Screen Time and Physical Activity Patterns Amongst Preschoolers from Rural, Underserved Communities

Alyssa Leib, BA1, Nan Zeng, PhD1,2, Susan L. Johnson, PhD1,3, Laura Bellows, PhD, MPH, RD1,4
1 Colorado State University, 2 University of New Mexico, 3 University of Colorado Anschutz Medical Campus, 4 Cornell University

INTRODUCTION

BACKGROUND

• High levels of screen time and low levels of physical activity (PA) are associated with childhood obesity.
• Current recommendations for preschoolers are 60 minutes or less of daily screen time1 and at least 180 minutes of daily PA, including 60 minutes of moderate-to-vigorous PA (MVPA).2,3
• The home environment, including the physical environment and parent attributes, may impact screen time and PA among children.

Study Objective:
To examine whether screen time and PA levels of preschoolers relate to home environment and parental attributes.

METHODS

SAMPLE

• The HEROs (Healthy EnviROnments) study is a technology-based, interactive intervention to promote healthy eating and PA among preschoolers in rural Colorado from low-income families.

MEASURES

• Data describing the home environment were collected at baseline (Fall 2019 - Winter 2020), including parent and child demographics, anthropometrics, screen time, home electronic and PA equipment availability and access.
• Accelerometers were used to collect 7 days of objective MVPA and sedentary time for children and parents.

DATA ANALYSIS

• Descriptive statistics were computed, and independent samples t-tests were used to compare the home environment of children who met screen time recommendations with those that did not (SPSS for Windows, v26).

RESULTS

• Complete data were collected for 32 parent-child dyads.

Table 1. Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Caregivers</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers (%)</td>
<td>97</td>
<td>-</td>
</tr>
<tr>
<td>Families with low-income (%)</td>
<td>67</td>
<td>-</td>
</tr>
<tr>
<td>Hispanic (%)</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>BMI, mean (SD)</td>
<td>32.5 (8.8)</td>
<td>0.45 (1.16)*</td>
</tr>
<tr>
<td>MVPA, min, mean (SD)</td>
<td>29.4 (32.9)</td>
<td>13.3 (7.6)</td>
</tr>
<tr>
<td>Sedentary time, min., mean (SD)</td>
<td>685.2 (113.9)</td>
<td>451.7 (42.1)</td>
</tr>
<tr>
<td>Screen time, min, mean (SD)</td>
<td>122.0 (76.4)</td>
<td>97.8 (95.8)</td>
</tr>
<tr>
<td>PA equipment available, #, mean (SD)</td>
<td>-</td>
<td>9.9 (3.5)</td>
</tr>
<tr>
<td>Screens in bedroom, #, mean (SD)</td>
<td>-</td>
<td>0.7 (1.1)</td>
</tr>
</tbody>
</table>

*BMI Z-scores

COMPLIANCE WITH SCREEN TIME AND MVPA RECOMMENDATIONS

Screen Time

60.6% of children exceeded screen time recommendations
97.8 ± 95.8 min

Physical Activity

Children had low levels of MVPA (13.3 ± 7.5 min) and none met MVPA recommendations (max = 31.8 min)

Children fail to meet recommendations for physical activity and exceed recommendations for screen time.

DISCUSSION

• Preschoolers from rural Colorado fall short of recommendations for physical activity and fail to meet recommendations to limit screen time.
• Because parent education was positively associated with meeting screen time recommendations, interventions targeting screen time may benefit from tailoring to the education level of the audience.
• Given children’s high engagement with screen media, future intervention efforts using digital strategies to increase PA could be undertaken.

REFERENCES

3. Department of Health & Social Care. UK Chief Medical Officers’ Physical Activity Guidelines.