

Exploring the Relationship of Outdoor Recreational Resources to Physical Inactivity, Obesity and Diabetes for the Continental United States

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Abstract:

Background: Access to outdoor recreational resources is important for promoting healthy behavior and physical activity, which may decrease the risk of disease. To date, no study has examined the relationship between access to outdoor recreational resources (including protected lands, local/state/national parks, and recreational waters) and community health on a national scale in the United States.

Objectives: We focused on investigating the relationships between access to outdoor recreational resources and physical inactivity, obesity and diabetes.

Methods: We combined several data resources and created a national database containing recreational areas for the continental US and derived an outdoor recreation resources availability index for all counties in the continental U.S. We then examined the relationships between the recreation availability index and community health indicators, including physical inactivity, obesity, and diabetes, through regression modeling. In addition, other important social-economic factors such as household income and age were included in the model.

Results: Availability of outdoor recreational resources was significantly related to community health indicators: higher physical inactivity, obesity, and diabetes rates were all associated with lower availability of outdoor recreational resources. Availability of outdoor recreational resources alone explained 16% of the variation of self-reported physical inactivity, 17% of obesity, and 9% of the diabetes rates nationwide. If household income was added in the regression models, availability of outdoor recreational resources and household income together could explain 46% of the variation of self-reported physical inactivity, 41% of obesity, and 36% of diabetes rate nationwide. Although correlation does not denote causality, our modeling results show that an increase of 1% recreational area in a community of 250,000 people could potentially result in the following outcomes: a reduction of 250 physically inactive people, 200 less obese individuals and 50 less diabetics.

Conclusion: The highest physical inactivity, obesity, and diabetes rates occurred in communities with the lowest availability of outdoor recreational resources and the highest percentage of low income population. These results provide evidence linking availability of outdoor recreational resources to community health conditions and disease rates. Policy makers should be aware of these linkages; and they should plan for, promote and protect outdoor recreational resources in future development.

Key Words: outdoor recreational resources, community health, physical inactivity, obesity, diabetes, built environment