The Roots of Inequality: Early-life Adversities and Adult Health

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Life-course perspectives on early-life experiences and adult health

- **Critical period**: Exposure to toxic environments in childhood have lifelong effects on the structure and function of body systems.

- **Life course pathway**: Early-life circumstances influence subsequent socioeconomic, psychological, and lifestyle trajectories, which in turn determine adult health outcomes.

Felitti et al. (1998); Ben-Shlomo & Kuh (2002)
What are adverse childhood experiences?

**Socioeconomic disadvantage**
- Parents in low social class
- Economic hardship

**Household dysfunction**
- Parents divorced
- Parents with mental illness
- Parents with substance abuse/incarceration

**Maltreatment**
- Neglect and un-nurturing parenting
- Emotional, physical, and sexual abuse
Adverse childhood experiences (ACEs) are common.

The findings are consistent across different populations and generations.

Felitti et al. (1998); Sacks, Murphey & Moore (2014)
Most common adverse childhood experiences for children (birth-17 years old) in **Wisconsin**

- **25%** Economic hardship
- **20%** Parental divorce
- **10%** Parental drug/alcohol abuse
- **10%** Parental mental illness
- **8%** Exposed to violence

- Just under **half (46%)** of children in **Wisconsin** have experienced **at least one adversity**, and economic hardship is the most common.

Data: 2011/12 National Survey of Children’s Health
Sacks, Murphey & Moore (2014)
Adverse childhood experiences are related to numerous health outcomes over the life course.
Why gender matters

A key indicator of inequality and health disparity

- **Differential exposure** to early-life adversities
  - Sexual abuse (men < women)

- **Differential health effects** of early-life adversities
  - Childhood SES and adult obesity (men < women)

- **Gender-specific mechanisms**
  - Stress responses, resources to cope with stressors, and socialization differ by gender

Bird & Rieker (2008); Denton et al. (2004); Lee, Ryff, & Coe (2018)
Differential Exposure

Social demographic characteristics (gender, race/ethnicity) are important determinants of early-life adversities.

• Childhood abuse/neglect
Prevalence of confirmed maltreatment among American children 12.5% in 2011

Girls (13%)
Boys (12%)

- **Girls** have a slightly higher cumulative prevalence than boys (13% vs. 12%).

- **Black girls** (22%) vs **White boys** (10%)

Wildeman et al. (2014)
Women are more likely than men to be abused in childhood and to experience more severe forms of childhood abuse.

Data: Midlife in the U.S
Lee et al. (2018)
Differential Effects by Gender

The effects of early-life adversity on adult health differ by gender.

- Obesity
- Cardiovascular disease
Childhood socioeconomic status (SES) and adult obesity

- Early-life SES is a robust predictor of adult obesity, with a greater adverse impact on women than men.
Childhood poverty and body weight

- **Childhood poverty affects body weight more for women than men during young adulthood.**

Data: National Longitudinal Study of Adolescent Health
Lee et al. (2013)
Effects of childhood SES on body weight increase from midlife to old age particularly for women.

At aged 60-80
- For men with 5 ft 9 in, the BMI difference (1.4) = 10 pounds
- For women with 5 ft 3 in, the BMI difference (2.2) = 15 pounds.

Data: Midlife in the US; Lee & Park (In progress)
• **Early-life SES** is a robust predictor of **adult CVD**, with a greater adverse impact on women than men.
Mother’s education and blood pressure in young and middle adulthood for **men**

Data: the CARDIA Study
Janicki-Deverts et al. (2012)
Mother’s education and blood pressure in young and middle adulthood for **women**

Data: the CARDIA Study
Janicki-Deverts et al. (2012)
Childhood disadvantage and prevalence of heart attack in midlife

- Compared to women from advantaged families, women from disadvantaged or fatherless families are more like to have a heart attack in midlife.

Data: Health Retirement Survey
Hamil-Luker & O’Rand (2007)
Cumulative disadvantage

• Relative to non-disadvantaged children, disadvantaged children will be less successful in school and, as adults, in the labor market, which in turn affects health outcomes

Underlying mechanisms

1. Adult socioeconomic status (SES)
Childhood poverty, educational achievement, and employment in adulthood

<table>
<thead>
<tr>
<th></th>
<th>Never Poor</th>
<th>Temporarily poor</th>
<th>Persistently poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school diploma by age 20</td>
<td>93%</td>
<td>83%</td>
<td>64%</td>
</tr>
<tr>
<td>Completed college by age 25</td>
<td>37%</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>Consistently employed ages 25-30</td>
<td>70%</td>
<td>64%</td>
<td>35%</td>
</tr>
</tbody>
</table>

- *Childhood poverty* determines *educational and occupational achievements* *in adulthood.*

Data: Panel Study of Income Dynamics (1968-2009)
Ratcliffe (2015)
Reinforcing associations between socioeconomic status (SES) and BMI over the life course

Chains of Risk

- **Women who grew up in low SES families** are more likely than men to **weigh more in adolescence**, which in turn is linked with **reduced academic achievement in high school** as well as **low SES in midlife**.

- **Low SES in midlife further increases the risk of obesity in midlife**.

Data: Wisconsin Longitudinal Study
Pudrovska et al. (2014)
Theories of health lifestyles

- The decisions people make with respect to health-related behaviors are largely a matter of individual choices shaped by social environments (e.g., childhood SES).
  - Physical activity
MEN WOMEN

Adults from low SES families are less likely to engage in moderate or vigorous exercise in midlife.

Data: Midlife in the US; Lee et al., (2018)
**Childhood SES and types of physical activity in midlife**

<table>
<thead>
<tr>
<th></th>
<th>Leisure</th>
<th>Work</th>
<th>Chores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOMEN</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High SES</td>
<td>11%</td>
<td>3%</td>
<td>86%</td>
</tr>
<tr>
<td>Low SES</td>
<td>25%</td>
<td>10%</td>
<td>65%</td>
</tr>
<tr>
<td>Men</td>
<td>7%</td>
<td>13%</td>
<td>80%</td>
</tr>
<tr>
<td>Low SES</td>
<td>23%</td>
<td>21%</td>
<td>56%</td>
</tr>
</tbody>
</table>

- **People from low SES families** are more likely to participate in physical activity related to work or chores, but less likely to participate in *leisure-time physical activity*.

- **Women from low SES families** were exceedingly **less likely** to complete **high amounts** of physical activity through *leisure*.

Data: Midlife in the US; Lee et al. (2018)
Underlying mechanisms

3. Life-course transitions

- **Major life events and adult health**, such as graduating from college, getting married, or becoming a parent

- **The transition to parenthood** is a life event that links the association between early-life SES and adult health
Childhood SES disadvantage and the risk of having a first child at different timings

<table>
<thead>
<tr>
<th>As childhood disadvantage increases.....</th>
<th>Ages 24+</th>
<th>Ages 20-23 (early young adulthood)</th>
<th>Under age 20 (teenager)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOMEN</td>
<td>1.00 (reference)</td>
<td>1.48</td>
<td>1.95</td>
</tr>
<tr>
<td>MEN</td>
<td>1.00 (reference)</td>
<td>1.52</td>
<td>1.68</td>
</tr>
</tbody>
</table>

- Both men and women from low SES families were more likely to have their first child as teenagers or in early young adulthood.

Data: Midlife in the US; Lee & Ryff (2016)
Low childhood SES can adversely affect cardiometabolic health for women via reproductive events.

- Hyperglycemia
- Increased GWG
- Possible GDM
- Type 2 diabetes
- Hypertension
- Increased BMI over time

GWG = gestational weight gain
GDM = gestational diabetes mellitus

Inspired by Nicholson (2014)
Pathways linking early transition to heart health in adulthood

- Having a **first child at younger ages** is linked with **lower adult SES**, more **distress**, and **poor health behaviors** in midlife.

- These factors partially account for the association between **early parenthood** and the **onset of heart problems**.

Data: Midlife in the US; Lee & Ryff (2016)
Policies and Interventions

Macro- and micro-level approaches

Macro level
• Social and public policies

Micro level
• Family- and individual-level interventions
Social policies for childhood adversities

• Public awareness of life-long health consequences

• Prevent exposure to traumatic/chronic stress in early life

• Reduce income disparities across social classes

• Provide public health infrastructure
  – Better welfare systems for disadvantaged children
Family- and individual-level interventions

• Family-level interventions
  – Warm parenting (e.g., affection and healthy attachment)

• Individual level: shift-and-persist strategies
  – Shift: reframing the meaning of a stressor to be less threatening, seeing the good that can come from difficult life situations
  – Persist: developing purpose in life and hope despite adversity
Buffering effect of warm parenting

- High levels of *maternal nurturance* offset the *biological burden (metabolic syndrome)* from having poorly educated parents.

Miller et al. (2011)
Shift-and-persist strategies have the potential to regulate immune function among individuals from low SES.

Chen et al. (2015)
Conclusions

1. Early-life adversity is a **public health concern**.

2. **Women** may be **more vulnerable** to cardiometabolic health problems than men when they experienced childhood adversity.

3. Early-life adversity is linked with poor health in later life via negative **economic, behavioral, psychosocial, and life-transition pathways**.

4. **Social policies** and **individual-level interventions**, taken together, may help reduce the adverse impacts of early-life adversity.
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