

Associations of Social Determinants of Health and Childhood Obesity. A cross-sectional analysis of the 2021 National Survey of Children's Health



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BACKGROUND

- Childhood obesity is a growing public health problem with affected children being more likely to maintain obesity into adulthood and develop chronic diseases at a younger age.¹
- Social determinants of health (SDOH) are known to influence overall health.²
- One component of SDOH is socioeconomic status (SES) in which children in a low SES household have shown to be more likely to experience being overweight and have poor health outcomes.³
- Childhood obesity can have profound effects on overall health into adulthood, so research into potential associations with SDOH is warranted.

OBJECTIVE

- Our study objective was to use the National Survey of Children's Health (NSCH) 2021 data to determine current associations between childhood obesity and SDOH.

METHODS

- We conducted a cross-sectional analysis of the 2021 NSCH to extract data from questions related to SDOH domains.
- We extracted sociodemographic variables to use as controls and constructed bivariate and multivariable logistic regression models to determine associations, via odds ratios, between SDOH and childhood obesity.

RESULTS

- Children identified as having obesity were significantly more likely to experience food insecurity when compared to non-obese children (AOR = 1.39; 95% CI: 1.13-1.17; Table 1).
- Children identified as having obesity were more likely than non-obese children to experience SDOH in all domains (Table 1).

Table 1. Prevalence and associations between a child having obesity and experiencing SDOH from 2021 National Survey of Children's Health.

BMI Classification	Yes n, (%)	Binary Model OR (95% CI)	Adjusted Model ^a AOR (95% CI)
During the past 12 months, did this child receive any kind of medical care?			
BMI < 95th percentile	12551 (69.62)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	2122 (65.79)	0.84 (0.69-1.03)	1.09 (0.88-1.35)
During the past 12 months, was there a time when this child needed healthcare but it was not received?			
BMI < 95th percentile	739 (4.07)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	195 (6.32)	1.59 (1.07-2.38)	1.41 (0.90-2.20)
Since this child was born, has it frequently been hard to cover the basics on your family's income?			
BMI < 95th percentile	1659 (11.26)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	564 (17.46)	1.67 (1.32-2.10)	1.22 (0.94-1.57)
Has your household had difficulty with being able to afford food in the last 12 months?			
BMI < 95th percentile	3744 (26.27)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	1172 (40.18)	1.88 (1.57-2.27)	1.39 (1.13-1.70)
To what extent do you agree with this statement? This child is safe in our neighborhood?			
BMI < 95th percentile	461 (3.90)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	144 (6.14)	1.61 (1.01-2.58)	1.16 (0.73-1.85)
To what extent do you agree with this statement? This child is safe at school?			
BMI < 95th percentile	411 (2.37)	1 (Ref)	1 (Ref)
BMI ≥ 95th percentile	100 (2.58)	1.09 (0.72-1.66)	0.9 (0.57-1.41)

a. model controlled for race/ethnicity, household income (%FPL), parental education, and child sex. b. Ability to afford household basics answers were collapsed into binary variables of *Not difficult* and *Difficult*. c. Ability to afford food answered were collapsed into binary variables of *Food secure* and *Food insecure*. d. Neighborhood and school safety answers were both collapsed into binary variables as *Safe* and *Unsafe*.

CONCLUSION

- Improving policies for programs such as SNAP as well as addressing lack of access to nutritious foods, especially within food deserts, may help alleviate some food insecurity.
- Improving access to adequate amounts of nutritious foods for children and their families is critical in addressing childhood obesity and thus, decreasing risk of chronic disease and poor long-term health outcomes.

SIGNIFICANCE OF FINDINGS

- Early experiences with food insecurity may be a driver of childhood obesity and associated poor health outcomes.
- Addressing barriers to food and increasing access to supplemental food programs is a critical step in addressing childhood obesity.
- Among low-income families who may not qualify for governmental nutrition assistance programs, food pantries and food banks play a critical role in providing supplemental nutrition and helping to prevent childhood obesity.

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