Sugar Coated Racism
A life course view on obesity and health

Promoting Healthy Weight Colloquium
Howard Baker Center
Friday, March 15 2013
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Director of Child, Adolescent and Family Health
Boston Public Health Commission

Overview

- The presenting problem for MCH in Boston: racial disparities in health
- Life course theory
  - Where it comes from
  - What it says
  - How does it help us understand birth outcome disparities
  - Does that fit what we know about obesity
  - In terms of data
  - In terms of logic
  - Life course as a guide to program and policy
    - Framing the issue
    - Intervention

Racial Inequities in Boston, 2009

<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>Black</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent Birth Rate (per 1,000 females ages 15 - 17)</td>
<td>11.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Smoking during pregnancy (percent of births)</td>
<td>33.0%</td>
<td>27.2%</td>
</tr>
<tr>
<td>Very Low Birth Weight (Less than 3.3 lbs) (percent of births)</td>
<td>2.9%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Infant Deaths (per 1,000 live births)</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Obesity (percent of adults)</td>
<td>33%</td>
<td>19%</td>
</tr>
<tr>
<td>High Blood Pressure (percent of adults)</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>Uninsured1</td>
<td>10%</td>
<td>4%</td>
</tr>
<tr>
<td>Asthma Emergency Department Visits (per 1,000 children under age 5)</td>
<td>44.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Hospitalizations (per 1,000 residents)</td>
<td>105.8</td>
<td>121.5</td>
</tr>
<tr>
<td>Breast Cancer Deaths (per 100,000 female residents)</td>
<td>33.9</td>
<td>19.4</td>
</tr>
<tr>
<td>Cervical Cancer Deaths (per 100,000 female residents)</td>
<td>4.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Lung Cancer Deaths (per 100,000 residents)</td>
<td>24.4</td>
<td>23.3</td>
</tr>
<tr>
<td>Prostate Cancer Deaths (per 100,000 male residents)</td>
<td>32.8</td>
<td>29.4</td>
</tr>
<tr>
<td>Diabetes Deaths (per 100,000 residents)</td>
<td>28.0</td>
<td>23.9</td>
</tr>
<tr>
<td>Drug-Related Deaths (per 100,000 residents)</td>
<td>33.7</td>
<td>24.8</td>
</tr>
<tr>
<td>Deaths due to Diseases of the Heart (per 100,000 residents)</td>
<td>170.2</td>
<td>175.3</td>
</tr>
<tr>
<td>Suicide (per 100,000 residents)</td>
<td>6.1</td>
<td>5.6</td>
</tr>
<tr>
<td>Homicide (per 100,000 residents)</td>
<td>27.3</td>
<td>0.8</td>
</tr>
<tr>
<td>Death Rate (per 100,000 residents)</td>
<td>710.2</td>
<td>726.5</td>
</tr>
</tbody>
</table>

1 Unless otherwise indicated, 2009 data is presented.
2 Due to the small number of cases in 2009, the average annual rate for 2008 through 2009 is presented.
3 Data for 2010.
4 Due to the small number of cases in 2009, the average annual rate for 2007 through 2009 is presented.
Boston Births and Birth Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>2008</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Total Boston Births</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>Infant Mortality/1000</td>
<td>14.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Premature Births</td>
<td>11.0</td>
<td>9.6</td>
</tr>
<tr>
<td>Low Birth Weight</td>
<td>11.7</td>
<td>9.8</td>
</tr>
<tr>
<td>Neonatal Mortality/1000</td>
<td>8.9</td>
<td>5.5</td>
</tr>
<tr>
<td>Neonatal Mortality</td>
<td>0.3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Data Source: Boston resident live births files and Boston resident linked birth/death files, Massachusetts Department of Public Health

Boston is not unique

![Graph showing birthweight distribution by race/ethnicity (2009)](image)

Boston Birthweight Distribution by Race/Ethnicity (2009)

<table>
<thead>
<tr>
<th>Weight Category</th>
<th>Black</th>
<th>Latino</th>
<th>White</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1500 grams</td>
<td>1.8%</td>
<td>1.3%</td>
<td>0.6%</td>
<td>n=5</td>
</tr>
<tr>
<td>1500-2499 grams</td>
<td>7.5%</td>
<td>5.7%</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>2500+ grams</td>
<td>90.7%</td>
<td>92.9%</td>
<td>95.6%</td>
<td></td>
</tr>
</tbody>
</table>

Data Source: Boston resident live births files, Massachusetts Department of Public Health - Data Analysis: Boston Public Health Commission Research and Evaluation Office
Timing of Boston Preterm Births by Race/Ethnicity (2009)

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Timing of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;28 Weeks</td>
</tr>
<tr>
<td>White</td>
<td>15</td>
</tr>
<tr>
<td>Latino</td>
<td>19</td>
</tr>
<tr>
<td>Black</td>
<td>56</td>
</tr>
<tr>
<td>Asian</td>
<td>7</td>
</tr>
</tbody>
</table>

The dilemma

- These outcomes are not explained by maternal age, education, prenatal care access or utilization, maternal risk behaviors, or maternal nutrition
- In fact
  - In Boston, black women with some college have more low birth weight babies than black women who did not graduate high school
    - Stereotype threat?
  - Black women who DO NOT smoke have more low birth weight babies than white women who DO smoke
  - And while smoking increases the risk of low birth weight from about 7% to about 11% for white women, for black women the rates double from 10 to 20%

Hence the interest in “life course”

- In the US and internationally
- In relation to specific chronic conditions
- In relation to racial/social disparities in health generally
- Explicitly adopted by the federal MCH Bureau as an explanation for persistent disparities in maternal and child health outcomes
- And as a guide to intervention
Parsing life course theory

- Two elements describe impact in relation to human development
  - Early exposure to risk (or risk at times of heightened vulnerability)
  - Cumulative risk over the life course
- Two elements describe the content of causality
  - Social determinants of health
  - Stress as the physiological link between social experience and health outcomes
- These four elements enable us to understand the pathway from social to health inequity

Early exposure to risk

- Evidence of the consequences of adverse birth outcomes
  - Proximal consequences
  - Distal consequences: the Barker Hypothesis
- Some exposures are uniquely dangerous at specific critical periods
  - Folic acid deficit in first trimester
  - Alcohol dependency in adolescence

Chronic disease in child and adult life predicted by early exposures

- Concept of “critical periods” has been applied to impact of insults in utero
  - Cardiovascular disease
  - Non-insulin dependent diabetes
  - Hypertension
- With possibility of later modifying factors and/or later compounding factors
  - The case of asthma
    - Link to maternal prenatal stress
    - Link to postpartum mother and child stress
Barker's findings on diabetes and birth weight

Cumulative risk

- Risk accumulates within lifetime of individual
  - Repeated occurrence of a single stressor
  - Synergistic impact of multiple stressors
- Evidence suggests risk accumulates across generations
  - "Grandmaternal" birth weight as predictor of infant birth weight
- This concept adds a dynamic dimension life course

The case of “weathering” -- Boston low birth weight rates
Social determinants

- ACES findings -> emphasis on within-family factors as predictors of adverse adult health
  - Psychological, physical, or sexual abuse
  - Violence against mother
  - Living with household members who were substance abusers, mentally ill or suicidal
  - Living with household members ever imprisoned
- Odds of adverse outcome increase with number of experiences

But let’s not lose sight of the “causes of causes”

- Income
- Employment
- Education
- Street violence
- Interaction with criminal justice system
- Transportation
- Food: adequate, safe, healthy
- Clean air and water
- Housing and neighborhood safety
- Social support
- Access to health care

And finally, stress

- According to the WHO, physiological stress reflects specific types of psychosocial experience
  - Anxiety
  - Insecurity
  - Low self-esteem
  - Social isolation
  - Lack of control over work and home life
Linking stress to life span health: allostatic load

Is there something about being at the low end of the ladder?

- Not exclusively or even necessarily defined by where the bottom and top of the ladder are
- But affected by distance from bottom to top

To be a poor man is hard, but to be a poor race in a land of dollars is the very bottom of hardships.

WEB DuBois, The Souls of Black Folk

<table>
<thead>
<tr>
<th>Place</th>
<th>Male life expectancy at birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow, Scotland, UK (Calton)</td>
<td>54</td>
</tr>
<tr>
<td>India</td>
<td>62</td>
</tr>
<tr>
<td>Washington, DC, US (Black)</td>
<td>63</td>
</tr>
<tr>
<td>Philippines</td>
<td>64</td>
</tr>
<tr>
<td>Poland</td>
<td>65</td>
</tr>
<tr>
<td>Lithuania</td>
<td>71</td>
</tr>
<tr>
<td>Mexico</td>
<td>72</td>
</tr>
<tr>
<td>US</td>
<td>75</td>
</tr>
<tr>
<td>Cuba</td>
<td>75</td>
</tr>
<tr>
<td>UK</td>
<td>77</td>
</tr>
<tr>
<td>Japan</td>
<td>77</td>
</tr>
<tr>
<td>Iceland</td>
<td>79</td>
</tr>
<tr>
<td>Montgomery Co, US (White)</td>
<td>80</td>
</tr>
<tr>
<td>Glasgow, Scotland, UK (Lenzie N)</td>
<td>82</td>
</tr>
</tbody>
</table>
Interwoven through all of the above

- Racism
  - As a predictor of adverse material circumstances
  - And as a psychosocial experience, with its own direct consequences for health

The reality of continued discrimination

- Doleac and Stein, 2010: discrimination in housing sales
- Bertrand and Mullainathan, 2002: discrimination in employment
  - Even when applicant documented widely-promoted “self-improvement” efforts
- Baker et al., 2006: unequal distribution of fast food outlets and supermarkets and of healthy foods within those outlets in St. Louis
- Poe-Yamagata and Jones, 2000: discrimination against youth of color at all stages in criminal justice process

The pathway from racism to stress to adverse outcomes

- Path analyses revealed that perceived discrimination mediated the relationship between stress and diastolic pressure responses. Individuals who perceived more discrimination had a larger increase in diastolic blood pressure in response to PE: 
  - KaMala S. Thomas, Richard A. Nelesen, Vanessa L. Malcarne, Michael G. Ziegler, Joel E. Dimsdale
  - Ethnicity, Perceived Discrimination, and Vascular Reactivity to Phenylephrine
  - The relationship between perceived racism and self-reported depression and anxiety is quite robust, providing a reminder that experiences of racism may play an important role in the health disparities phenomenon: 
  - Alex L. Pieterse, PhD, University at Albany, State University of New York; Nathan R. Todd, PhD, DePaul University; Helen A. Neville, PhD, University of Illinois at Urbana-Champaign; and Robert T. Carter, PhD, Teachers College, Columbia University;
- At the end of the trial, all the women had gained weight. But the women who said they felt higher levels of racism gained more weight and had bigger waist-size increases compared to the women who felt the least racism. That held true after accounting for factors such as education, geographic region, and beginning body mass index: 
  - Annals of Epidemiology Volume 19, Issue 6, Pages 379-387, June 2009 Perceived Racism in Relation to Weight Change in the Black Women’s Health Study
  - Yvette C. Cozier, et al.
Allen D. Sugar Coated Racism. Promoting Healthy Weight Colloquium, The University of Tennessee, Knoxville

March 15, 2013

A simple model for BMI

Where does racism enter the picture
Life course as a guide to intervention

- Our strategies must
  - Reduce early adverse exposures
  - Disrupt accumulation of risk over time
  - Address social determinants
  - Eliminate or reduce impact of stressors
- Examples that follow are drawn from my work: are there parallels related to obesity?

Reduce early exposures

- Interventions in pregnancy
- Improved retention in postpartum programs
- Strong emphasis on early childhood
- Address preteen health
- Engagement of young men and women in preconceptional health

Examples

- “Centering post partum care”
- Office of Minority Health youth engagement
Disrupt accumulation of risk over time

- Enhanced clinical care to address high risk pregnancy
- Preconceptual care for women at high risk

Examples

- Use of progesterone to avert preterm birth
- Case management model within family planning
  - Young women with positive STI screen
  - Young women with negative pregnancy test who did not plan to become pregnant

Address social determinants

- Alliances around social advocacy
- New models that address needs of communities at risk
- We need to stop settling for programs that can’t meet community needs and look for
  - Strategies that maximize use of everything in the envelope
  - Strategies that push the envelope
Examples

- CORI reform
- Medical-Legal Partnership
- Boston’s Healthy Start in Housing program
  - Enhanced access to public housing for pregnant women
- Boston’s Violence Prevention and Intervention Program
  - Multifaceted, community-based violence prevention
  - Determinants of violence overlap with determinants of health

Help individuals, families, communities grapple with stress

- Name it and name its causes and its effects
  - Challenge victim-blaming or paternalistic ideas about what’s wrong in people’s lives and what they need
  - Build or join coalitions to take on the tough battles (or at least acknowledge them)
- New models of stress reduction and support
  - Promote access to stress reduction for people with limited resources

Examples

- Social marketing around community-wide pregnancy support
- Youth engagement around disparities
- The critical role of men/partners
What about personal responsibility?

- Of course individual factors matter.
- Of course we can and should provide health education, encourage responsible behavior and promote the resilience of individuals.
- But let’s not be too cocky about what we can “teach” people.
- Think about a tsunami, or closer to home, Hurricane Katrina.
  - Would teaching people to swim have been the best preventive strategy?

Questions to ponder

- How do we avoid victim blaming or determinism in discussions of early programming?
- How do we engage the communities we serve in discussion of life course?
- How do we make that discussion relevant, even liberating, in the face of day-to-day struggles?