Title: Impact of the COVID-19 Pandemic on Health Behaviors of Youth with Overweight/Obesity

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Background: Unprecedented disruptions during the COVID-19 pandemic are adversely impacting health behaviors and psychological well-being. Children with overweight/obesity may be particularly vulnerable.

Methods: We developed a survey to assess the impact of the COVID-19 pandemic on weight-related health behaviors and social determinants of health among youth with overweight/obesity. We surveyed caregivers of 2-17 year-olds with BMI ≥85th percentile who received primary or endocrine care in the pre-pandemic period (September 2019 – early March 2020) to assess weight-related behaviors (physical activity, sleep, screen time, diet) and social determinants of health (food insecurity, income change, perceived stress) both prior to and during the pandemic (August – October 2020). Adolescents ≥13 years were also invited to participate. We analyzed changes in continuous variables using paired t-tests, and categorical variables with McNemar’s and Fisher’s exact tests.

Results: A total of 129 caregivers (78 of children 2-12 years and 51 of adolescents) and 34 adolescents completed surveys. Mean (SD) age of youth was 10.9 (4.3) years, 60% were female, 32% had severe obesity (Class 2/3), 57% had public health insurance, 29% were non-Hispanic Black, and 19% Hispanic/Latinx. Compared with pre-pandemic, caregivers reported that youth decreased their moderate/vigorous physical activity by 87.4 ± 205.7 minutes/week (p<0.001) and increased their recreational screen time by 2.5 ± 2.1 hours/day (p<0.001). Fewer youth had a regular bedtime (pre: 89%, during: 44%, p<0.001) and more ate most meals with TV (pre: 16%, during: 36%, p <0.001). Adolescents self-reported similar changes in behaviors, but only changes in regular bedtime, screen time, and TV with meals were statistically significant (p<0.01). Food insecurity increased from 27% to 43% (p < 0.001) and 45% reported reduced household income. The proportion of caregivers with moderate/high Perceived Stress Scale (PSS) scores increased from 43% to 64% (p <0.001).

Conclusion: Our results suggest alarming changes in weight-related health behaviors among youth affected by overweight/obesity. Adverse changes in social determinants of health, alongside these behavioral changes, may increase the prevalence of obesity-related comorbidities and further exacerbate health disparities. Effective interventions that consider families’ heightened psychosocial stressors are critically needed.

Word Count: 317