Determining density of unhealthy outdoor advertising in NYC by neighborhood poverty level: Methods and approaches

Tamar Adjoian, MPH
Rachel Dannefer, MPH, MIA
Calpurnia Roberts, PhD
Shannon Farley, DrPH, MPH

NE Epi Conference, 2015

Background: Advertising

Why look at advertising?
- Advertising has been well-documented to influence purchasing behavior
- Targeted marketing toward specific populations (communities of color, children) and environments (high-poverty areas), is well established

Underlying Framework and Disease Pathways

MODIFIABLE RISK FACTORS
- Tobacco Use
- Sodium
- Fruits & vegetables
- Sugary drinks
- Physical activity

PRECURSORS TO OUTCOMES
- Hypertension
- Diabetes
- Obesity

HEALTH OUTCOMES
- Heart Disease
- Stroke
- Cancer

Background: Advertising

- Little research has been done on outdoor advertising of sugary drinks and unhealthy food, both in general and to targeted audiences
- Methods vary widely; to our knowledge no consensus on best practices
- No comprehensive study has been done in NYC to explore advertising for these harmful products
Advertising Density

Community Marketing Study

Purpose:
To estimate the density of outdoor advertising for non-alcoholic beverages, food, tobacco and alcohol in NYC overall and by neighborhood poverty

By:
Collecting images of street-level advertising on 1,050 retail-dense blocks stratified by borough and by low-, medium-, and high-poverty neighborhoods, in summer of 2015

Methods and Approaches – Outline:

I. Key Decisions:
   I. Defining “Retail-Dense”
   II. Defining Neighborhood Poverty
II. Sampling Frame
III. Advertisements
IV. Limitations & Strengths
Key Decisions: Defining “Retail-Dense”

- Where should we collect data?
- How should we define “retail”?
- What should be our unit of data collection?
- What should be considered “retail-dense”?

Source: Thihalolipavan S, Goranson C, Miller O. Alcohol advertising visible at the street level in retail-dense areas of NYC. A research report from the New York City Department of Health and Mental Hygiene (2011).
Retail Dense Examples in the Real World

Two address points on this segment, one of which is retail = 50% retail = “retail-dense”?

Census tract data was used to determine poverty level for each street segment and categorize them at 3 levels.

- Levels were based on the percent of residents living below the federal poverty threshold:
  1) Low poverty: <10% of residents
  2) Medium poverty: 10 - <20% of residents
  3) High poverty: 20% + of residents

Sampling Frame

- Target sample size was 1,050 street segments, stratified by borough and poverty group, for a total of 15 strata
  - 10% oversample if replacements were needed yielded 1,106 total in sample
- We randomly sampled street segments within each strata, setting a minimum of 50 street segments per strata
- Remaining segments were distributed into strata proportionally

Advertisements Defined

- Advertisements included in this study are street-level, stationary signs (posters, stickers, decals, etc.) that display a product with the intended purpose of promoting that product or type of product
- One ad is considered the discrete, physical unit of the poster, sticker, decal etc., even if it contains multiple images
Branded and non-branded advertisements

- Branded
- Non-branded

Includes logos with no product images, as long as not a logo for the establishment

Logos without product featured

Yes
No
No
No

Unless they are logos for an establishment located on that same establishment (e.g. “Subway” logo on a Subway restaurant)

Ads on Awnings

Ads on Stationary, Fixed Structures (not buildings)

- Newsstand
- Bus Shelter
- Subway Entrance
- Ice Bin
- Pay Phone
Digital ads on subway entrances, etc.

Excludes...

Non-stationary ads

Symbols, words, logos for Store ID
Signs that list products, no images

Logos for Restaurant-Affiliated Services, No Images of Food

Advertisement Coding

Advertisement Coding
Limitations

• All datasets that are used to define sample are not updated with the same frequency; some are likely to be outdated
• People don’t live and work only in their own neighborhoods, they may be exposed to other advertisements wherever they travel
• Anything other than "street level" advertising was excluded
• Not capturing size of advertisements

Strengths

• Efficient approach to defining the retail environment
• Large sample size
• Ability to conduct citywide analyses, as well as comparisons between neighborhood poverty levels
• Inclusion of a range of unhealthy products featured in advertising content (food/beverage, alcohol, tobacco)

Acknowledgments

NYC DOHMH
• Rachel Dannefer, MPH, MIA
• Calpurnya Roberts, PhD
• Shannon Farley, DrPH, MPH
• Michael Johns, PhD

Other Contributors
• Research Triangle Institute, Inc. (RTI)
• Ewald & Wasserman Research Consultants, LLC (E&W)
• Susan Resnick, MA, LMSW
• Gretchen Culp, MS
• Kevin Konty, MS
• E&W data collectors
• Partnerships to Improve Community Health (PICH) cooperative agreement

PARTNERSHIP TO IMPROVE COMMUNITY HEALTH (PICH)