

# Proximity to Parks and Prevalence of Depression among Adults across North Carolina Census Tracts: An Ecological Study

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## Backgrounds

Parks and green spaces enhance mental health and provide areas for recreation and interaction. However, access to parks often varies by socio-economic status (SES), with individuals in rural areas or with low SES being particularly vulnerable. This ecological study explores how community-level access to parks correlates with the prevalence of depression in census tracts in North Carolina.

## Methods

We calculated the Euclidean distance from the centroid of 2,182 census tracts in North Carolina to the nearest park using publicly available data. The prevalence of depression among adults over 18 was sourced from the 2019 CDC Behavioral Risk Factor Surveillance System (BRFSS) and estimated by the American Community Survey. A generalized linear model was employed to examine the correlation between park proximity and the prevalence of depression, accounting for poverty levels.

## Results

Urban areas like Raleigh, Charlotte, and Greensboro showed patterns of closer distance to parks. Overall, an increase of one mile in distance from the nearest park corresponded to a 0.09% increase in the prevalence of depression within a census tract ( $p=0.0043$ ). Notably, the increase in depression prevalence was more pronounced in census tracts with a higher proportion of individuals below the poverty level ( $p=0.0044$ ).

## Conclusions

Improving access to parks through urban planning and public policy can be particularly crucial to help prevent depression and enhance mental well-being among community members, especially in impoverished areas.

## Keywords

Parks, Proximity, Depression, Ecological Study

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