Does Neighborhood Access to Green Space Influence the Prevalence of Childhood Obesity in Cities Globally? A Systematic Review

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GW | Public Health

OBJECTIVE

The objective of this study was to the answer the question:

"Does neighborhood access to green space influence the prevalence of childhood obesity in cities globally?"

BACKGROUND

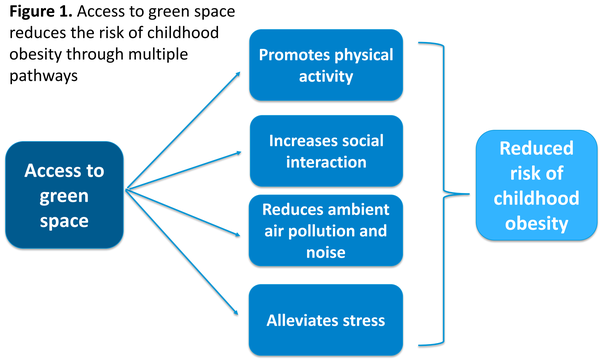
Obesity has become global public health issue.

Being overweight or obese puts individuals at risk for developing a number of chronic diseases such as diabetes and heart disease.

Increasing accessibility to greenspaces, such as parks, can encourage and create opportunities for physical activity, which is an important aspect of combating obesity.

In addition to promoting physical activity, a number of reviews have found significant associations between greenspace and higher levels of social interaction, which can lower the risk of obesity Furthermore, greenspaces have been shown to alleviate stress, as well as ambient pollution and noise, all of which can reduce the risk of childhood obesity (Figure 1).

Figure 1. Access to green space reduces the risk of childhood obesity through multiple pathways



METHODS

I conducted a review following the Navigation Guide, a systematic review methodology to transparently evaluate the quality of individual studies, as well as the strength of the overall body of evidence. Using this methodology, the following steps were completed**: 1) Specify the study question, 2) Select the evidence, 3) Rate the quality and strength of evidence**.

The "Population", "Exposure," "Comparator," and "Outcomes" (PECO) statement is briefly outlined below.

Population. Children living in cities globally

Exposure. Neighborhoods with access to green space

Comparator. Neighborhoods with less access to green space

Outcomes. Obesity and/or BMI.

Data sources: I searched the databases SCOPUS and PubMed using the search terms. All the included studies were published in the last five years.

RESULTS

Table 1. Summary of findings, quality of evidence and strength of evidence for urban green space and childhood obesity.

Rating of Quality of Evidence	
Category	**Downgrades**
Risk of Bias	-1
Indirectness	0
Inconsistency	0
Imprecision	0
Publication Bias	0
	Upgrades
Large magnitude of effect	0
Confounding Minimizes Effect	+1
Overall Quality of Evidence	**Moderate**

Rating of Strength of Evidence	
Quality of the Body of Evidence	Moderate
Direction of Effect Estimate	A greater proximity to green space was associated with lower BMI
Confidence in Effect Estimate	High confidence in direction of effect estimate
Other Attributes	None
Overall Strength of Evidence	**Limited**

Table 2: Summary of risk of bias judgements designated by low, probably low risk, probably high risk and high risk for each individual study.

One downgrading factor (-1) and one upgrading factor (+1) for the quality of evidence across studies (Table 1) . The overall quality of the human evidence was given a rating of **"moderate"** The risk of bias across all studies was determined to be **"probably high"** due to confounding bias. Five of eight studies were also at a risk of high bias for exposure (Table 2)

CONCLUSIONS

Based on the analysis and interpretation of the evidence, it was concluded that there is a **slight positive association** between exposure to green space and the outcome of childhood obesity. However, since a majority of the studies have a cross-sectional design, there was a **limited ability for a causal inference** on the associations that were evaluated. The overall quality of the human evidence was given a rating of "**moderate"**.

Further studies are necessary to confirm the results and minimize the effect of confounders such as physical activity and diet.

PAPERS REVIEWED

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