

# **THE UNSOLVED MYSTERY OF RACIAL DISPARITIES IN BIRTH OUTCOMES: IS RACISM-RELATED STRESS A MISSING PART OF THE PUZZLE?**

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**NIH SUMMIT: THE SCIENCE OF  
ELIMINATING HEALTH DISPARITIES**

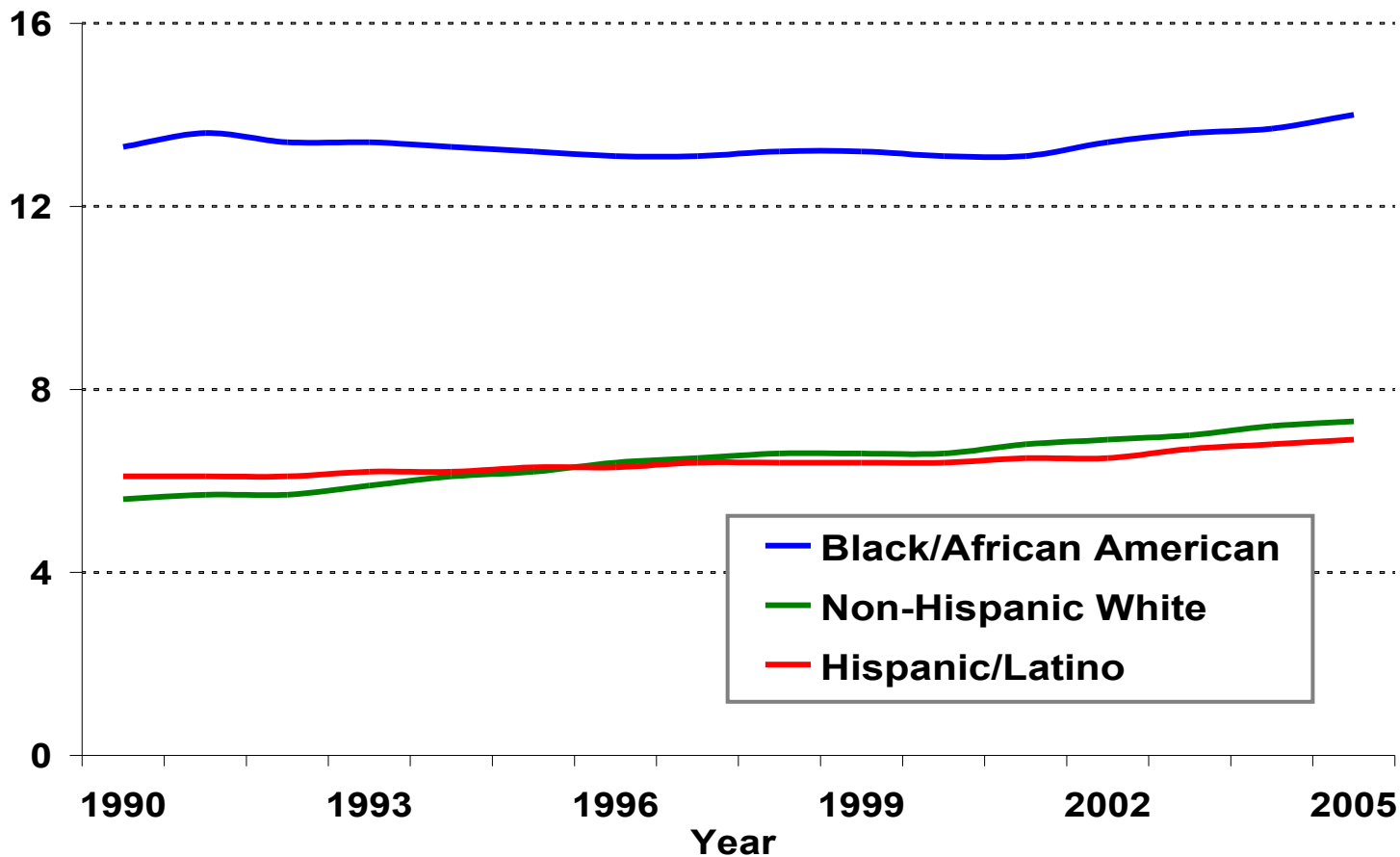




# **RACIAL DISPARITIES IN BIRTH OUTCOMES: SEEING CLUES IN THE PATTERNS**

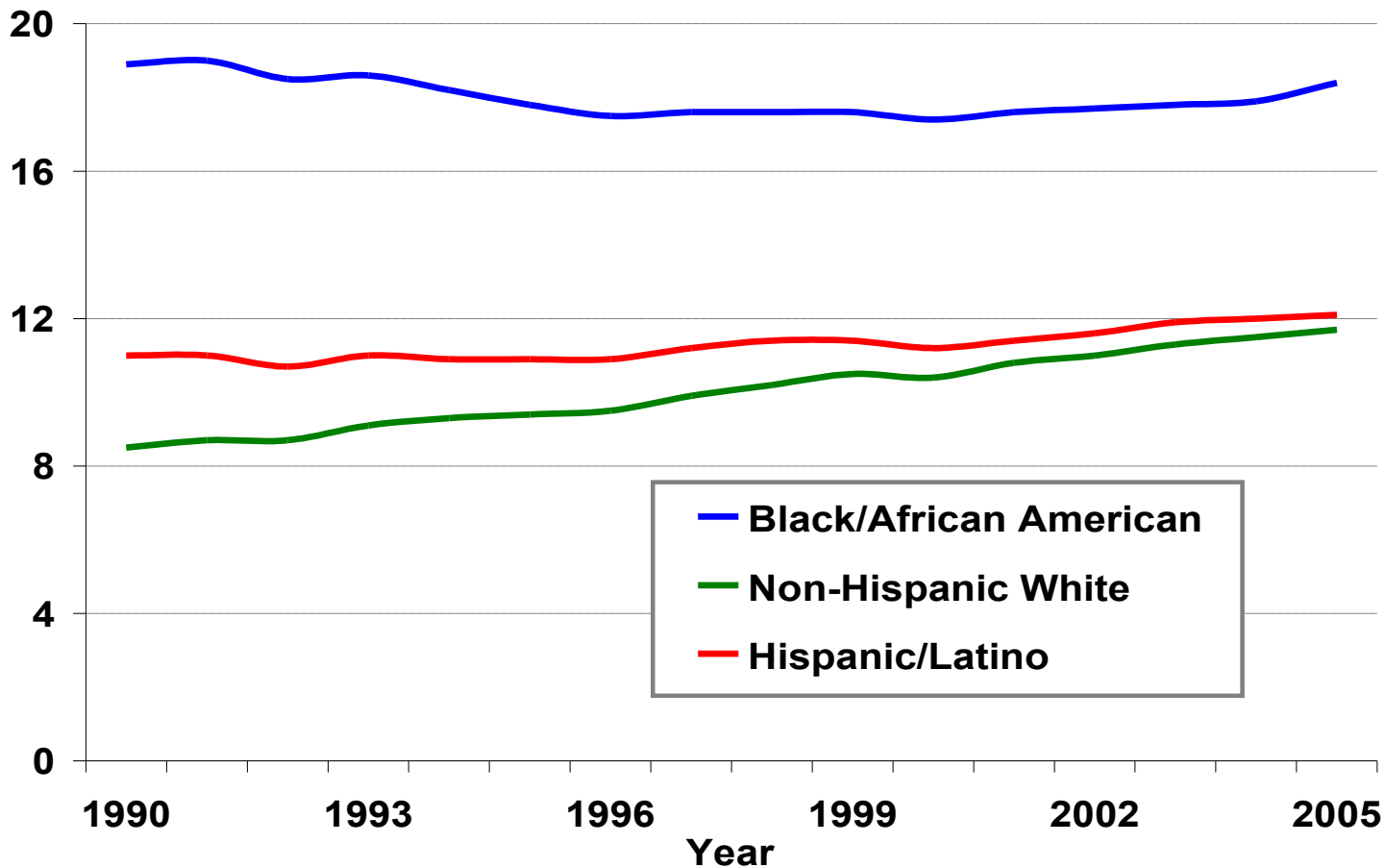
- **Large, unexplained Black-White disparities in low birth weight (LBW) and preterm birth (PTB)**
- **Why the differences are likely to involve social factors**
  - **Racism-related stress could be important**
    - **Stress related to economic hardship/insecurity**
    - **Stress related to experiencing/anticipating discrimination**
    - **Across the life course**
- **Implications for science, policy, & practice**

# PERSISTENT DISPARITIES: LOW BIRTH WEIGHT



Natl Vital Stat Rep. 2007

# PERSISTENT DISPARITIES: PRETERM BIRTH

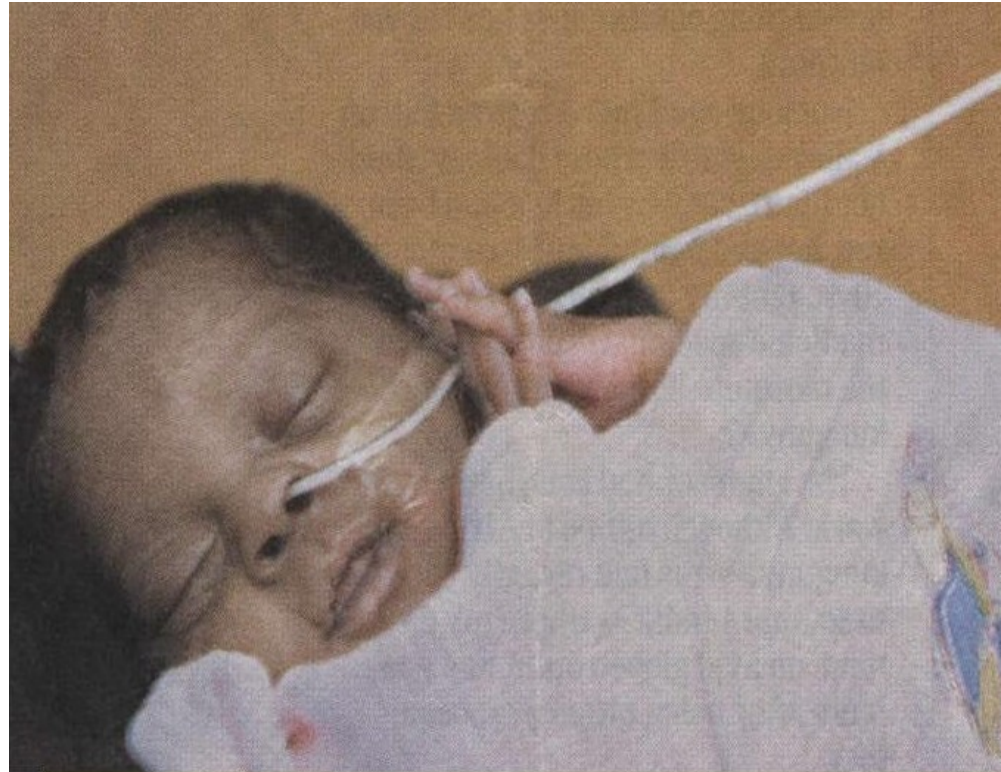


Natl Vital Stat Rep. 2007



# WHY DO WE CARE ABOUT BIRTH OUTCOME DISPARITIES?

- **Infant mortality**
- **Serious disability**
  - **Cognitive**
  - **Emotional-behavioral**
  - **Physical**
- **Family burden**
- **Economic costs**
  - **Medical care**
  - **Special education**
  - **Social services**
  - **Lost productivity**
- **Starting life unequal**





# CAUSES OF ADVERSE BIRTH OUTCOMES

## Known

- Tobacco
- Alcohol
- Illegal drugs
- Low pre-pregnancy weight
- Inadequate weight gain
- Short maternal stature
- Chronic disease

## Suspected

- Infections?
- Environmental toxins?
- Physically demanding work?
- Genes? Gene-environment interactions?
- Psychosocial factors?
  - Stress?
  - Lack of social support as a stressor &/or modifier of stress effects



# CAUSES OF BLACK-WHITE DISPARITIES

- **Largely unexplained by:**
  - **Tobacco**
  - **Alcohol**
  - **Drugs**
  - **Weight/weight gain**
  - **Maternal stature**
  - **Chronic disease**
- **Infections?**
  - **Rx hasn't always improved outcomes**
- **Environmental toxins?**
- **Genetic component?**
  - **No single LBW/PTB gene –complex cascades of events**
  - **Some patterns don't fit**
  - **Gene-environment interactions?**
- **Stress?**
- **Social support?**



## **UNDERSTANDING THE CAUSES OF BIRTH OUTCOME DISPARITIES**

**More questions than  
answers, but what can  
we learn from the  
social patterns?**





## **RATIO OF LOW BIRTH WEIGHT RATES AMONG BLACKS VS WHITES AT DIFFERENT INCOME LEVELS**

<b>Family income in relation to the federal poverty level *</b>	<b>Black to White ratio</b>
<b>Poor (at or below the poverty line)</b>	<b>1.3 times</b>
<b>Near-poor (1-2 times the poverty line)</b>	<b>1.6 times</b>
<b>Not low-income (more than 2 times the poverty line)</b>	<b>Around 2.5 times</b>

California Maternal & Infant Health Assessment (MIHA), '99-'05

\* During '99-'05, federal poverty level for a family of 4 was around \$17,000-\$20,000.



## **DISPARITIES BY NATIVITY (IMMIGRANT VS US-BORN)**

### **Latinas/Hispanics**

- **Immigrants have good birth outcomes**
  - **despite poverty, less schooling, less care**
- **US-born have unfavorable outcomes**

### **Blacks**

- **African/Afro-Caribbean immigrants have relatively good outcomes**
- **US-born (African-Americans) have unfavorable outcomes**

- **Difficult to explain by genetics alone**
- **Immigrants would have a larger “dose” of the adverse gene(s)**



## **DISPARITIES BY NATIVITY (IMMIGRANT VS US-BORN)**

- **Differences by nativity persist even after considering healthy immigrant selection and healthier behaviors**
- **Immigration is stressful, so difficult to explain by stress in general**
- **What about chronic stress, especially at critical periods, e.g., awareness of discrimination in childhood for US-born?**
- **Resources that buffer effects of stress?**



## **A ROLE FOR STRESS: NOT PROVEN, BUT BIOLOGICALLY PLAUSIBLE**

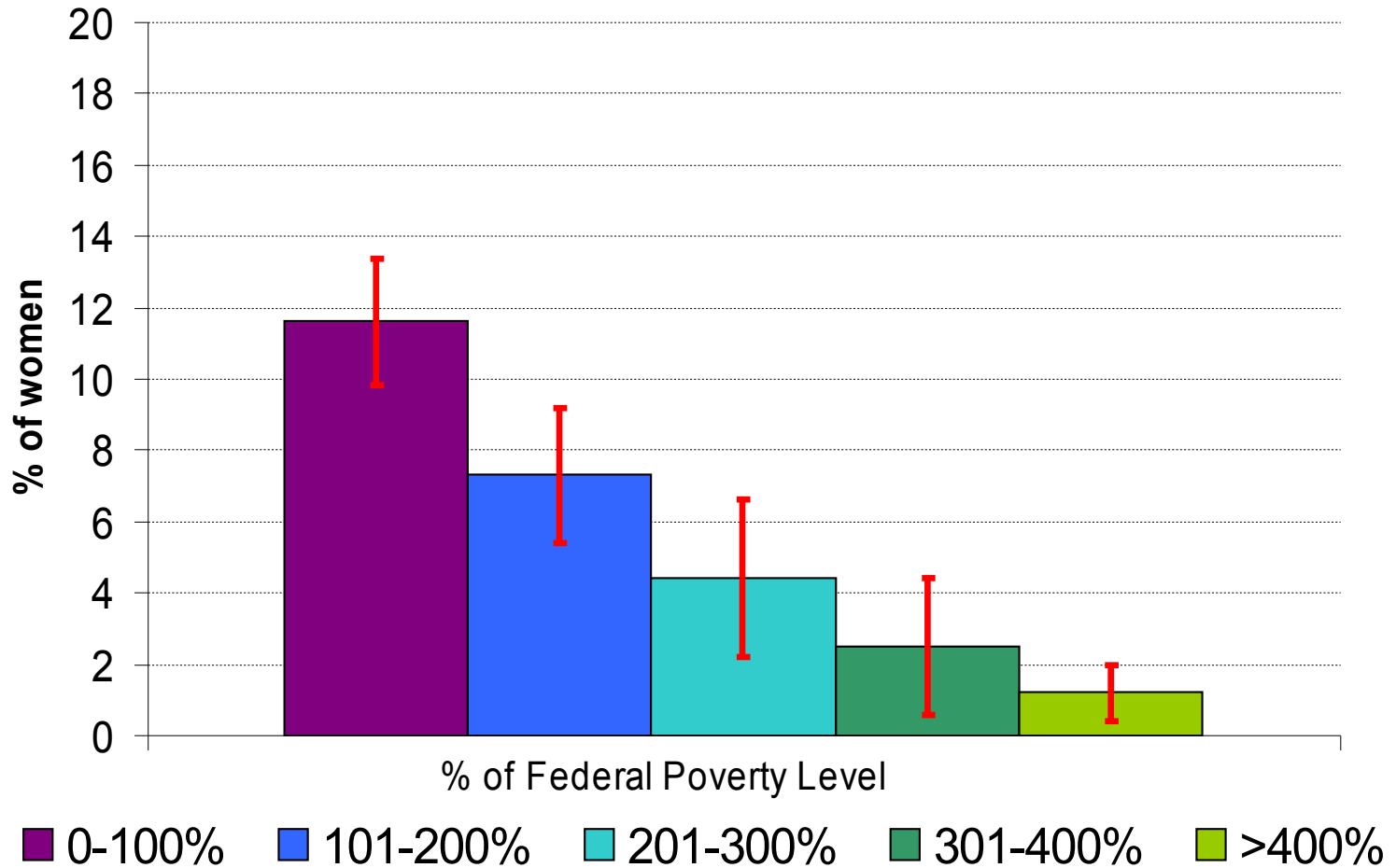
- **Physiological pathways documented in humans**
- **Neuroendocrine pathways (Hypothalamic-Pituitary-Adrenal [HPA] axis) & Sympathetic Nervous System**
  - **Release of “stress hormones” during pregnancy (cortisol, epinephrine, norepinephrine)**
  - **Could → premature labor (and LBW)**
    - **via effects on Corticotrophin Releasing Hormone and vascular, immune, and/or inflammatory processes**
  - **Chronically high cortisol before pregnancy may → dysregulation of HPA axis and immune responses**
    - **May → increased stress reactivity and/or susceptibility to infection later**



## WHO HAS THE MOST STRESS?

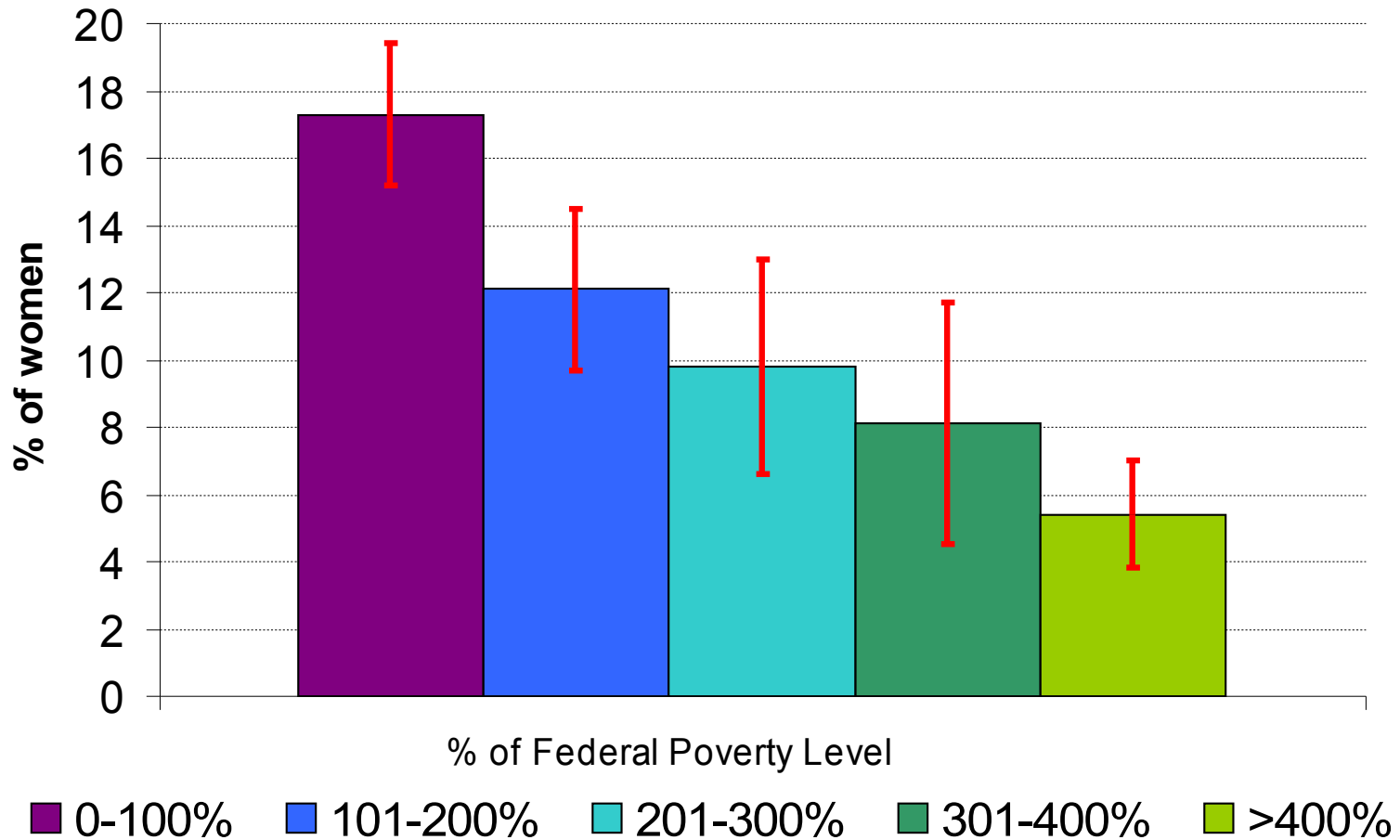
- **Black vs White women experience more poverty and lower incomes**
- **We have found striking income gradients & Black-White disparities in stressors among pregnant women in California**
- **Range of psychosocial stressors associated with poverty/lower income, e.g.,**
  - **Divorce/separation, job loss, financial insecurity, food insecurity, domestic violence, lack of social support**

# SEPARATED OR DIVORCED DURING PREGNANCY

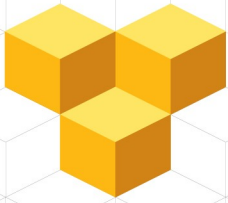


MIHA 2003

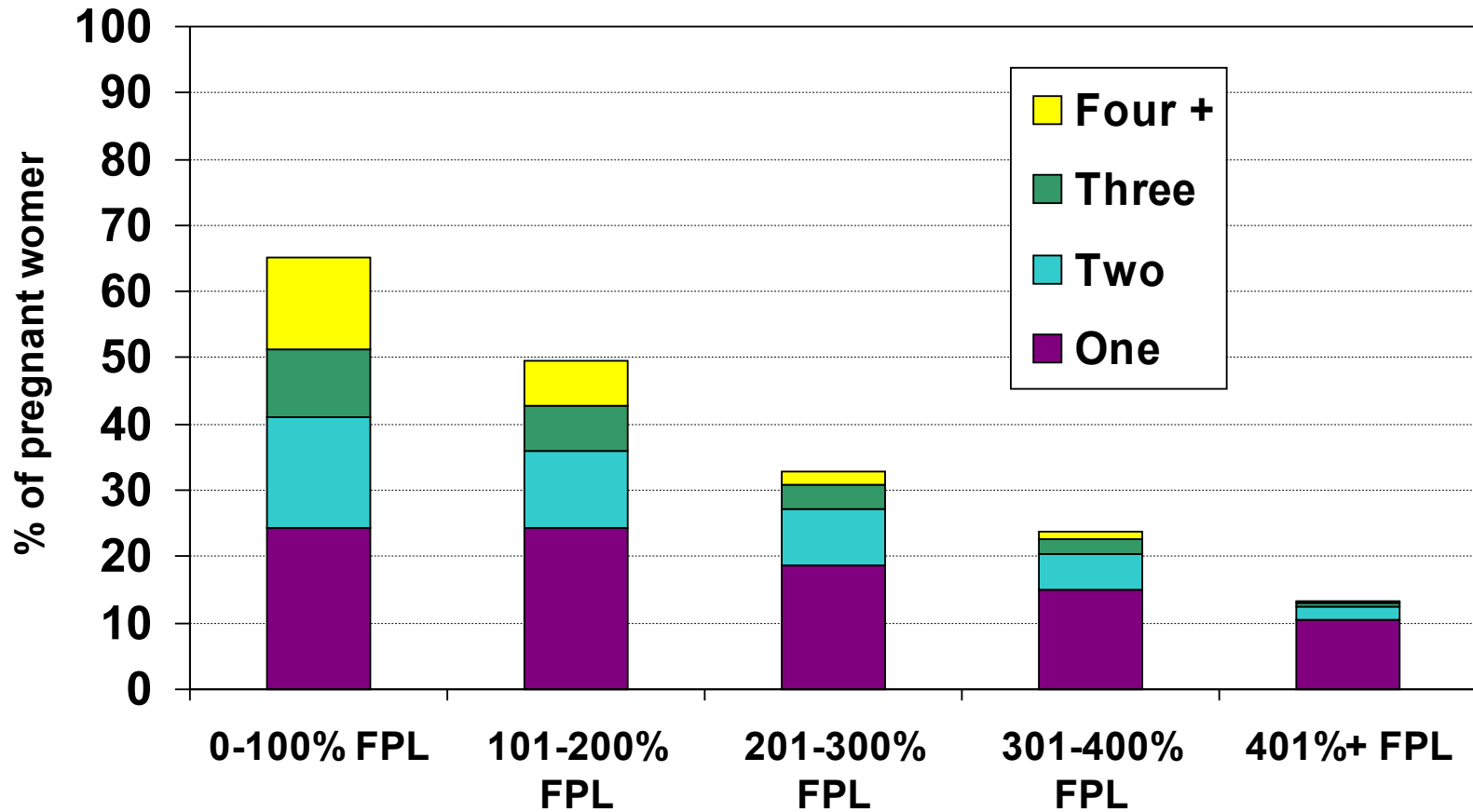
# PARTNER'S JOB LOSS DURING HER PREGNANCY (SIMILAR PATTERN FOR HER JOB LOSS)



MIHA 2003



# TOTAL NUMBER OF HARDSHIPS\* EXPERIENCED DURING PREGNANCY



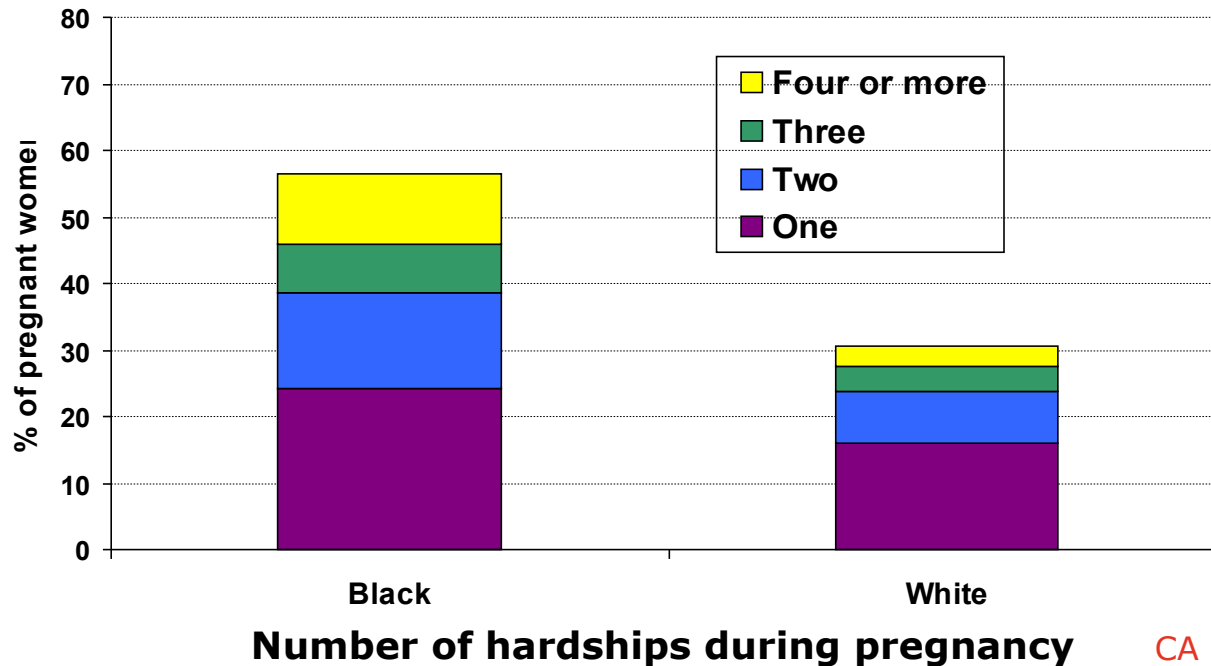
\*Hardships = 'economic hardship', 'food insecurity', 'no practical support', 'no emotional support', 'separated/divorced during pregnancy', 'homeless', 'job loss of spouse/partner', 'her own involuntary job loss', 'incarceration', 'had a lot of unpaid bills', & 'domestic violence'.

MIHA 2002-2006



## DISPARITIES IN HARDSHIPS, BY INCOME AND RACE

- Similar patterns of income disparity in hardships in data from 19 PRAMS states
- And examining by race in California: Black women had higher prevalence of each hardship
  - And they experienced more hardships



CA MIHA 2003-2004



## UNMEASURED SOCIAL FACTORS: HOW COULD A NEIGHBORHOOD AFFECT HEALTH?



- **Physical danger**
- **Safe places to exercise**
- **Lead, air pollution, mold**
- **Access to healthy food**
- **Role models, peer pressure (e.g., for substance abuse)**
- **Social networks & support**
- **Stress, fear, anxiety, despair**
- **Blacks & Whites of similar income/education levels live in different kinds of neighborhoods**
- **Neighborhood conditions often not considered in studies**



## LIFE COURSE EXPOSURE TO STRESS

- **Poverty/lower income in childhood, adolescence (& adulthood before pregnancy) could be stressful**
- **Comparing Black & White adult women of a given current income or educational level, the Black women are more likely to have experienced lower socioeconomic conditions as children**
- **Weathering hypothesis – cumulative stress**
- **Considering larger racial disparity among higher income women: Could past exposures lead to LBW/PTB in current pregnancy, if a woman is no longer poor?**
  - **Yes, e.g., via neuroendocrine and/or immune dysregulation**
- **Childhood conditions are rarely examined in birth outcome studies**



## **Racism As A Source Of Chronic Stress – Cumulative Across Life Course**

- **Structural racism exposes Black women to more stress related to poverty and worse living conditions including neighborhood conditions**
- **In addition, concern about being treated unfairly, based on being in a group that has historically suffered discrimination, could be stressful**
  - **even without overt incidents of clear-cut discrimination**
- **Some studies have linked racism with adverse birth outcomes; some have not**
- **Inadequate measures; we (Nuru-Jeter et al.) want to systematically develop measures for birth outcomes research**
- **Could racism –particularly experiences during childhood--help explain racial disparities and immigrant paradoxes in birth outcomes?**



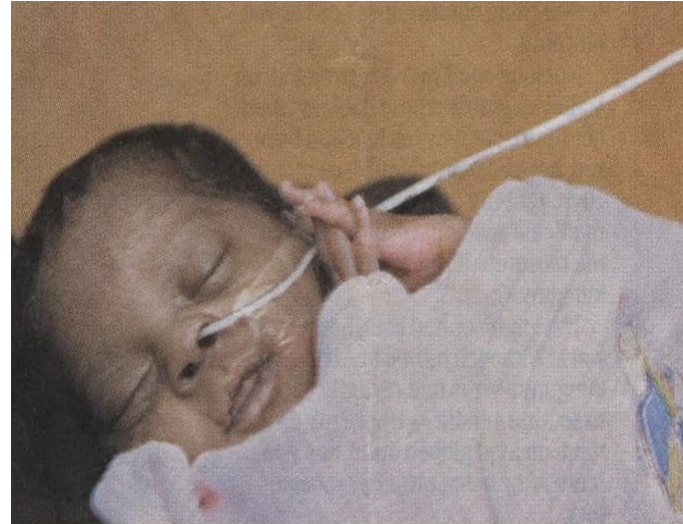
# **EXPERIENCES OF RACISM AMONG CHILDBEARING WOMEN: EXPLORATORY STUDY FUNDED BY CDC**

- **Six focus groups with socioeconomically diverse African-American women in 3 Northern California cities**
- **Overt incidents involving themselves &/or loved ones; childhood incidents especially prominent**
- **Across multiple domains, e.g., work, school, street, shopping...**
- **Pervasive vigilance, anticipating threats to themselves or their children**
- **Poor women more likely to internalize?**



# RACIAL DISPARITIES IN BIRTH OUTCOMES: SEEING CLUES IN THE PATTERNS

- **The social patterns (by income, education, & nativity) tell us that social factors are likely to be involved**
- **Racism-related stress could be important**
  - **Stress related to economic hardship/insecurity**
  - **Stress related to experiencing/anticipating discrimination**
  - **Across the life course**
- **Biologically plausible albeit unproven**
- **Not typically measured**





# **RACISM AS A HEALTH ISSUE: IMPLICATIONS FOR SCIENCE, POLICY & PRACTICE**

- **Do we need to study whether racism harms health?**
- **We need more multi-level, life course research on birth outcomes –linking psychosocial factors (including stress) & biological consequences; measurement work to support it**
- **But we know enough now to call for multi-sector efforts to address the health-damaging effects of poverty, poor education, & impoverished neighborhoods**
  - **Bold experiments with promising interventions**
  - **No quick fixes – outcomes may lag by generations**
- **Public health leaders –in research, policy, & practice--need to provide leadership in affirming a commitment to equity**
  - **A society in which everyone achieves her/his full health potential: Birth outcome disparities are a sentence to health disparities across the life course**
  - **For pragmatic and ethical reasons**
  - **A fair chance starting from the beginning of life**