

Neighborhood Walkability and Physical Activity: Results from the Health Is Power (HIP) Study

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ABSTRACT

Purpose: Health Is Power (NIH 1R01CA109403) was a longitudinal, multi-site intervention aimed to increase physical activity (PA) among community dwelling, healthy African American and Hispanic or Latina women. This study investigated the relationship between neighborhood walking environments and PA maintenance from T1 (baseline) through T2 (end of intervention) and to T3 (6-month follow-up post-intervention). **Methods:** Women (N=410, M age=45.2 years, SD=9.4, 62.7% African American) completed interviewer-administered questionnaires assessing demographics at T1 and the International PA Questionnaire (IPAQ) to assess physical activity at T1, T2 and T3. Walkability characteristics for all street segments within 800m of participants' homes were assessed using the Pedestrian Environment Data Scan (PEDS). Items included counts of buffer zones between roads and walking paths, sidewalk connections, road lanes, speed limits, traffic control devices, crossing aids, and walking amenities. A scale from 1=strongly agree to 4=strongly disagree measured perceptions of pedestrian environment attractiveness and safety. All data were aggregated to the neighborhood level for ecologic analyses. **Results:** Neighborhood buffers between roads and walking paths ranged from 0.00 to 2.40 (M=0.89, SD=0.52), sidewalk connections ranged from 0.25 to 6.59 (M=3.23, SD=1.01), road lanes ranged from 1.00 to 5.27 (M=2.59, SD=0.65), speed limit ranged from 20.00 to 50.00 (M=30.90, SD=6.14), traffic control devices ranged from 0.00 to 1.40 (M=0.65, SD=0.21), crossing aids ranged from 0.00 to 1.27 (M=0.27, SD=0.26), and walking amenities ranged from 0.00 to 1.36 (M=0.11, SD=0.20). Attractiveness and safety for walking ranged from 1.45 to 4.00 (M=2.76, SD=0.43) and from 1.56 to 4.00 (M=2.78, SD=0.44), respectively. Attractiveness and safety for cycling ranged from 1.36 to 4.00 (M=2.73, SD=0.43) and from 1.50 to 4.00 (M=2.55, SD=0.45), respectively. General linear models with repeated contrasts demonstrated that greater buffers ($F(1)=5.321$, $p=0.006$), road lanes ($F(1)=3.706$, $p=0.028$), and traffic control devices ($F(1)=3.880$, $p=0.024$) were associated with increased PA from T1 to T3. **Conclusions:** Street scale elements

of the pedestrian environment appear to influence maintenance of moderate PA and should be considered in health promotion programs and policies.

KEY WORDS: Physical activity, Neighborhood environment, Objective assessment, Minority health, Obesity