Contributions of the Built Environment to Physical Activity and Dietary Habits: Implications for Disabled Populations

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Overview

• Obesity and disabilities
• Case 1: Neighborhood streets
• Case 2: Physical activity resources
• Case 3: Fresh produce availability
• Implications and discussion
Estimated Costs of Obesity

Obesity Prevalence in Women with Mobility Impairments

8.1% of women aged 5 years and older in the US have limitations in walking and climbing stairs


www.disabilitystatistics.org
Obese + Genic = Something that creates or leads to obesity


**Ecologic Model of Obesity**

- **Forces of Change**
  - Technology, Globalization

- **Macro-Environment**
  - Policies, Institutionalized Norms, Weather

- **Micro-Environment**
  - Work, School, Home

- **Meso/Exo-Environment**
  - Travel, Social Relationships

- **Obesity**

- **Biology**
  - Genetics
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Defining Neighborhoods

- Geographic Information Systems (GIS)
- Boundaries
  - Buffers
  - Streets
  - Census geography
  - School locations

Defining Neighborhoods

- Radial buffer
- All arterials
- 25% of residentialss
- Street segments

McMillan TM, Cubbin C, Parmenter B, Medina AV, Lee RE. Neighborhood sampling: how many streets must an auditor walk? 2010, 7:20 http://www.ijbnpa.org/content/7/1/20
Pedestrian Environment Data Scan (PEDS)

• Pedestrian sidewalk connections
• Traffic speed limit
• Vehicle lanes
• Safety for walking
• Attractiveness for walking
• Safety for bicycling
• Attractiveness for bicycling

Slower posted speed limits associated with more physical activity among low income African Americans living in public housing in Houston

People who live in neighborhoods that are attractive for bicycling tend to do more physical activity

• Programs to increase physical activity are more effective in supportive neighborhoods
• More supportive neighborhoods can help reduce obesity

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As gyms per square mile increased, energy expenditure increases for low income, but not for high income women.

As gyms and parks per square mile increased in low SES neighborhoods, number of moderate physical activities increased.

Physical Activity Resource Assessment

Most common resources were parks, schools, community centers

Wide variability in resource availability

Many, many more incivilities in low SES neighborhoods

More physical activity resources of better quality may increase likelihood of meeting physical activity recommendations.

The greater the amenities and fewer the incivilities in the local physical activity resources, the lower the prevalence of obesity among residents.

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http://hhp.uh.edu/undo
Most commonly available stores were convenience and liquor stores.

Stores and Fresh Produce

Most lower SES neighborhoods had only one store that sold fresh produce.

Supermarkets and farmers markets increase access to fruits and vegetables.

Challenging to maintain healthful dietary habits depending on neighborhood of residence.

Observations & Implications

• Improvements to street scale elements that focus on a wide range of human activities may increase mobility and access, in turn contributing to physical activity

• “Walkability” may be a misnomer, and might be better termed, “accessibility” or “human user-friendliness”

• Policy approaches may improve quality of life for all residents
Thank You!

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