

Hypotheses

- ◇ H₁: Children with higher BMI z-score or obesity experience higher asthma-related outcomes
- ◇ H₁₋₁: Female children with higher zBMI or obesity experience more asthma-related outcomes than their male counterparts
- ◇ H₁₋₂: The younger the children with higher zBMI or obesity, the higher the incidence of asthma-related outcomes
- ◇ H₁₋₃: Asthma-related outcomes differ between children with higher zBMI or obesity depending on their race

Methods

- ◇ Cross-sectional data on 6,770 children ages 12-17
- ◇ 2008-2009 National Health Interview Survey (NHIS)¹⁵⁻¹⁶
- ◇ Primary independent variables included BMI z-scores and categories
- ◇ Outcomes included whether the children ever had asthma, still have asthma, have had an asthma attack in the past 12 months, and have had visit to ER due to asthma in the past 12 months
- ◇ Logistic regression was run while controlling for region, sex, age, race and ethnicity
- ◇ Marginal effects of changes in covariates on outcome variables were presented
- ◇ Stata command *inteff* was used to compute the correct statistical significance of interaction terms

DOES OBESITY WORSEN ASTHMA-RELATED OUTCOMES IN US CHILDREN?

Results

Logit Models [†]	Ever Been Told Sample Children Have Asthma		Still Have Asthma		Have Had an Asthma Attack (Past 12 Months)		Have Had Visit to ER Due to Asthma (Past 12 Months)	
	Odds Ratio	(95% CI)	Odds Ratio	(95% CI)	Odds Ratio	(95% CI)	Odds Ratio	(95% CI)
BMI z- score	1.18**	(1.10, 1.27)	1.18***	(1.08, 1.30)	1.20***	(1.05, 1.36)	1.22	(0.90, 1.64)
Obese [Ref= Normal Wt.]	1.72***	(1.41, 2.09)	1.77***	(1.42, 2.21)	1.86***	(1.46, 2.37)	2.35***	(1.51, 3.65)

[†] All models were adjusted for region, sex, age, race and ethnicity; *** p < 0.01, ** p < 0.05, * p < 0.1

- ◇ Obese children, on average, showed greater odds of ever having asthma (marginal effect= 7 percentage points increase; p<0.001), still having asthma (marginal effect= 5 percentage points increase; p<0.001), and having had an asthma attack in the past 12 months (marginal effect= 3 percentage points increase; p<0.001), compared to normal-weight children
- ◇ A robustness check using continuous z-scores showed similar results
- ◇ The effect of obesity on still having asthma was elevated among females as compared to males (average logit interaction effect = .030, s.e. = .015, z = 2.17)

Conclusions

- ◇ Children with higher BMI or obesity are more likely to experience worse asthma-related outcomes
- ◇ The effect of obesity on the probability of still having asthma is significantly modified by gender

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