Methods

* Cross-sectional phone survey on 21567 adults living in 9 small towns located in micropolitan statistical areas in 3 distinct geographic regions of the US

Outcome/PEV

* BMI – continuous
* Perceptive & Objective neighborhood environment

Trees in neighborhoods

Unattended dog in neighborhoods

Grocery store within 20 min

Fast food witin 20 min

Trail, path, running track within 20 min

Park, natural recreation area within 20 min

Religious institution within 20 min

Percentage of single family residential land use (Total area of residential, single family within buffer/ buffer area)\*100

Destination(presence of dessert destinations within buffer

Economic environment (Median appraised value of single family residential parcels within buffer

Natural environment (Mean slope within buffer)

Covariates

* Gender
* Age
* Race
* Education
* Annual household income
* Hours spent per week watching TV
* Meals per week eaten out
* Multiple measures of PA

Key findings

* Different associations across regions

Limitations

* Small sample
* Cross-sectional

**Does change in the neighborhood environment prevent obesity in older women**?

**Soc Schi Med 2014**

Introduction

* Neighborhood environment can be a primary influence on older adults’ health and **functioning** (Yen et al., 2009)
* Any study examining weight change in a cohort of **older adults** (in our study, adults 72–85years) must consider two different outcomes: **obesity** and **weight loss**
* Over **age 75**, **weight loss** is a marker of **frailty** (Fried et al., 2004).
* While some studies have evaluated **changes in neighborhood environment as a result of individuals moving**, these studies have methodological **limitations** including self-selection, small samples of movers, short follow-up periods, and focus on movers to new housing developments (Giles-Corti et al., 2013; I. M. Lee et al., 2009).

Purpose

* Using Metro’s comprehensive regional spatial data and a large cohort study of older women residing in the **Portland metropolitan** region with **longitudinal measures of body size and other health factors**, we assessed whether **change in the neighborhood environment** is associated with **change in adiposity, measured by BMI**, in older women over an 18-year period.

Method

* Selection of built environment measures: high population density, high street connectivity, convenient access to amenities, and especially access to transit and commercial areas = most likely to walk for exercise and transport (Siu et al., 2012)
* **Parallel-process latent growth models in Mplus**, following a step-wise approach to model the **concurrent change in BMI and neighborhood built environmen**t during the study period and to determine whether changes in the built environment were associated with changes in participant BMI

Outcome/PEV

* BMI
* Land use mix = **Euclidian distance from a participant’s address to the nearest area zoned for commercial(not including industrial or institutional) use**
* Street connectivity = **density of intersections in a 1/4 mile radius around address**
* Public transit = **Euclidian distance to the nearest transit stop(1), density of transit stops within 1/4 mile buffer around address(2)**

Covariates

* Age
* Education
* Occupational manual labor
* Comorbid conditions
* Smoking
* Average self-reported health
* Mobility disability

Key findings

* **No association** between neighborhood walkability or parks and green spaces and inter-individual variation in baseline BMI or change in BMI over time after adjusting for covariates

Key points

* **Univariate latent growth models** were used to model key parameters over time = BMI and Neighborhood Environment
* The analysis was made by subgroup : **1) low weight, 2) normal weight, 3) heavy weight**
* **Increased neighborhood SES at baseline was independently associated with healthier BMI** at baseline and protected against a decrease in BMI over time➔suggesting that neighborhood SES mitigates the impact of age-related weight loss

Limitations

**Living near major roads and the incidence of dementia, Parkinson's disease, and multiple sclerosis: a population-based cohort study**

**Hong, Lancet 2017**

Introduction

Summary

* The study analyzed if the incidence of Dementia, Parkinson's disease, and Multiple sclerosis would increase by living closed to major roadways.
* The result showed that only the incidence of dementia seems to be associated with living close to heavy traffic.

Purpose

* To identify the risk of developing neurological-diseases: dementia, Parkinson’s disease, and multiple sclerosis by living close to major roadways.

Methods

* 2 population cohort (1)20-50 years: multiple sclerosis cohort (2)55-85 years: dementia or Parkinson’s disease cohort
* The diagnoses of diseases were from validated databases
* Calculated residential proximity to major roadways or highways based on **postal-code** 5 years before cohort inception
* Cox proportional hazards models
* Separate models were developed for each disease.- all models stratified by region(living in Toronto or not), and adjusted for sex, comorbidities, urban residency, and neighborhood-level income, education, unemployment, and immigration status.

Outocme/PEV

* Incidence of 1)dementia, 2)Parkinson’s disease, 3)multiple sclerosis
* Distance to roadways (5 categories & continuous)

Covariates

* Age
* Gender
* Pre-existing comorbidities – injury, diabetes, hypertension, stroke, coronary heart disease, congestive heart failure, and arrhythmia
* Neighborhood-level variables – income quintile, a measure of relative household income, percentage of population aged 15 years or older with less than hgh school education, unemployment rate, and percentage of recent immigrants
* Neighborhood-level deprivation
* **Urban residence (yes/no)**
* **Density of neurologists**
* PM2.5 and NO2 from satellite observations of aerosol optical depth(4 year mean of PM2.5 1998-2001)

Key findings

* Living closer to a major road was associated with increased incidence of dementia

Limitations

* Could not identify undiagnosed cases of dementia, parkinson’s disease, and multiple sclerosis
* Did not have information on medications
* Did not have individual socio economic status and behavioral variables
* Based on postal-code addresses, which do not completely reflect personal exposure

Key points

* Calculated residential proximity to major roadways or highways based on **postal-code** 5 years before cohort inception
* The distance was calculated from the **centeroid of postal-code address to major traffic roads**(primary urban roads, arterial roads), and highways(expressways, primary and secondary highways)
* Categorized the group into <50m, 50-100m, 101-200m, 201,300m, >=301m
* Used continuous distance also
* Used neighborhood socioeconomic status and comorbidities – **Since neighborhood socioeconomic status is strongly associated with individual socioeconomic status and behavioral variables, and comorbidities and neurodegenerative disease share some common behavioral factors, adjusting for these variables should reduce the influence of these unmeasured variables.**

Check how to use IPAQ-sv data