

# IMPACT OF COVID-19 LOCKDOWN MEASURES ON LIFESTYLE BEHAVIORS IN CHILDREN AND ADOLESCENTS WITH SEVERE OBESITY

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## 1. BACKGROUND

COVID-19 related lockdown measures have large impact on lifestyle behaviors and well-being of children (0-18y) from the general population

## 2. AIM

To investigate impact of COVID-19 lockdown in children (0-18y) with severe obesity on



Eating styles and behaviors



Physical activity (PA)



Health-related Quality of Life (HRQoL)

## 3. METHODS

We invited all (n=90) children under treatment at our academic obesity center, for this mixed-methods study

- 83 families completed questionnaires and 75 were interviewed
- Mean age: 11.5 ± 4.6 years
- Mean BMI SD score: 3.8 ± 1.0 (severe obesity)

### QUANTITATIVE ANALYSES

 Dutch Eating Behavior Questionnaire – Child (scores 0-100)

 Dutch PA Questionnaire: weekly PA, screen time

 Pediatric Quality of Life Inventory (PedsQL, scores 0-100)

→ Collected pre-pandemic (2019) & during first lockdown (April 2020)

### QUALITATIVE ANALYSES

- Semi-structured telephone interviews lasting 20-30 minutes
- Data analyzed according to Grounded Theory

## 4. RESULTS

On group level:

Outcome during lockdown	Mean	Δ	p-value
Restrained eating score	63.4 ± 33.8	+3.9	0.39
Emotional eating score	67.2 ± 32.9	+9.2	0.11
External eating score	68.5 ± 28.4	+0.3	0.57
<b>Weekly PA time</b>	<b>7.2 ± 7.6 hr</b>	<b>-1.9 hr</b>	<b>0.02</b>
Weekly screen time	18.0 ± 11.7 hr	-0.2 hr	0.65
PedsQL total score	65.4 ± 18.6	+3.0	0.51

### DATA-ANALYSIS SUBGROUPS

#### EATING STYLES AND BEHAVIORS

- 26%** ≥10 points increase in emotional eating  
→ Older children, pre-existent psychosocial problems
- 24%** ≥10 points increase in external eating  
→ Younger children, signs of insatiable behavior
- 28%** Increased demand for food  
→ Attributed to loss of daily structure, increased stress
- 20%** No change in eating behaviors  
→ Attributed to pre-pandemic strict eating schemes



#### PHYSICAL ACTIVITY

- 51%** Decrease in PA time to mean ≤ 2hr/wk  
→ Older children, not fulfilling WHO PA criteria pre-pandemic



#### HEALTH-RELATED QUALITY OF LIFE

- 42%** Clinically relevant low PedsQL total score (<p60)  
→ Pre-existent psychosocial problems



PedsQL total score negatively related to:

- Emotional eating score (β=-0.28, p<0.001)
- External eating score (β=-0.29, p=0.002)
- NOT related to PA or screen time

## 5. CONCLUSION

Differential response profiles to COVID-19 measures

On group level:

- Dramatic decline in physical activity (51% of children ≤ 2hrs/wk during lockdown)
- Unchanged screen time, eating styles, HRQoL
- Pre-pandemic strict schedules seemed protective

A substantial minority of families reported deteriorated eating behavior and emotional wellbeing

## WHO ARE MOST AT RISK?



- Young children: increased external eating
- Older children: increased emotional eating



- Older children: decreased physical activity
- Not fulfilling WHO PA criteria pre-pandemic
- COVID-19 related anxiety



- Pre-existent psychosocial problems
- High external/emotional eating

**THESE SUBGROUPS ASK FOR EXTRA SUPPORT TO MINIMIZE IMPACT OF COVID-19 LOCKDOWN MEASURES**