

Effects of COVID-19 Lockdown on Lifestyle Behaviors in Children with Obesity Living in Verona, Italy: A Longitudinal Study



Lockdown creates a uniquely obesogenic environment in that consumption of unhealthy foods and beverages is coupled with excess screen time and limited opportunities for physical activity.

Provisioning of fresh foods in the home and structured opportunities for exercise should be encouraged.

Background Facts:

Children and adolescents gain more weight during summer vacations than during the structured school year. During summer break, children eat fewer vegetables, consume more sugar, and watch more TV; however, they are more physically active outside in summer. COVID-19 lockdown may therefore promote an obesogenic environment.

Study Title:

Effects of COVID-19 Lockdown on Lifestyle Behaviors in Children with Obesity, Living in Verona, Italy: A Longitudinal Study

Hypothesis / Objectives:

To determine if youths with obesity who are confined to their homes during the COVID-19 pandemic will display unfavorable trends in lifestyle behaviors.

Study Design:

41 children and adolescents with obesity (defined as BMI > 25) participating in a longitudinal observational study located in Verona, Italy

- Mean age 13 ± 3.1 years (range 6 - 18 years); 22 males and 19 females
- Mean BMI 30.2 ± 4.1

Outcome Measures:

Reported changes in lifestyle metrics such as diet, activity, and sleep behaviors from baseline to 3-weeks into COVID-19 lockdown

Summary of Findings:

- No changes were reported in vegetable intake;
- There was a documented trend towards increased fruit

intake during the lockdown ($p=0.055$);

- Potato chip, red meat, and sugar-sweetened beverage intakes increased significantly during the lockdown (p -value range, 0.005 to <0.001);
- Time spent on physical activities decreased by 2.3 ± 4.6 hours/week ($p=0.003$);
- Sleep time increased by 0.65 ± 1.29 hours/day ($p=0.003$);
- Non-academic screen time increased by 4.85 ± 2.4 hours/day ($p<0.001$)

Conclusions:

1. Recognizing the collateral effects of lockdown on obesity-promoting lifestyle behaviors is critical to youth obesity mitigation strategies.

2. While health-promoting behaviors such as increased fruit intake and greater sleep may reduce the influences of an obesogenic environment, these positive outcomes were likely offset by obesity promoting behaviors such as:

- Reduced physical activity
- Excess consumption of calorie-dense and obesogenic foods
- Increased screen time



Associated Indicators

In Italian youth with BMI>25, lockdown was associated with:

- Significantly increased potato chip, red meat, and sugar-sweetened beverage consumption
- An average decrease in physical activities of 2.3 hours/week
- An average increase in sleep duration of 0.65 hours/day
- An average increase in non-academic screen time of 4.85 hours/day

Study Limitations:

- Small sample size
- Population restricted to children and adolescents, therefore the study lacks generalizability to the full age spectrum
- Geographic restriction that might extend poorly to populations in other countries
- Short duration of follow-up with reported outcome measures assessed at 3 weeks (ascertainment bias against outcomes that may emerge only after more prolonged follow-up)
- Participants were obese to begin with, thus, study architecture unable to address the extent of environmental obesogenicity created by lockdown

Implications for LM Practice:

Lockdown creates an overall obesity-promoting environment for children and adolescents already affected by overweight and obesity. Strategies to mitigate these effects should be adopted by parents, caregivers, schools, and governments, and may include structured opportunities for exercise and provisioning of fresh foods.

Single Overriding Communication Objective:

COVID-19 lockdown promotes unhealthy behaviors in overweight youth including excess screen time and sugar consumption, and decreased physical activity.

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