



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

Alyssa Leib, BA¹, Nan Zeng, PhD^{1,2}, Susan L. Johnson, PhD^{1,3}, Laura Bellows, PhD, MPH, RD^{1,4}

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

DEMOGRAPHICS

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

Table 1. Participant Characteristics

| | Caregivers | Children |
|--------------------------------------|---------------|--------------|
| Mothers (%) | 97 | - |
| Families with low-income (%) | 67 | - |
| Hispanic (%) | 39 | 39 |
| BMI, mean (SD) | 32.5 (6.8) | 0.45 (1.16)* |
| MVPA, min, mean (SD) | 29.4 (32.9) | 13.3 (7.6) |
| Sedentary time, min, mean (SD) | 685.2 (113.9) | 451.7 (42.1) |
| Screen time, min, mean (SD) | 122.0 (76.4) | 97.8 (95.8) |
| PA equipment available, #, mean (SD) | - | 9.9 (3.5) |
| Screens in bedroom, #, mean (SD) | - | 0.7 (1.1) |

*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.

RESULTS (CONT.)

COMPARISON OF CHILDREN WHO MET SCREEN TIME RECOMMENDATIONS VS. THOSE WHO DID NOT

- Parents of children who met screen time recommendations were more likely to have a post-high school education ($t = 3.063, p = 0.005$) than those who did not meet recommendations.
- No differences were noted between children who met screen time recommendations and those who did not in child or parent body mass index, MVPA, or sedentary time; availability of PA equipment; number or types of screens children had access to; or parent 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

1. American Academy of Pediatrics Council on Communications and Media. Media and young minds. *Pediatrics*. 2016;138(5):e20162591.
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3. Department of Health & Social Care. UK Chief Medical Officers' Physical Activity Guidelines.