Neighborhood Greenspace and Changes in Pediatric Obesity During COVID-19

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Pediatric obesity rates increased during the COVID-19 pandemic. This study examined associations of neighborhood greenspace with changes in pediatric obesity during the pandemic. Electronic health record data from a large pediatric primary care network were extracted to create a retrospective cohort of patients aged 2?17 years with a visit in each of 2 periods: June?December 2019 (pre-pandemic) and June?December 2020 (pandemic). Multivariable longitudinal generalized estimating equations Poisson regression estimated associations of census tract-level normalized difference vegetation index (NDVI) with (1) changes in obesity risk during the pandemic and (2) risk of new-onset obesity among children who were not obese pre-pandemic. Analyses were conducted between November 2021 and May 2022. Among 81,418 children (mean age: 8.4 years, 18% Black), the percentage obese increased by 3.2% during the pandemic. Children in NDVI quartiles 2?4 had smaller increases in obesity risk during the pandemic compared to quartile 1 (risk ratio=0.96, 95% CI=0.93, 0.99; quartile 3 risk ratio=0.95; 95% CI=0.91, 0.98; quartile 4 risk ratio=0.95, 95% CI=0.92, 0.99). Among the subset who were not obese pre-pandemic, children in NDVI quartiles 3?4 had lower risk of new-onset obesity during the pandemic (quartile 3 risk ratio=0.82, 95% CI=0.71, 0.95; quartile 4 risk ratio=0.73, 95% CI=0.62, 0.85). Higher NDVI was associated with smaller increases in obesity risk and lower risk of new-onset obesity among children in urban and suburban areas, but results were in the opposite direction for children in rural areas. Children living in greener neighborhoods experienced smaller increases in obesity during the pandemic than children in less green neighborhoods, although findings differed by urbanicity.

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