status, but controls tended (P=0.09) to show greater increase from fall to spring than FFF when controlling for gender.

Screen time increased from fall to spring & decreased from spring to fall follow-up (all P<0.001), but change in ST was not different between FFF & controls even when controlling for gender. However, changes in ST differed between treatments when considering weight status. ST did not differ between normal weight & overweight/obese controls. At all time points overweight/obese FFF had greater ST than normal weight FFF (all P<0.005).

<table>
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<tr>
<th>Gender</th>
<th>Activity Levels</th>
<th>Screen Time</th>
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Conclusions

Objective: Examine changes in student self-reported mild (MPA), moderate (MoPA), and strenuous (SPA) physical activity (PA) and screen time (ST) as part of the Fuel for Fun (FFF) intervention.

Screen Time

4th graders report more physical activity in May than in October; this increase is maintained through the summer to September of the following school year.

Screen time is greater for boys than girls, for overweight/obese than normal weight students.

In general, SPARK did not significantly impact activity levels of these already highly active 4th graders compared to controls, who were also highly active. Two non-significant changes merit notice:

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Analyses are ongoing to compare activity changes to Fuel for Fun outcomes.