INTRODUCTION

• Regular physical activity is important for energy-balance in children.
• COVID-19 affected how people live, work, study, travel, and play.
• Previous evidence on physical activity during COVID-19:
  - Cross-sectional studies
  - Self-report measures
  - Outside of US

AIMS

1. To identify change trajectories of device-measured physical activity and sedentary time from pre-COVID-19 to during COVID-19 in school-aged children in the US.
2. To examine the socio-ecological factors associated with changes in movement behaviors.

METHODS

• Design: Part of STREETS 5-year natural experiment
  - Longitudinal study design with two time points:
    • Time 1: Sept 2019-Feb 2020 (Pre-COVID-19)
    • Time 2: October 2020-March 2021 (During COVID-19)
• Population Sample: Cohort of school-age children (ages 8-11)
• Measures:
  - GT3X accelerometers using Evenson cut points to measure primary outcomes of:
    • Mean daily minutes of moderate-to-vigorous physical activity (MVPA)
    • Mean daily hours sedentary time
  - Socio-ecological predictors: individual, family, social, organizational, neighborhood
• Data analysis methods:
  - Descriptive statistics
  - Latent class linear mixed models (Aim 1)
  - Logistic regression models (Aim 2)

RESULTS

Table 1. Number of participants with valid physical activity data at both time points

<table>
<thead>
<tr>
<th>Gender</th>
<th>Valid Physical Activity Data (n=168)</th>
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</thead>
<tbody>
<tr>
<td>Female</td>
<td>56% (n=94)</td>
</tr>
<tr>
<td>Male</td>
<td>44% (n=74)</td>
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</tbody>
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Figure 1. Physical Activity Trajectories

- Average age at baseline in years: 9

- Average daily MVPA changes:
  - Decrease MVPA group: -11.10 minutes
  - Maintain High MVPA: -1.66 minutes

Figure 2. Sedentary Behavior Trajectories

- Average daily ST changes:
  - Moderate increase ST: 0.95 hours
  - Steep increase ST: 3.40 hours
  - Decrease ST: -0.75 hours

CONCLUSIONS & NEXT STEPS

- Significant declines in physical activity and increases in sedentary time during the COVID-19 pandemic when compared to pre-COVID-19 time period.
- The majority of children in this study were categorized in the ‘decreasing MVPA’ and ‘increasing sedentary time’ groups.
- Previous evidence yearly relative change in minutes of daily MVPA from age 3 to 18 was -3.4%. We found a mean yearly relative change in minutes of daily MVPA of -17.0%.

ACKNOWLEDGEMENTS & REFERENCES

References

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