

Are city features related to obesity in preschool children? Evidence from Latin America

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Key messages

- Higher risk of preschool overweight/obesity (OW/OB) is associated with lower distance between urban patches, lower educational attainment and better living conditions in Latin American cities.
- The association between urban features and OW/OB in preschool children has implications for health over the life course.
- Local policies oriented to improve urban planning and living conditions should be considered as part of the strategies to reduce OW/OB at early stages in life.

Introduction

Urbanization shapes health through pathways involving cities' built and social environment features.

Latin America (LA) is currently facing rapid urbanization and increases in childhood obesity.

Little is known about how cities can contribute to the risk of childhood obesity, particularly at early stages of life.

Objectives

- To describe the prevalence of preschool children OW/OB across countries and cities in Latin America.
- To examine associations between features of the urban built and social environment and preschool OW/OB prevalence.

Methods

Study design and sample: Cross-sectional analysis of 18,933 children aged 1-5 years who lived in 519 sub-cities of 158 cities with 100,000 or more residents in 5 countries in LA (Chile, Colombia, El Salvador, Mexico, and Peru).

Outcome: Overweight/obesity (a z-score for weight-for-length/height > 2)

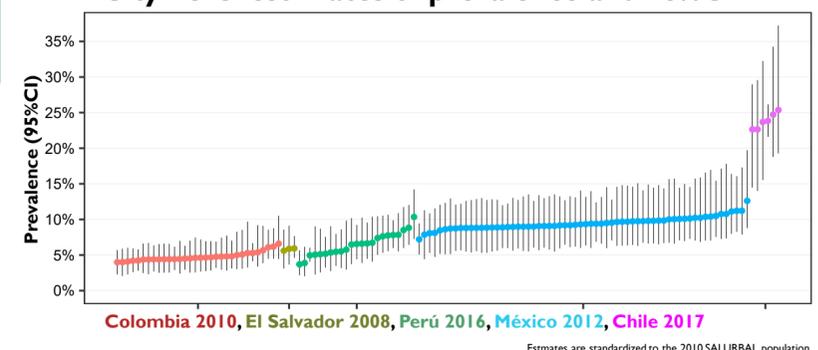
Exposure: city features of the social (living conditions, service provision and educational attainment) and built environment (fragmentation, isolation, presence of mass transit, population density, intersection density and percent greenness).

Statistical approach: multilevel logistic regression examining associations between built and social environmental features and OW/OB at the city and sub-city levels, adjusting for individual-level characteristics (age, sex, and head of household education).

Results

Prevalence of preschool overweight/obesity varied substantially between and within countries

Fig 1. Overweight and obesity in children aged 1–5 years
City-level estimates of prevalence and 95%CI



Lower odds of OW/OB were associated with:

- higher distance between the urban patches isolation at the city-level.
- better educational attainment at the sub-city level.

Higher odds of OW/OB were associated with better living conditions at the sub-city level

Table 1. Association between the built and social environment with preschool OW/OB in 158 Latin American cities

	Contrast (SD)	OR (95%CI)
City level variables		
Fragmentation [Patch density (n/100ha)]	0.28	1.09 (0.94, 1.26)
Isolation [mean distance [m] to the nearest urban patch]	39.67	0.90 (0.82, 0.99)
Mass transit presence	No	1.05 (0.77, 1.43)
Sub-city level variables		
Built environment		
Population density [n/km ²]	5238.42	0.99 (0.88, 1.11)
Intersection density [n/km ²]	46.52	1.07 (0.97, 1.19)
Percent of greenness [%]	35.53	0.99 (0.88, 1.12)
Social environment		
Living conditions score	1.76	1.15 (1.00, 1.31)
Service provision score	1.39	0.91 (0.81, 1.01)
Education attainment score	1.73	0.86 (0.76, 0.97)

Model adjusted for individual variables: age in months, sex, and head of household education, and country fixed effects.

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Know more about the study here