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Health Disparities, Neighborhood Poverty, and Racial Composition

Thomas A. LaVeist, Darrell J. Gaskin, Antonio J. Trujillo



Protecting Health, Saving Lives—*Millions at a Time*

Background

- Segregation is the Fundamental Cause of Health Disparities
 - infant Mortality
 - adult mortality
 - poor health status
 - smoking during pregnancy and poor birth outcomes,
 - tuberculosis (TB) and other infectious diseases
 - exposure to cancer-causing air toxins

Sources: Morello-Frosch & Jesdale 2006; Yankauer 1950; LaVeist 1989; 1993; 2003; Polednak 1991; 1996a; 1996b; Bell Zimmerman & Mayer 2007; Osypuk & Acevedo-Garcia 2008



Objective

- This study attempts to determine if the relationship between segregation and health is due to the racial composition of neighborhoods and concentration of poverty.
- Central questions:
 - Does living in a predominately minority zip code negatively affect health?
 - Or, does living in a high poverty zip code negatively affect health use of office based healthcare among adults?
 - Or both?



THE MOTIVATION

- Place Matters because Community-Level Resources and Risk Factors Matter.
- Inner city communities are disadvantaged primarily because of high levels of poverty and lack of resources, employment and educational opportunities for their residents (Wilson 1987).



Data

- Linked data from the 2006 Medical Expenditure Panel Survey (MEPS) with zip code level data from the 2000 Census
- Restricted sample to 17,751 white, black and Hispanic adults.
- Conducted the analysis at the AHRQ Research Data Center.



Key Dependent Variables of Interest

- Used five measures of health status
 - Self-reported general health status
 - Mental health status, as measured by the Kessler Index.
 - Presence of diabetes (told by doctor/health professional)
 - Presence of hypertension (told by doctor/health professional)
 - Presence of stroke (told by doctor/health professional)



Key Measures of Segregation

- Identified neighborhood as predominantly minority/integrated if the zip code was predominately (65% or more) Black, Hispanic, or Other Non White Race or at least 35% of any two groups
 - Preliminary analysis shows that integrated and predominantly Hispanic and predominantly Black Neighborhoods performed similarly, we opted for predominantly minority.
- Identify neighborhoods as high poverty if poverty rate exceeded 20%



Methodology

- Estimated logistic regression analysis
- Estimated a base model using the MEPS data, and then models using the segregation measures
- **Base models** controlled for individual factors: race/ethnicity, poverty status, age, gender, educational attainment, msa location, and census region
- **Place models** included zip code level variables: predominantly minority/integrated and high poverty indicators variables



Summary of Results

- The study found that *place matters* for 3 out of the 5 health measures, namely: (a) general health, (b) mental health and (c) diabetes.
- Community-level poverty proved to be a more important determinant of health status than racial composition. To the extent that neighborhood factors influenced the health of residents of minority communities, it is due to concentrated poverty.
- Therefore to eliminate racial and ethnic health disparities, policy makers should address the causes of and remedies for concentrated poverty.



Odds of Being in Fair or Poor General Health by Individual Race and Poverty Status and Neighborhood Race and Poverty

	Base Model	Place Model
Black	1.304 ^b	1.140
Hispanic	0.870	0.792 ^a
Poor	4.211 ^c	4.008 ^c
Minority/Integrated	N/A	1.058
High Poverty	N/A	1.386 ^c

Source: Base upon calculations from the 2006 MEP and 2000 US Census Data.
 'c' denotes significant at $p < 0.001$, 'b' denotes $p < 0.01$. and 'a' denotes $p < 0.05$.



Odds of Being in Poor Mental Health by Individual Race and Poverty Status and Neighborhood Race and Poverty

	Base Model	Place Model
Black	0.866	0.816
Hispanic	0.909	0.879
Poor	4.713 ^c	4.558 ^c
Minority/Integrated	N/A	0.948
High Poverty	N/A	1.304^a

Source: Base upon calculations from the 2006 MEP and 2000 US Census Data.
 'c' denotes significant at $p < 0.001$, 'b' denotes $p < 0.01$. and 'a' denotes $p < 0.05$.



Odds of Having Diabetes by Individual Race and Poverty Status and Neighborhood Race and Poverty

	Base Model	Place Model
Black	1.722 ^c	1.581 ^c
Hispanic	1.587 ^c	1.493 ^b
Poor	1.404 ^b	1.360 ^b
Minority/Integrated	N/A	1.052
High Poverty	N/A	1.202

Source: Base upon calculations from the 2006 MEP and 2000 US Census Data.
 'c' denotes significant at $p < 0.001$, 'b' denotes $p < 0.01$. and 'a' denotes $p < 0.05$.



Odds of Having Hypertension by Individual Race and Poverty Status and Neighborhood Race and Poverty

	Base Model	Place Model
Black	1.994 ^c	2.013 ^c
Hispanic	0.970 ^c	0.980 ^a
Poor	1.219 ^a	1.215 ^a
Minority/Integrated	N/A	0.958
High Poverty	N/A	1.047

Source: Base upon calculations from the 2006 MEP and 2000 US Census Data.
 'c' denotes significant at $p < 0.001$, 'b' denotes $p < 0.01$. and 'a' denotes $p < 0.05$.



Odds of Having a Stroke by Individual Race and Poverty Status and Neighborhood Race and Poverty

	Base Model	Place Model
Black	1.383 ^a	1.430
Hispanic	0.708 ^c	0.735
Poor	1.601 ^a	1.590 ^a
Minority/Integrated	N/A	0.852
High Poverty	N/A	1.175

Source: Base upon calculations from the 2006 MEP and 2000 US Census Data.
'c' denotes significant at $p < 0.001$, 'b' denotes $p < 0.01$. and 'a' denotes $p < 0.05$.



Adjusted Probability of Having Selected Conditions, by Individual Race/Ethnicity and Neighborhood Poverty Concentration

	Fair/Poor Health	Poor Mental Health	Diabetes
White in Non Poor Area	8.90	3.88	3.16
Black in Non Poor Area	10.03	3.23	4.88
Hispanic in Non Poor Area	7.18	3.40	4.67
White in Poor Area	11.92	4.97	3.77
Black in Poor Area	13.37	4.14	5.81
Hispanic in Poor Area	9.67	4.37	5.56



Relationship between high poverty zip codes and predominantly minority or integrated zip codes.

- 18% of zip codes are high poverty zip codes.
- 88% of high poverty zip codes are predominantly minority or integrated zip codes.
- 43% of persons living in predominantly minority or integrated zip codes also live in a high poverty zip code.
- 79% of persons living in high poverty zip codes, also live in a predominately minority zip code.
- 35% of Black adults live in high poverty zip codes
- 28% of Hispanic adults live in high poverty zip codes



Bottom Line

- Minority neighborhoods are risky neighborhoods when they are also poor neighborhoods.
- Poor neighborhoods are risky neighborhoods but most poor neighborhoods are minority or integrated neighborhoods.



We Need More Policies Targeting the Deficiencies Associated with Place

- To address disparities we must use more than just individual level solutions.
 - Patient and physician education, tools and training.
- CDC's REACH Program
 - addresses asthma, breast and cervical cancer, diabetes, heart disease, adult immunization, and infant mortality.
- Obama Administration's "Let's Move" and "The Healthy Food Initiative".
- National Institute on Minority Health and Health Disparities (NIMHD) has the Community Based Participatory Research (CBPR) Initiative.



Contact Information

Darrell J. Gaskin, PhD

Associate Professor of Health Economics

Deputy Director, Hopkins Center for Health Disparities Solutions

Department of Health Policy and Management

Johns Hopkins Bloomberg School of Public Health

624 N. Broadway, Suite 441

Baltimore, MD 21205

443-287-0306

410-614-6284

dgaskin@jhsph.edu

