Racism and Its Impact on Children’s Health
October 13, 2015
AAP Public Health Special Interest Group

- Promotes public health approaches to child health
- Promotes collaborations between pediatricians and public health professionals
- Provides a network for pediatricians to develop strategies that integrate clinical medicine and public health
- Contact: cocp@aap.org to join.

Jacqueline Dougé MD, MPH, FAAP
Amanda Castel MD, MPH, FAAP

SIG Co-Chairs
APHA
Founded on April 18, 1872

- Oldest and largest non-profit public health organization in the world
- Mission: Improve the Health of the Public and Achieve Equity in Health Status
- 54 Affiliates in every U.S. State, DC & Puerto Rico
- Over 50,000 members
- 31 Sections, 2 SPIGS, 18 Caucuses

Regina Davis Moss, PhD, MPH, MCHES
Associate Executive Director
American Public Health Association
Maternal and Child Health Section

Promotes public health policy, increases public awareness, and plans continuing education opportunities about issues impacting mothers, children, adolescents and families.

Health Equity Work Group:

- Deepens our understanding of the nature and extent of racism in the US and of its impact on health
- Challenges policies and approaches that contribute to health inequality among children based on race/ethnic
- Develops collaborative relationships with like-minded organizations and with other sections of APHA around an anti-racist action agenda
- Incorporates a health equity perspective into all aspects of Section work, including the development of proposals and policies and the work of Section committees
Toxic Stress and Health: The Impact of Childhood Exposure to Racism

Racism and Its Impact on Children’s Health
AAP/APHA Webinar
Tuesday October 13th, 2015

Roy Wade, Jr. MD, PhD, MPH
Instructor of Pediatrics
Children’s Hospital of Philadelphia
Disclosure

• I have no actual or potential conflict of interest in relation to projects discussed in this presentation.

• The projects presented today were funded by the Robert Wood Johnson Foundation and the Perelman School of Medicine at the University of Pennsylvania.
Overview

• Adverse Childhood Experience Study and Toxic Stress

• Childhood Exposure to Racism as a Toxic Stress

• Approaches to Addressing Toxic Stress
Outcomes Associated with Adverse Childhood Experiences: A Life Course Perspective

**Childhood:**
- Fetal Death
- Developmental Delay
- Behavioral Problems
- Cognitive Impairment

**Adolescence to Young Adulthood:**
- Mental Health
- Academic Achievement
- Juvenile Justice

**Adulthood:**
- Mental Health
- Physical Health
- Disability
- Early Mortality
Adverse Childhood Experience Study

- Published by CDC/Kaiser in 1998
- Surveyed 17,000 policy holders
- Understand relationship between childhood adversity & adult health outcomes

<table>
<thead>
<tr>
<th>Childhood Exposure</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse</td>
<td>Psychological</td>
</tr>
<tr>
<td></td>
<td>Physical</td>
</tr>
<tr>
<td></td>
<td>Sexual</td>
</tr>
<tr>
<td>Household dysfunction</td>
<td>Substance abuse</td>
</tr>
<tr>
<td></td>
<td>Mental illness</td>
</tr>
<tr>
<td></td>
<td>Intimate partner violence</td>
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<tr>
<td></td>
<td>Criminal behavior</td>
</tr>
<tr>
<td></td>
<td>Divorce</td>
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<tr>
<td>Neglect</td>
<td>Emotional</td>
</tr>
<tr>
<td></td>
<td>Physical</td>
</tr>
</tbody>
</table>

Adapted from Felitti et al., 1998
**High Prevalence of Adverse Childhood Experiences among Participants**

<table>
<thead>
<tr>
<th>Childhood Exposure</th>
<th>Subcategory</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse</td>
<td>Psychological</td>
<td>11 %</td>
</tr>
<tr>
<td></td>
<td>Physical</td>
<td>28 %</td>
</tr>
<tr>
<td></td>
<td>Sexual</td>
<td>21 %</td>
</tr>
<tr>
<td>Substance abuse</td>
<td></td>
<td>27 %</td>
</tr>
<tr>
<td>Household dysfunction</td>
<td>Mental illness</td>
<td>19 %</td>
</tr>
<tr>
<td></td>
<td>Intimate partner violence</td>
<td>13 %</td>
</tr>
<tr>
<td></td>
<td>Criminal behavior</td>
<td>5 %</td>
</tr>
<tr>
<td></td>
<td>Divorce</td>
<td>23 %</td>
</tr>
<tr>
<td>Neglect</td>
<td>Emotional</td>
<td>15 %</td>
</tr>
<tr>
<td></td>
<td>Physical</td>
<td>10 %</td>
</tr>
</tbody>
</table>

Adapted from Felitti et al., 1998
Graded Relationship Between ACE Score and Cardiovascular Disease

Association between ACE Score and Risk for Cardiovascular Disease

Adjusted Odds Ratio

ACE Score

0 1 2 3 4 5 to 6 7 to 8

Adapted from Dong et al., Circulation 2004
# Health Outcomes Associated with Adverse Childhood Experiences

<table>
<thead>
<tr>
<th>Health Risk Behaviors</th>
<th>Mental Health Conditions</th>
<th>Physical Health Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Depression</td>
<td>Cardiovascular Disease</td>
</tr>
<tr>
<td>Alcohol Abuse</td>
<td>Anxiety</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Drug Abuse/Illlicit Drug Use</td>
<td>PTSD</td>
<td>Emphysema</td>
</tr>
<tr>
<td>High Risk Sexual Behavior</td>
<td>Hallucinations</td>
<td>Cancer</td>
</tr>
<tr>
<td></td>
<td>Suicide</td>
<td>Obesity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver Disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Headaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autoimmune Disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sexually Transmitted Infections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-Reported Health Disability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fetal Death</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mortality</td>
</tr>
</tbody>
</table>

Health outcomes highlighted in red are among the top ten leading causes of death in the US.
Three Levels of Stress

Positive Stress:
Brief increases in heart rate, mild elevations in stress hormone levels

Tolerable Stress:
Serious, temporary stress responses buffered by supportive relationships

Toxic Stress:
Prolonged activation of stress response systems in the absence of protective relationships

Adapted from the Center on the Developing Child Working Paper
Excessive Stress Disrupts the Architecture of the Developing Brain
Early Experience Shapes Developing Brain Architecture
Key Areas of Brain Impacted by Toxic Stress

- Prefrontal Cortex
  - Center of executive functioning
  - Regulates thoughts, emotions, and actions

- Hippocampus
  - Center of short term memory
  - Connects emotion to fear

- Amygdala
  - Triggers emotional responses
### Changes in Brain Architecture Due to Toxic Stress

<table>
<thead>
<tr>
<th>Area of the Brain</th>
<th>Volume Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hippocampus</td>
<td>↓</td>
</tr>
<tr>
<td>Amygdala</td>
<td>↑</td>
</tr>
<tr>
<td>Prefrontal Cortex</td>
<td>↓</td>
</tr>
<tr>
<td>Cerebral</td>
<td>↓</td>
</tr>
</tbody>
</table>
Toxic Stress Disrupts Developmental Trajectories

Developmental outcomes impacted by adversity

- Social Development
- Emotional Development
- Behavior
- Cognition

Romanian orphanage studies – impact of neglect on cognitive skills

<table>
<thead>
<tr>
<th>IQ</th>
<th>Foster Care</th>
<th>Orphanage</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Comprehension</td>
<td>87.48</td>
<td>81.22</td>
<td>110.18</td>
</tr>
<tr>
<td>Perceptual Reasoning</td>
<td>83.81</td>
<td>82.30</td>
<td>106.79</td>
</tr>
<tr>
<td>Working Memory</td>
<td>87.80</td>
<td>83.88</td>
<td>108.92</td>
</tr>
<tr>
<td>Full Scale IQ</td>
<td>81.46</td>
<td>76.16</td>
<td>107.00</td>
</tr>
</tbody>
</table>

Adapted from the Bucharest Early Intervention Project
Toxic Stress Alters Normal Cortisol Stress Response

Graph showing the comparison between normal and prolonged stress responses in cortisol levels over time.
## Effects of Too Much Cortisol on the Body

<table>
<thead>
<tr>
<th>Cortisol Actions</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impair Immune Cell Function</td>
<td>Infections/Cancer</td>
</tr>
<tr>
<td>Change Fat Metabolism</td>
<td>Obesity</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Increased Blood Pressure</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Decrease Bone Formation</td>
<td>Osteoporosis/Fractures</td>
</tr>
<tr>
<td>Toxic to Brain</td>
<td>Depression/Anxiety/Decreased Brain Volumes</td>
</tr>
</tbody>
</table>
Toxic Stress Alters Gene Expression

Adapted from the Center on the Developing Child
How Do Adverse Childhood Experiences Get Under the Skin?

ACEs → Social, emotional, and cognitive impairment → Adoption of health risk behavior → Altered HPA axis and immune activity → Disease, Disability, Social Problems, Early Death
Overview

• Adverse Childhood Experience Study and Toxic Stress

• Childhood Exposure to Racism as a Toxic Stress

• Approaches to Addressing Toxic Stress
The Philadelphia ACE Study

A collaborative, led by the Institute for Safe Families (ISF), to develop and implement research, practice, and policies in urban pediatric settings based on the Adverse Childhood Experiences (ACE) study.
Survey Methods

• Survey was completed as a follow up to the Southeastern Pennsylvania Household Health Survey (SEPA HHS).
  – Survey of over 13,000 children and adults in Southeastern Pennsylvania
  – Comprehensive survey on a broad range of topics

• Philadelphia ACE Survey re-contacted original SEPA HHS Philadelphia respondents who were 18 years or older

• Telephone survey (landline and cell phones)

• Completed by trained male and female interviewers

• Interviews were conducted in English and Spanish

• Interviewed 1,784 Philadelphia adults age 18 and older

• Response rate 67.1%
# Philadelphia ACE Study Questions

<table>
<thead>
<tr>
<th>Conventional ACEs</th>
<th>Expanded ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Abuse</td>
<td>Witnessing Violence</td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>Living in Unsafe Neighborhoods</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>Experiencing Racism</td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td>Living in Foster Care</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td>Experiencing Bullying</td>
</tr>
<tr>
<td>Domestic Violence</td>
<td></td>
</tr>
<tr>
<td>Household Substance Abuse</td>
<td></td>
</tr>
<tr>
<td>Incarcerated Care Provider</td>
<td></td>
</tr>
<tr>
<td>Mental Illness in the Home</td>
<td></td>
</tr>
</tbody>
</table>
Relationship Between Philadelphia ACE Score and Smoking History

![Bar chart showing the relationship between Philadelphia ACE Score and smoking history. The chart compares conventional ACEs, expanded ACEs, and total ACEs across different categories of ACE score (0, 1 to 4, 4+). The adjusted odds ratio for smoking history is depicted for each category.](image-url)
Relationship Between Philadelphia ACE Score and Mental Health

Bar chart showing the adjusted odds ratio for conventional ACEs, expanded ACEs, and total ACEs.

- Conventional ACEs
  - 0: Lower adjusted odds ratio
  - 1 to 4: Higher adjusted odds ratio
  - 4+: Even higher adjusted odds ratio

- Expanded ACEs
  - 0: Lower adjusted odds ratio
  - 1 to 4: Higher adjusted odds ratio
  - 4+: Even higher adjusted odds ratio

- Total ACEs
  - 0: Lower adjusted odds ratio
  - 1 to 4: Higher adjusted odds ratio
  - 4+: Even higher adjusted odds ratio
Relationship Between Philadelphia ACE Score and Cardiovascular Disease
# Perceived Racial Discrimination is Associated with Poor Child Health

<table>
<thead>
<tr>
<th>Health Outcomes</th>
<th>Key Findings</th>
</tr>
</thead>
</table>
| Health Behaviors        | Perceived racial discrimination associated with  
                          Number of alcoholic drinks per week for black adolescents  
                          Alcohol and drug use amongst 9 to 16 year old Native Americans  
                          Tobacco smoking status for African American girls ages 11 to 19                                                                                   |
| Mental/Behavioral Health| Perceived racial discrimination associated with  
                          Depression among African American Adolescents  
                          Higher depressive symptoms amongst Puerto Rican children  
                          Internalizing and externalizing behaviors and delinquency amongst children and youth                                                              |
| Physical Health         | Perceived racial discrimination associated with  
                          Insulin resistance amongst girls ages 14 to 16 but not boys  
                          Adverse pregnancy outcomes  
                          Low birth weight  
                          Prematurity  
                          No association found between perceived racial discrimination and high blood pressure                                                                |

Adapted from Pachter and Garcia Coll, Journal of Developmental & Behavioral Pediatrics 2009
Association Between Racial Discrimination and Child Health by Age Group

<table>
<thead>
<tr>
<th>Age</th>
<th>Total studies</th>
<th>Health risk behaviors</th>
<th>Mental health conditions</th>
<th>Behavioral problems</th>
<th>Physical health conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 to 5 years</td>
<td>7</td>
<td>--</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 to 11 years</td>
<td>43</td>
<td>15</td>
<td>30</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>12 to 18 years</td>
<td>114</td>
<td>38</td>
<td>87</td>
<td>54</td>
<td>2</td>
</tr>
</tbody>
</table>

Adapted from Priest et al., *Social Science & Medicine*, 2013
Direct and Indirect Influences of Racism on Toxic Stress

- Neighborhood & Community Level ACEs (Racism)
- Family & Household Level ACEs (Nurturing Parenting)
- Toxic Stress
- Child
Perceived Discrimination Decreases the Quality of Mother-Child Relationships

<table>
<thead>
<tr>
<th>Maternal perceived racial discrimination</th>
<th>Maternal stress (life events, financial strain, job stress)</th>
<th>Maternal psychological functioning (anxiety and depression level)</th>
<th>Nurturing mother child relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td>No</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td>Yes</td>
<td>↑</td>
<td>↑↑</td>
<td>↓↓</td>
</tr>
</tbody>
</table>

Adapted from Murry et al., *Journal of Marriage and Family* 2001
Overview

• Adverse Childhood Experience Study and Toxic Stress

• Childhood Exposure to Racism as a Toxic Stress

• Approaches to Addressing Toxic Stress
Mitigating the Impact of Toxic Stress

Nurturing Supportive Relationships
Strategies to Address Toxic Stress

- Parent support programs
  - Home visiting programs
  - Parent Child Interaction Therapy
- Promoting healthy coping skills (exercise and mindfulness)
- Social emotional skill development
- Leveraging relationships with community based programs and services that address family stressors
The Safe Environment for Every Kid Model

**SEEK** (Intervention)
Trained HPs, Parent Screening Questionnaire, + social worker. All families receive SEEK

- Assigned practices
- Subset of mothers recruited at practices
- Initial Survey
- 6 Mo. Survey
- 12 Mo. Survey
- Medical Chart & CPS Record Review

**Standard Care (Control)**
All families receive standard pediatric primary care

Adapted from Dubowitz et al., *Academic Pediatrics* 2012
Decreased CPS Reports and Physical Assault in SEEK Intervention Group

<table>
<thead>
<tr>
<th></th>
<th>Intervention (N = 308)</th>
<th>Control (N = 250)</th>
<th>Odds Ratio</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Families With at Least 1 CPS Report, n(%)</td>
<td>41 (13.3)</td>
<td>48 (19.2)</td>
<td>1.5</td>
<td>0.045</td>
</tr>
<tr>
<td>Physical assault severe or very severe, Mean (SD)*</td>
<td>0.11 (0.75)</td>
<td>0.33 (1.96)</td>
<td>--</td>
<td>0.04</td>
</tr>
</tbody>
</table>

* Scores from Parent-Child Conflict Tactics Scale

- Health professionals endorsed increased comfort in screening and addressing risk factors for ACEs
- Intervention increased clinic screening rates for risk factors for ACEs – 25% increase
- Addressing patient psychosocial problems DID NOT require additional provider time
- Implementation of SEEK cost approximately $5.12 per family

Adapted from Dubowitz et al., *Academic Pediatrics* 2012
Summary

• Toxic stress negatively influences life long health through changes in brain architecture, stress reactivity, and gene regulation
• Racial discrimination and other stressors external to the home can have direct and indirect influences on toxic stress
• Emerging strategies to decrease childhood exposure to toxic stress
Thank you
Racial Socialization & Health: The Child Advocate’s Role

Ashaunta T. Anderson, MD, MPH, MSHS, FAAP
Racism and Its Impact on Children’s Health
APA/APHA Webinar
October 13, 2015
What is racial socialization?
Racial Socialization Defined

Messages and practices that communicate race status pertinent to:

- 1) Personal and group identity
- 2) Intergroup and interindividual relationships
- 3) Position in the social hierarchy

Why do we care about this?
Racial Socialization and Health

- Racial socialization leads to positive racial and ethnic identity
  

- Ethnic identity is a protective factor for health in the adult minority population

- The mechanisms of how these effects occur are poorly understood
  
Racial Socialization and Health

Exposure to racial discrimination

- Childhood experiences of racial discrimination (eg, teasing, bullying, isolation)
- Observation of parent, family member, and peer experiences of racial discrimination
- Quality of parenting and racial socialization

Exposure at the macrosystem (structural) level:
- Media
- Schools (eg, teachers)
- Social, political, and economic policies
- Police and other adults

Psychological and biological responses

Psychological distress:
- Decreased self-efficacy
- Depression
- Hopelessness
- Anxiety
- Anger/aggression
- Perceptions of injustice/lower levels of empathy

Changes in allostatic load:
- Decreased immune function
- Increased cortisol levels
- Increased blood pressure
- Increased heart rate

Child health outcomes and disparities

Health outcomes and disparities related to:
- Increased likelihood of low birth weight or premature birth
- Increased risk behaviors such as drug use and/or sexual risk-taking
- Increased aggression/violent behaviors
- Increased risk of chronic illness such as cardiovascular disease
- Increased susceptibility to infectious diseases such as HIV/AIDS

Health Equity Action Research Trajectory (HEART)

Do children even experience racism?
The development of racial prejudice or feelings of inferiority is reliably assessed at age 3.

Clark Doll Studies

- Give me the doll you like to play with or the doll you like best
  - 67% of black children preferred the white doll
  - 5-year-olds chose the white doll 75% of the time


- Replicated in other studies
  - CNN: “Study shows how children view race bias”

Video at: https://www.youtube.com/watch?v=EQACkg5i4AY. 2010.
What can we do about it?
Racial Socialization Defined

Messages and practices that communicate race status pertinent to:

- 1) Personal and group identity
- 2) Intergroup and interindividual relationships
- 3) Position in the social hierarchy

Racial Socialization Outcomes

**Ethnic pride**


**Dose-dependent use of coping methods associated with increased self-efficacy and less distress**

Racial Socialization Outcomes

- Improvements in:
  - Socioemotional function
  - Self-esteem
  - Behavioral competence
  - Depression and anger
  - Parental involvement in children’s schooling
  - Quality of mother-child interactions

What are these researchers counting as racial socialization?
Racial Socialization Categories

- Cultural Pride Reinforcement
- Preparation for Bias
- Promotion of Mistrust
- Spirituality/Religiosity
- Extended Family Caring
Racial Socialization: The Basics

- Cultural Pride Reinforcement is good.
- Preparation for Bias is okay.
- Promotion of Mistrust is bad.

Anderson AT & Ellison A. *AAP News*. August 2015:11.
Why is cultural pride reinforcement good?
Cultural Pride Reinforcement

Outcomes

- Positive associations with:
  - Academic achievement
  - Anger control
  - Less frequent physical aggression

Cultural Pride Reinforcement and Self-Esteem

- Pride and knowledge of African American culture positively associated with self-esteem

Cultural Pride Reinforcement (CPR) and Anxiety

- Stronger CPR predicted less child anxiety
- For children with high exposure to mental health risk factors, those whose parents used more CPR had lower anxiety

Cultural Pride Reinforcement (CPR) and Anxiety

Racial Socialization and Age

5 Action Items for Child Advocates
1. Know the Basics

- Cultural Pride Reinforcement is good.
- Preparation for Bias is okay.
- Promotion of Mistrust is bad.
2. Listen to Parents

- Learn how parents in your community feel and act when their children encounter race-related issues
  

- Parent training programs should incorporate teaching of appropriate racial socialization strategies
  

- Effective Parenting Program has race-specific curricula with racial socialization content
  
3. Talk with Parents

- Consider experiences with racial discrimination when screening for adverse childhood experiences.

- Pediatric anticipatory guidance may incorporate counseling on racial socialization strategies.
3. Talk with Parents: Enhance Anticipatory Guidance

- **Screen time**
  - Parents screen & discuss racialized content of media with children

- **School readiness**
  - Promote cultural pride through book sharing programs

- **Race-based bullying**
  - Reserve preparation for bias for older children
4. Know Your Local Partners

- Partner with social support agencies and mental health professionals

- Knowledge on racial socialization informs intervention design to promote positive mental health in children

5. Know Your National Partners

- Partner with national organizations like NAACP, Children’s Defense Fund, & National Urban League

- Children’s Defense Fund has posted 10 Rules to “Get Home Safely” regarding police encounters

[Link to rules]

Video at: [YouTube link]
Thank You!

Questions?