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The Impact of the COVID-19 Pandemic on Pediatric Obesity in School-Aged Children

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The Impact of the COVID-19 Pandemic on Pediatric Obesity in School-Aged Children

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Introduction

The prevalence of childhood obesity in those aged 2-19 in the United States was 19.3% in 2017-2018.¹ Childhood obesity is a major health concern with growing rates of incidence. Being overweight or obese put children at risk for developing several chronic conditions such as coronary artery disease, type 2 diabetes mellitus, hypertension and asthma at a younger age.² Studies have shown that higher BMI numbers in childhood added an increased risk of being obese as an adult.³

The pathophysiology of developing obesity includes several complex factors ranging from nutrition, physical activity, genetic background and lifestyle preferences. Amongst children, nutrition and activity play an important role. The majority of physical activity related to children is tied to after-school sports and other training. Since all non-essential activities were cancelled during the COVID-19 pandemic, this led to a decrease in physical activity amongst school-aged children.

The aim of this study was to identify the impact of the COVID-19 pandemic on physical activity and its role in obesity rates.

Methods

- Retrospective chart review (2,128 school-aged children ages 6-18 years old) to compare body mass index (BMI) one year prior to the pandemic (defined by March 1, 2019 to February 30, 2020) versus during the pandemic (defined by March 1, 2020 to March 1, 2021)
- 18 year old age group excluded due to insufficient data (n=2)
- 249 parents/guardians were surveyed

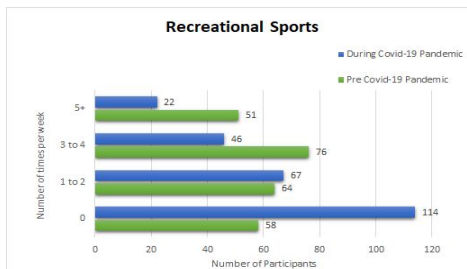


Figure 1. Comparison of Recreational Sports During the Covid-19 Pandemic and Before

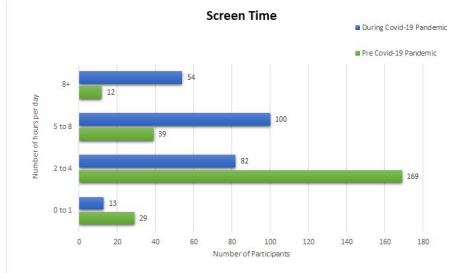


Figure 3. Comparison of Screen Time During the Covid-19 Pandemic and Before

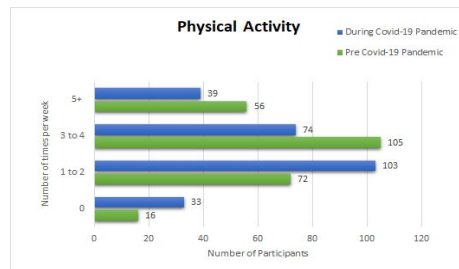


Figure 2. Comparison of Physical Activity During the Covid-19 Pandemic and Before

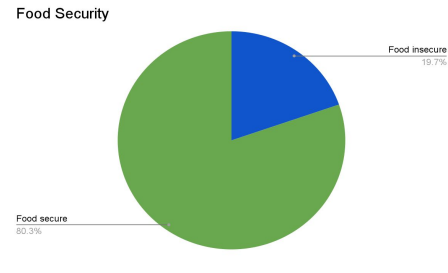


Figure 4. Percentage of Parents/Guardians Reporting Food Insecurity

Results

- 42% decrease in recreational sports activity from an average of 2.4 times per week pre-pandemic to 1.4 times per week during the pandemic (Fig 1) and 20% decrease in physical activity (i.e. walking, biking) (Fig 2)
- 52% increase in screen time from an average of 3.6 hours/day to 5.5 hours/day (Fig 3)
- 49 out of the 249 participants (19%) admitted to struggling to some degree in providing their child with well balanced meals (Fig 4)
- 155 out of 249 participants (62%) agreed that physical activity is extremely important for their child to maintain a healthy lifestyle
- Increase in BMI after the pandemic seen in age groups (age 6 p-value = 0.0048, age 7 p-value = 2.81E-10, age 8 p-value = 2.6E-15, age 10 p-value = 2.02E-8, age 12 p-value = 1.3E-24, and age 15 p-value = 2.29E-12)
- No significant increase in BMI in age groups (9, 11, 13,14,16,17)

Conclusions

- Overall, there was a decrease in physical activity, recreational sports with an increase in screen time seen across most age groups.
- Some data showed increase in activity, which can be attributed to more outdoor activities towards the end of the pandemic.
- There was a significant increase in BMI for ages 6,7,8,10,12,15.
- Overall, no significant increase in BMI in all ages.

Future Work

- Look at other health indicators like blood pressure readings to get a better understanding of the impact of the pandemic.
- Develop public health policies that will aid in pediatric health and development targeted towards school age children in the era of virtual education.

Acknowledgements

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