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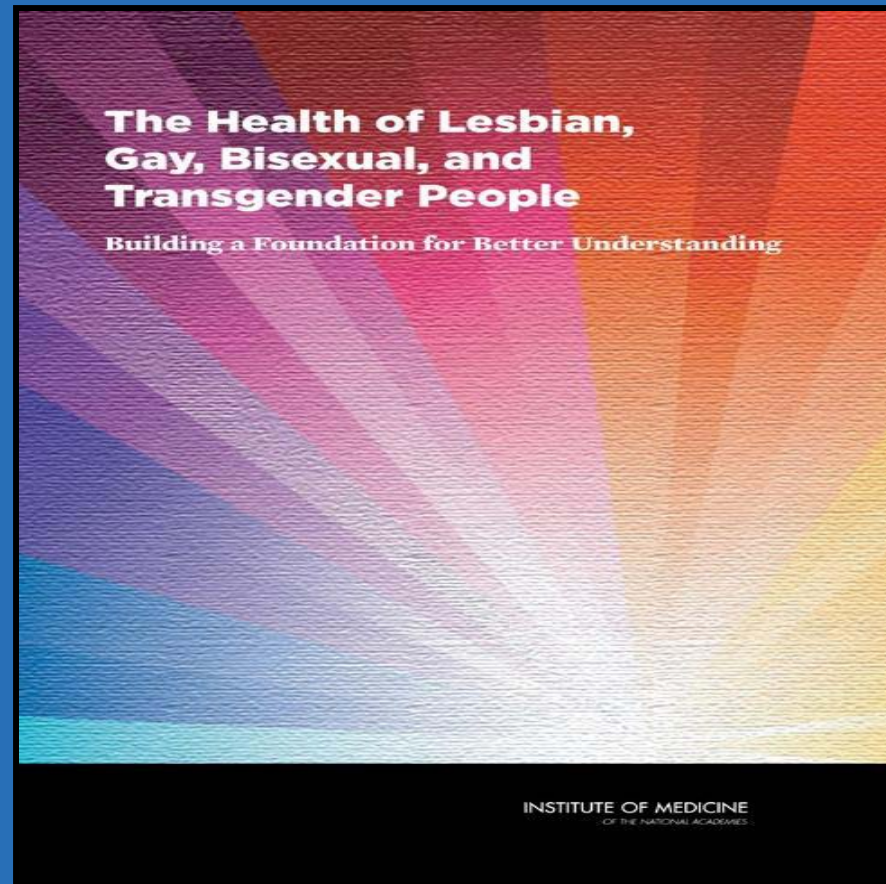# Structural Stigma and Sexual Orientation Health: Measurement, Methods, and Challenges

Mark L. Hatzenbuehler, PhD
Associate Professor of Sociomedical Sciences
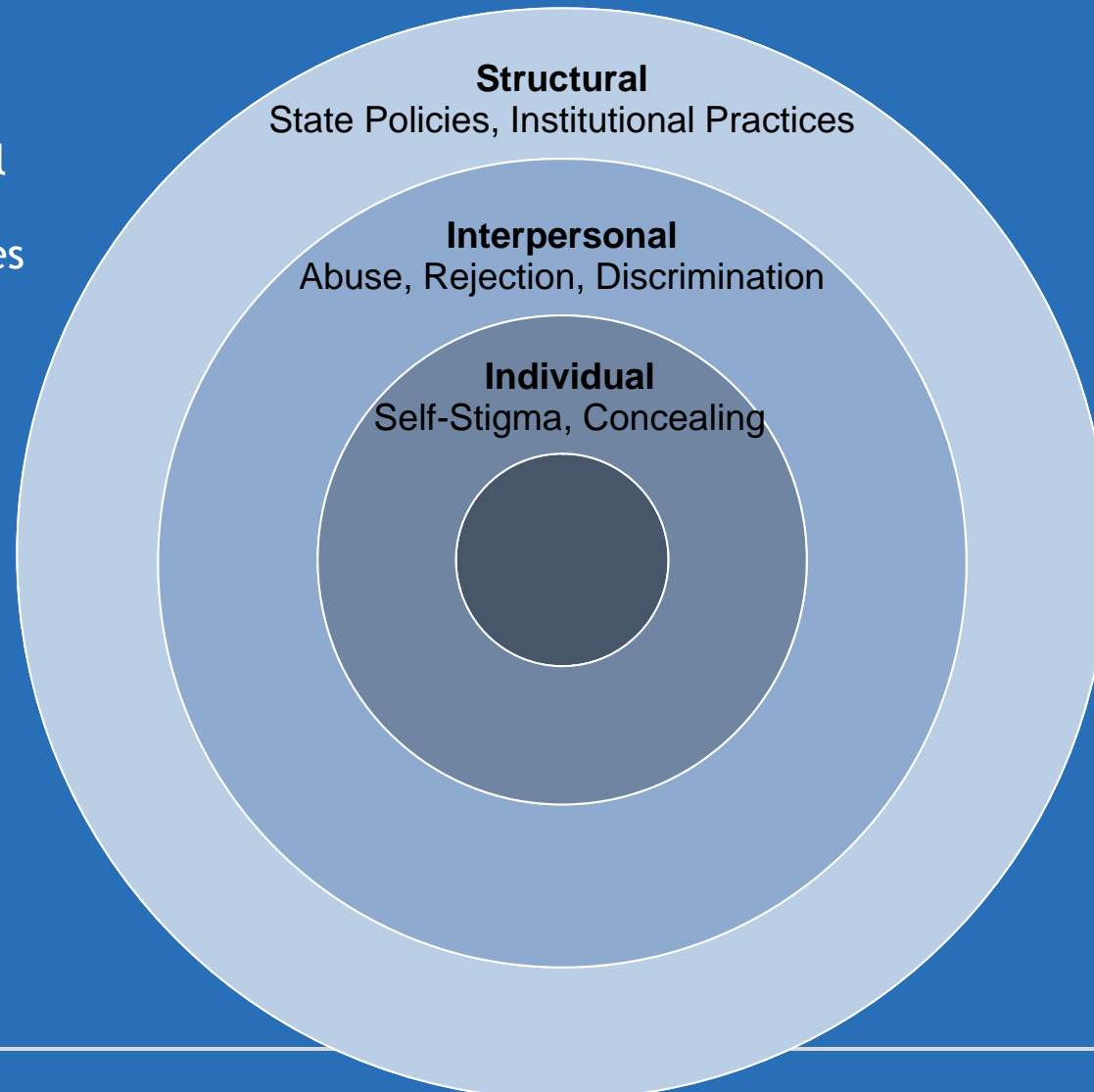Co-Director, Center for the Study of Social Inequalities and Health
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Sexual Orientation Health Disparities

The Health of Lesbian, Gay, Bisexual, and Transgender People

Building a Foundation for Better Understanding

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

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Stigma: A Multi-Level Construct

"Societal-level conditions, cultural norms, and institutional policies and practices that constrain the opportunities, resources, and wellbeing of the stigmatized" (Hatzenbuehler & Link, 2014, p. 1).

Structural
State Policies, Institutional Practices

Interpersonal
Abuse, Rejection, Discrimination

Individual
Self-Stigma, Concealing

"The under-representation of [structural stigma] is a dramatic shortcoming in the literature on stigma, as the processes involved are likely major contributors to unequal outcomes" (Link et al., 2004, p. 515).

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Challenges in Studying Structural Stigma and LGB Health

- ## Lack of structural-level measures
  - Sexual minority stigma is largely assessed at the individual or interpersonal level of analysis

- ## Lack of variation in structural stigma
  - Some forms were, until recently, ubiquitous exposures (e.g., DOMA)

- ## Lack of data structures
  - Few population-based health data sets that include measures of sexual orientation and provide geographic units of analysis (e.g., state) that enable researchers to link in structural stigma variables

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Measure #1:
State-Level Policies Targeting LGB Populations

The Impact of Institutional Discrimination on Psychiatric Disorders in Lesbian, Gay, and Bisexual Populations: A Prospective Study

| Mark L. Hatzenbuehler, MS, MPhil, Katie A. McLaughlin, PhD, Katherine M. Keyes, MPH, and Deborah S. Hasin, PhD

American Journal of Public Health | March 2010, Vol 100, No. 3

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Constitutional Amendments Banning Same-Sex Marriage (2004)
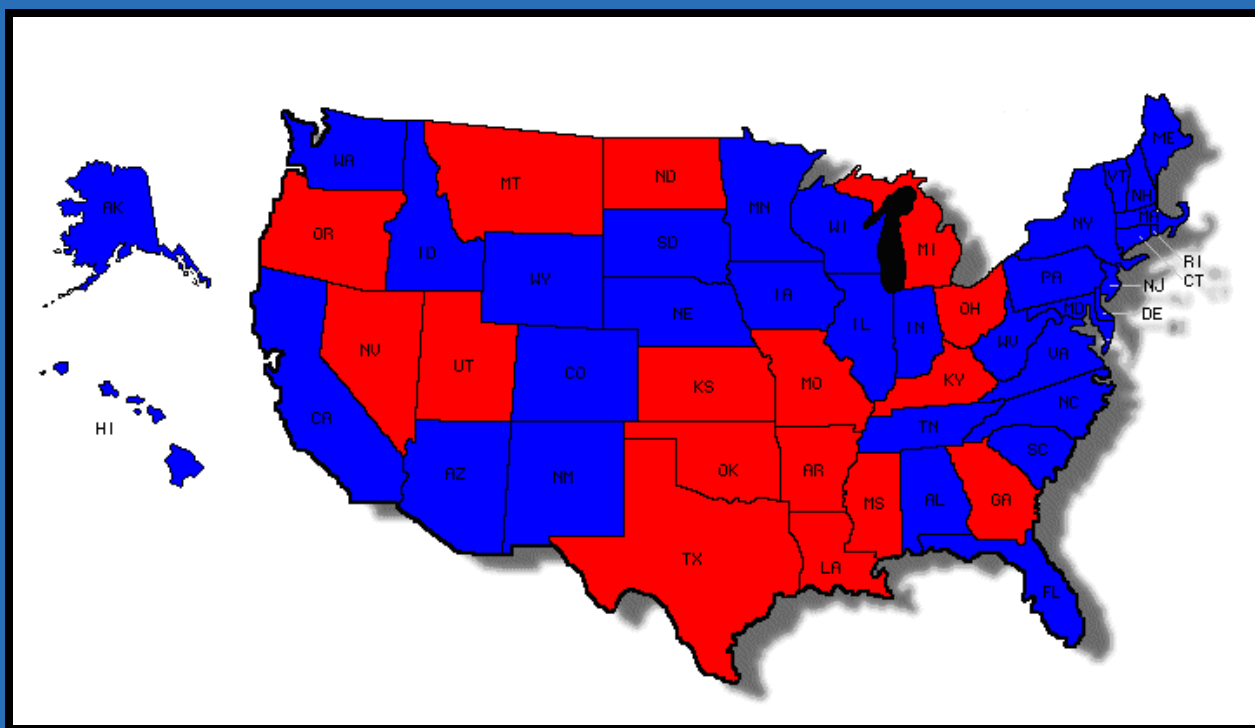
- Red = States passing constitutional amendments

- Blue = States not passing constitutional amendments

National Epidemiologic Survey on Alcohol and Related Conditions (2001-2005)

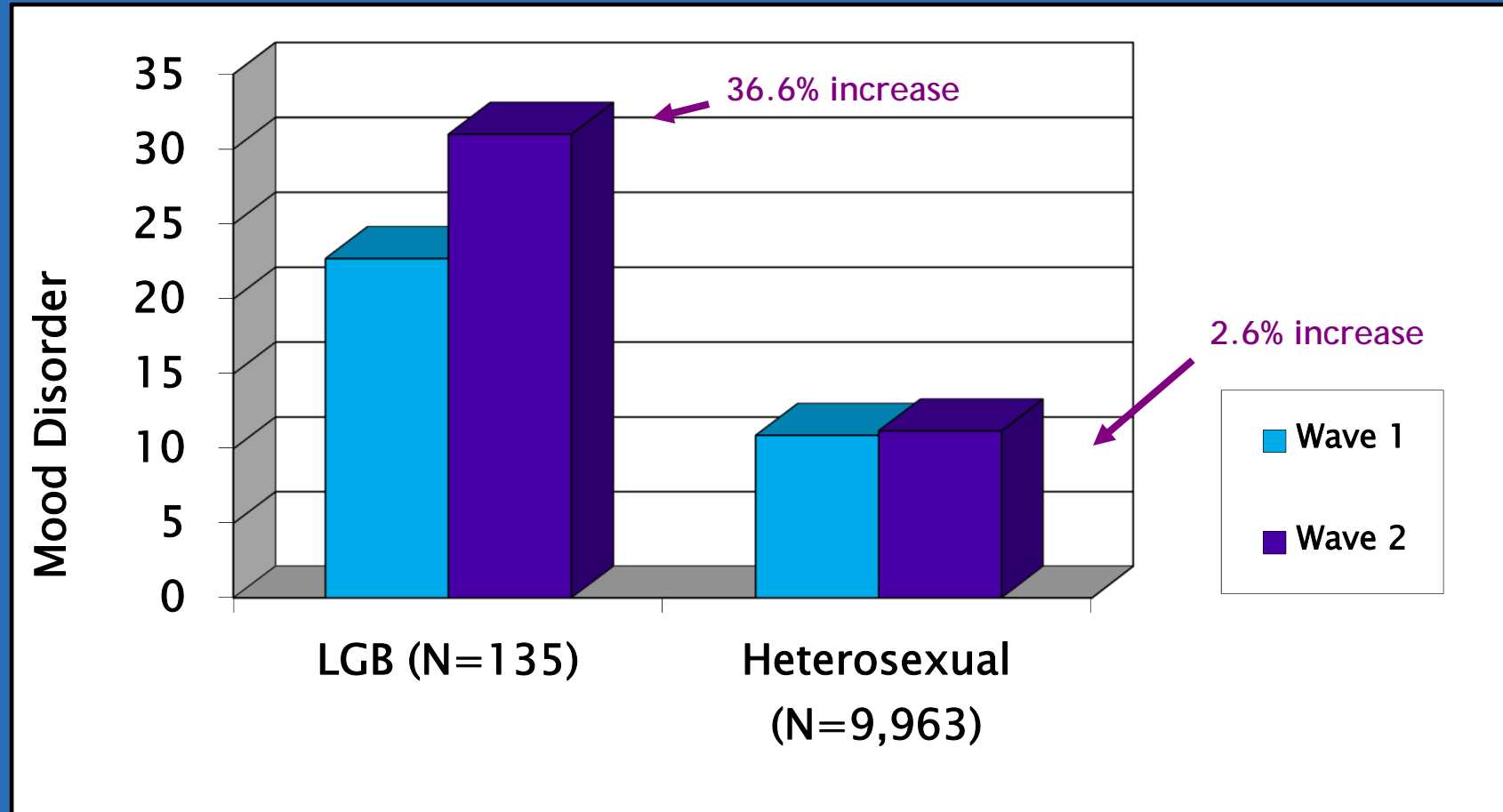COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

LGB Adults Living in States that Banned Same-Sex Marriage Experienced Increase in Mood Disorders
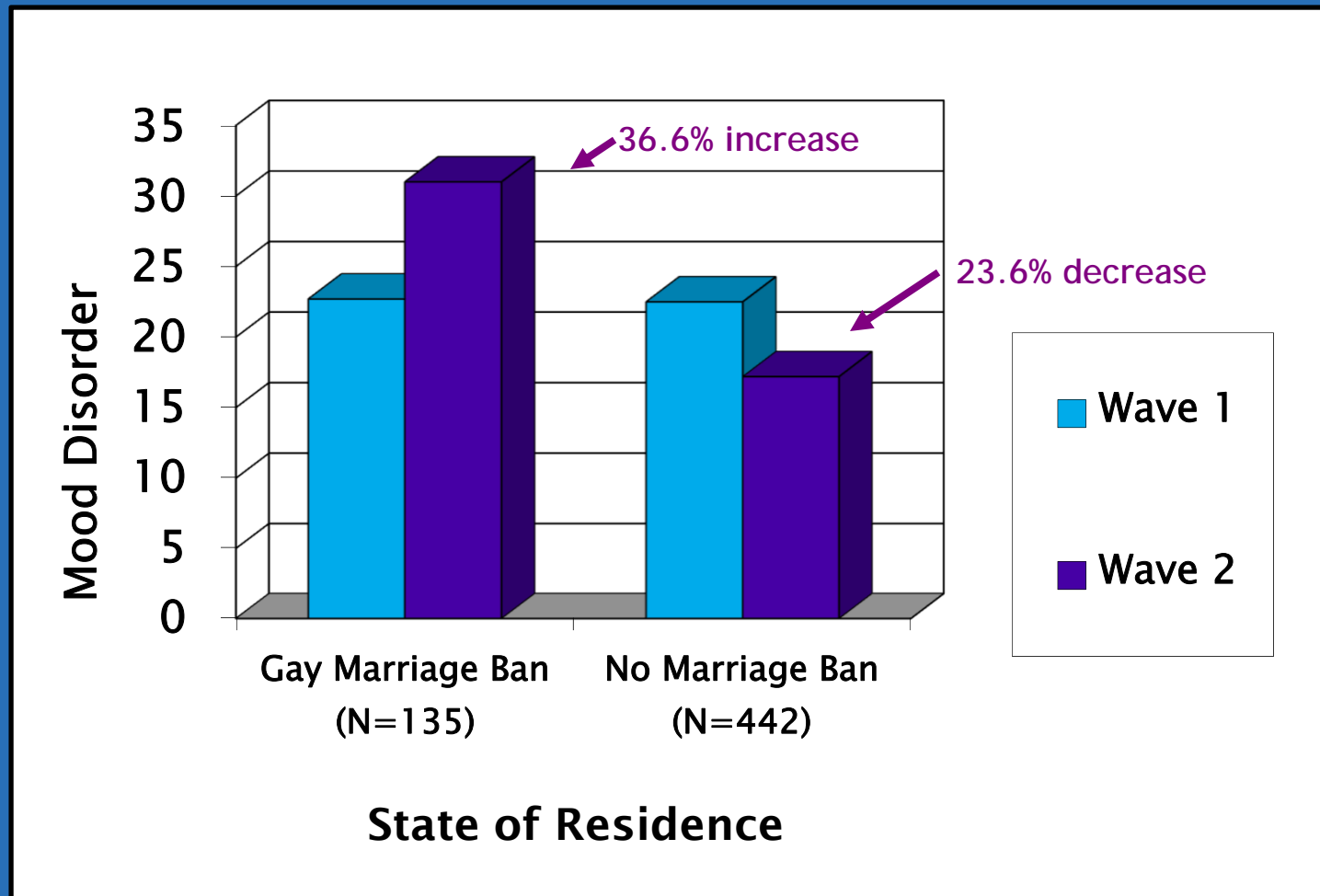
AOR = 1.67 (95% C.I. 1.01, 2.77)   AOR = 0.69 (95% C.I., 0.47, 1.01)

Covariates: sex, age, race/ethnicity, SES, marital status

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Effect of Marriage Bans Specific to LGB Adults

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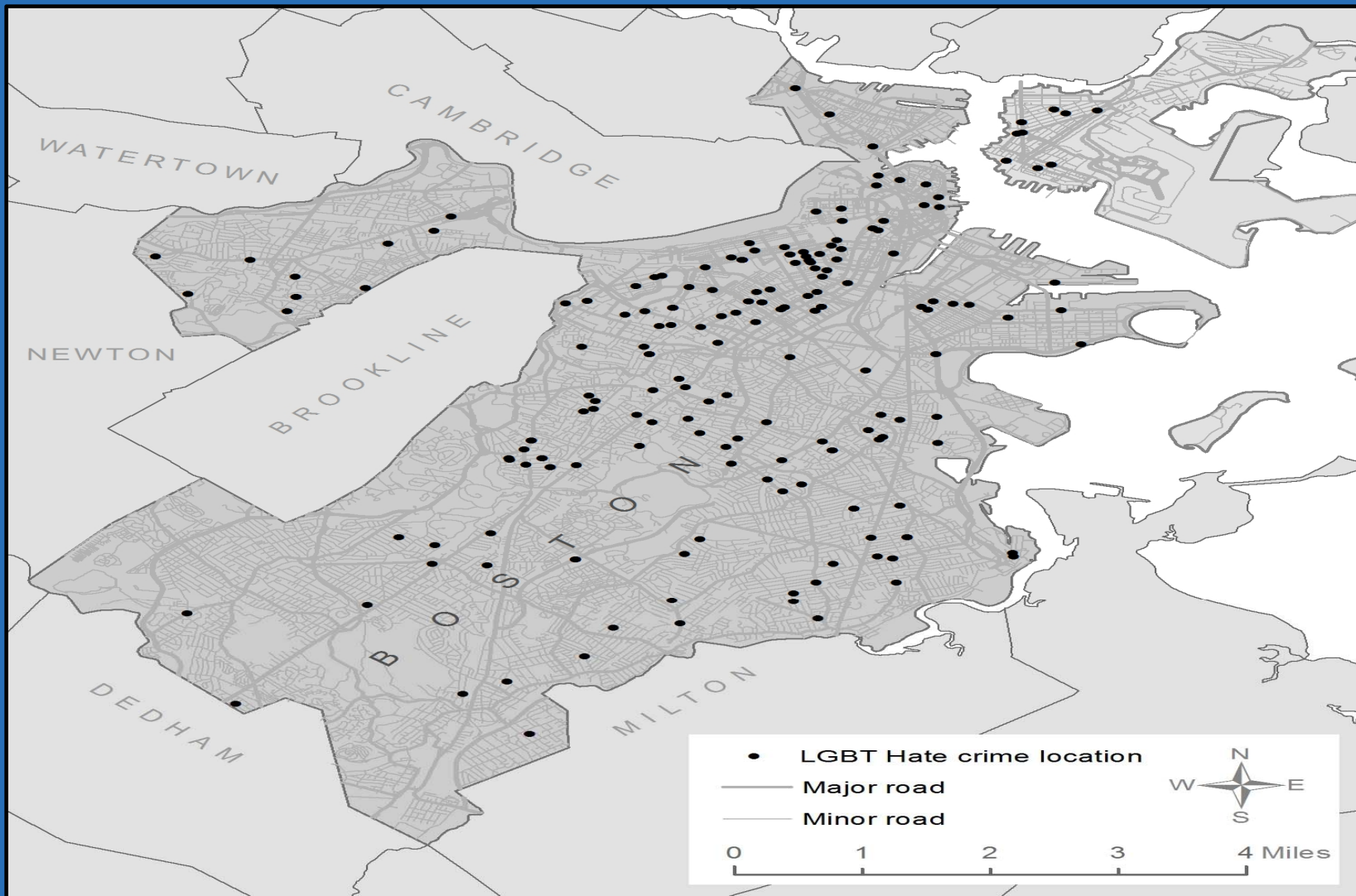
Measure #2:
Behavioral Indices of Structural Stigma

Neighborhood-Level LGBT Hate Crimes and Bullying Among Sexual Minority Youths: A Geospatial Analysis

Mark L. Hatzenbuehler, PhD
Dustin Duncan, ScD
Renee Johnson, PhD

Lesbian, Gay, Bisexual, and Transgender Hate Crimes and Suicidality Among a Population-Based Sample of Sexual-Minority Adolescents in Boston

| Dustin T. Duncan, ScD, and Mark L. Hatzenbuehler, PhD

Presented at the 2016 CDUHR Mini-Conference on Structural Variables - December 13, 2016

LGBT Assault Hate Crimes (Obtained Via Police Records): Boston

Presented at the 2016 CDUHR Mini-Conference on Structural Variables - December 13, 2016

Boston Youth Survey

- Linked ecologic data on LGBT hate crimes at the neighborhood level to individual-level data

- Boston Youth Survey
  - Public high school students grades 9-12 in Boston who provided complete residential address
  - Measure of sexual orientation identity
  - Bullying experiences in the past 30 days (Rigby, 1998)

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Bullying More Likely To Occur Among Sexual Minority Youth Living In Neighborhoods With A Greater Prevalence Of LGBT Assault Hate Crimes

Bullying Outcome	No[1]	Yes[1]	P-value[2]
Relational	11.95	21.58	0.01
Electronic	13.29	26.73	0.03
Verbal	14.15	18.44	0.22

[1]LGBT assault hate crimes (N=98) expressed as per 100,000 population.
[2]Wilcoxon two-sample t-test.

No association between LGBT assault hate crimes and bullying among heterosexual youth (N=1,129).

No association between bullying and overall violent and property crimes (N=31,254) among sexual minority youth (N=108).

Hatzenbuehler et al., 2015

Presented at the 2016 CDUHR Mini-Conference on Structural Variables - December 13, 2016

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Measurement #3:
Composite Measures of Structural Stigma

Hidden from health: structural stigma, sexual orientation concealment, and HIV across 38 countries in the European MSM Internet Survey

Country-Level Policies
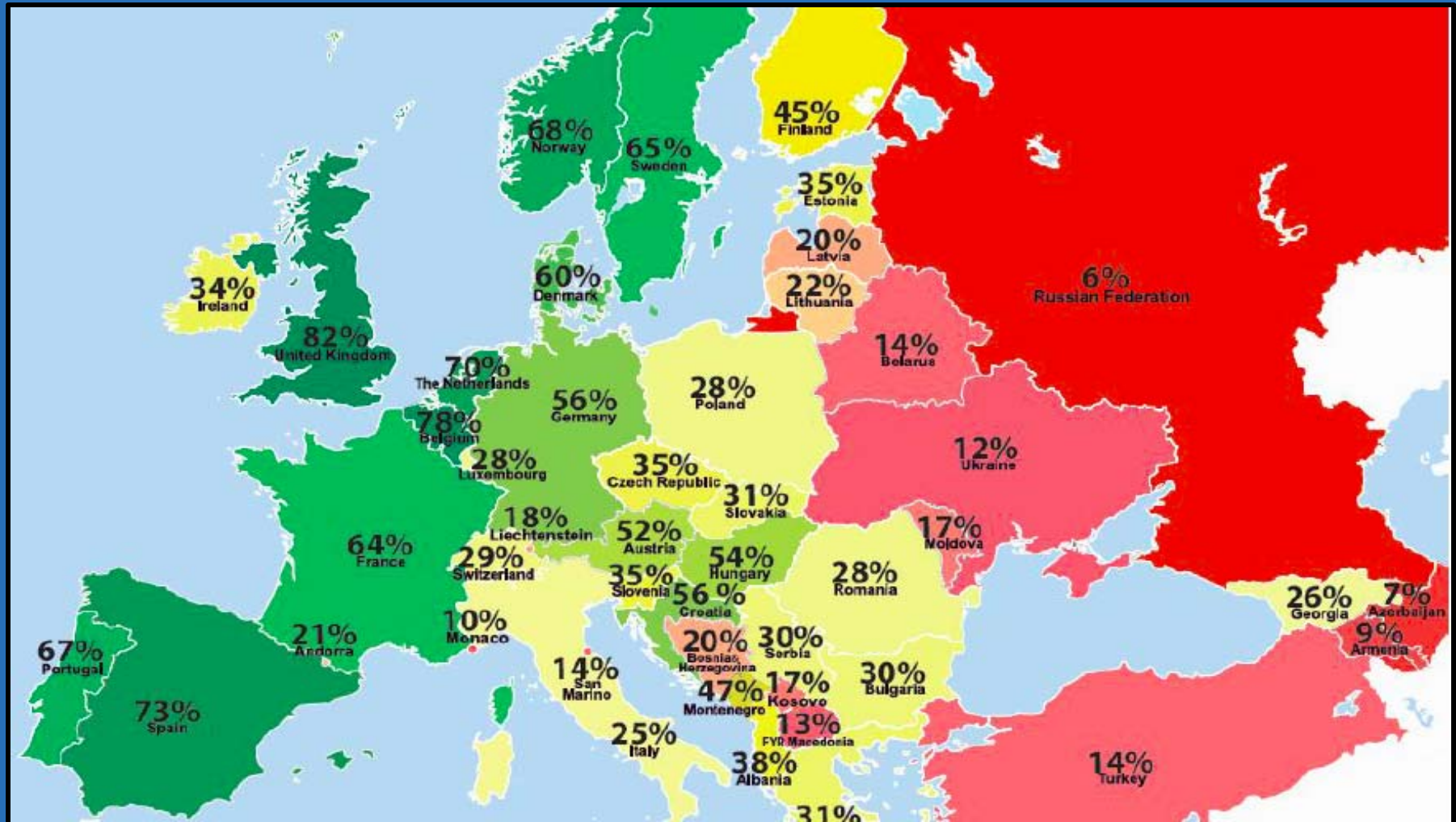
Policy index from International LGBTI Association

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Structural Stigma Measure

- Derived country-level attitudes towards sexual minorities from the 2008 European Values Survey, a cross-national survey of social attitudes that randomly sampled ~1500 residents per country.
  - Included proportion of respondents in each country who (1) thought homosexuality "could be justified"; (2) agreed that "homosexual couples should be able to adopt children"; and (3) did not indicate not wanting to have "homosexuals as neighbors."
- Calculated the standardized mean of these three variables
- Averaged the mean with the standardized policy index to create a country-level index of structural stigma

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Methods

- Linked ecologic data on structural stigma at the country level (N=38 European countries) to individual-level outcomes among MSM living in these countries (n=174,209 MSM)

Pachankis, Hatzenbuehler et al., 2015

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Structural Stigma Associated with HIV Risk Outcomes

Outcomes	AOR (95% CI)	
Inadequate HIV prevention reach	1.43 (1.27-1.62)***	
Incorrect HIV transmission knowledge	1.16 (1.08-1.26)***	
No HIV test result (12 mo.)	1.14 (1.05-1.24)**	
No STI screen (12 mo.)	1.21 (1.07-1.36)**	
Condoms never/seldom used	1.30 (1.10-1.54)**	
No sex/MSM discussion when tested	1.52 (1.29-1.80)***	

Covariates: Age, relationship status, employment status, education, settlement size, HIV status, Gini index. ** $p \leq .01$, *** $p \leq .001$, + significant mediation via distribution-of-the-product method

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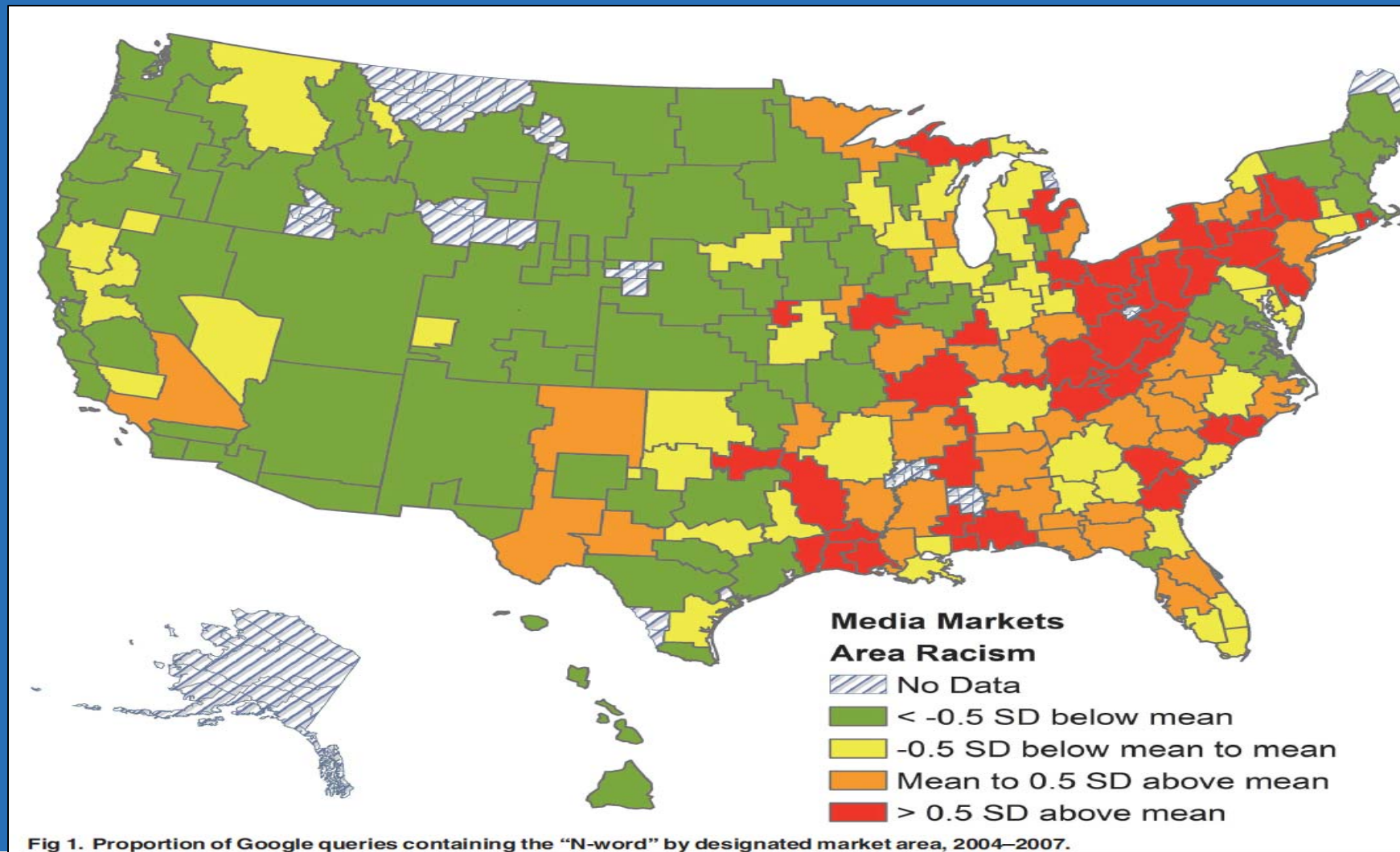Pachankis, Hatzenbuehler et al., 2015

Measure #4:
Newer Measurement Approaches

RESEARCH ARTICLE

Association between an Internet-Based Measure of Area Racism and Black Mortality

David H. Chae[1] *, Sean Clouston[2], Mark L. Hatzenbuehler[3], Michael R. Kramer[4], Hannah L. F. Cooper[5], Sacoby M. Wilson[6], Seth I. Stephens-Davidowitz[7], Robert S. Gold[1], Bruce G. Link[3]

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Measure #4:
New Measurement Approaches

Media Markets Area Racism

- No Data
- < -0.5 SD below mean
- -0.5 SD below mean to mean
- Mean to 0.5 SD above mean
- > 0.5 SD above mean

Fig 1. Proportion of Google queries containing the "N-word" by designated market area, 2004–2007.

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Measure #4:
New Measurement Approaches

Table 2. Nested negative binomial regression models estimating associations with Black all-cause mortality rates.

	Model 1		Model 2		Model 3		Model 4	
	MRR (95% CI)	p	MRR (95% CI)	P	MRR (95% CI)	p	MRR (95% CI)	p
Area racism	1.082 (1.056, 1.108)	<0.001	1.076 (1.052, 1.101)	<0.001	1.057 (1.034, 1.080)	<0.001	1.036 (1.015, 1.057)	0.001
Urbanicity			1.000 (0.999, 1.001)	0.963	1.002 (1.001, 1.004)	0.001	1.004 (1.003, 1.005)	<0.001
% Black			1.006 (1.005, 1.008)	<0.001	1.007 (1.005, 1.009)	<0.001	1.006 (1.004. 1.007)	<0.001
Education					1.003 (0.998, 1.008)	0.199	1.001 (0.996, 1.006)	0.659
Poverty					1.012 (1.008, 1.016)	<0.001	1.010 (1.006, 1.014)	<0.001
White Mortality							1.046 (1.032, 1.059)	<0.001
Psuedo-R^2	0.309	<0.001	0.314	<0.001	0.317	<0.001	0.321	<0.001
AIC, R_L	14472	<0.001	14371	<0.001	14294	<0.001	14221	<0.001
Alpha	0.025	<0.001	0.022	<0.001	0.020	<0.001	0.018	<0.001

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Methods for Studies on Structural Stigma

- Datasets must have the following variables:
  - Demographic measures of stigmatized group of interest
  - Covariates (at both the individual and structural level) to control for confounders/alternative explanations
  - Dependent variables (i.e., health outcomes)
  - Geographic information (e.g., ZIP code, FIPS code) to link structural stigma variables to individual-level data

Hatzenbuehler (2014), *Current Directions in Psychological Science*

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Conclusion:
Multi-Measure, Multi-Method Approach to Studying Structural Stigma and LGB Health

- Measures of structural stigma:
  - Social policies (e.g., same-sex marriage laws)
  - Social attitudes
  - Social behaviors (e.g., LGBT assault hate crimes)

- Methods:
  - Observational designs (cross-sectional, longitudinal)
  - Quasi-experimental designs
  - Laboratory designs

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