Active Living Research
Using Evidence to Prevent Childhood Obesity and Create Active Communities

ARTICLE SUMMARY
February 2013

Using Google Street View to Assess Environments for Physical Activity

Introduction

We investigated the inter-rater reliability (i.e. how similar two different observers rate a set of environmental features) of the Active Neighborhood Checklist (i.e. the Checklist) to assess built environments (i.e. street characteristics, public transportation, sidewalks, bike lanes) derived from interpretation of Google street view imagery. The Checklist is an instrument used to rate environments for how well they do or do not support walking, biking, and other forms of physical activity.

Key Findings

Using Google Street View has inter-rater reliability comparable to traditional observational field audits. However, the reliability was lowest when rating streets for parking, tree shade, the presence of litter, sidewalk width, and curb cuts. Reliability was the highest when assessing the presence of sidewalks, buffers, commercial destinations (e.g. shops), recreational facilities, and various street characteristics (e.g. crosswalks), and shoulder characteristics.

Methods

This study was conducted in suburban and urban areas in Indianapolis, Ind. and St. Louis, Mo. We selected 288 street segments in both cities using a geographically stratified sampling design. We used GIS data to classify the socioeconomic status and racial composition (i.e. African American and White) of census block groups. Two auditors independently assessed each street segment using Google Street View. The auditors were blinded to the results of each other and were not assigned to streets in their own city.

Implications

Our study demonstrates that using Google Street View is a reliable way to assess the built environment. Using Google Street View offers a viable alternative to field audits that can improve efficiency and expand the geographic and temporal scope of, and reduce resources required for, conducting audits. The environmental features that demonstrated the least reliability should be assessed with caution. These characteristics were more difficult to view on Google Street View imagery or could be blocked from view by parked cars. Also, the rating of items related to environmental quality (e.g. amount of litter) is influenced by the perceptions of individual auditors and thus had lower inter-rater reliability.

SOURCE

Kelly, C.M., et al. (2013). Using Google Street View to Audit the Built Environment: Inter-rater Reliability Results. Annals of Behavioral Medicine, 45(1Suppl): S108-S112.

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