Adolescence and Intergenerational Health Equity

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Global Adolescent Health Equity
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Intergenerational transfer of advantage
Famine and stunting: 3 vulnerable windows

Cambodia: Women’s height and stunting by age at famine 1975-79

- Unborn
- Preconception
- First 1000 days
- Pubertal Growth
- Adolescents

Height, cm vs. Below 145 cm, %

Age at famine, 1977
Where have the investments been?

“Where have the investments been?”

“The highest rate of return in early childhood development comes from investing as early as possible, from birth through age five, in disadvantaged families.” 2012
Is the first 1000 days starting too late?

1. In pregnancy and offspring growth
2. In reproductive processes
3. In the processes that influence 1 & 2
1 Too late in pregnancy and offspring growth?
# 2 Too late in the reproductive process?

<table>
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<tr>
<th>Puberty</th>
<th>Adolescent</th>
<th>Periconception</th>
<th>Antenatal Development</th>
<th>Postnatal Development</th>
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**Puberty to the next generation**
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Adolescence and human potential

Nutritional, physical, social and cultural environment

Interactive shaping

The pubertal cascade

Subcortical maturation

Prefrontal maturation

High level cognitive, social and emotional capacities

Age

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Social and biological time of in adolescence
High Income Countries

Adapted from Gluckman
Birth rates in females 15 to 19 years: 1970 to 2030

- Low
- Lower middle
- Upper middle
- High

Birth Rate/1000 pa

- 1970-75: 138
- 2025-30: 81
- 1975-80: 120
- 2000-05: 90
- 1980-85: 110
- 2005-10: 60
- 1985-90: 100
- 2010-15: 40
- 1990-95: 90
- 2015-20: 40
- 1995-00: 80
- 2020-25: 30
- 2000-05: 70
- 2025-30: 8
Female transition to parenthood across country income groups

- Low: 50% (2015), 84% (2030)
- Lower middle: 10% (2015), 31% (2030)
- Upper middle: 50% (2015), 84% (2030)
- High: 10% (2015), 31% (2030)
Female secondary school completion change over 2 decades

1990
- 15-19: [Graph showing completion rate]
- 20-24: [Graph showing completion rate]
- 25-29: [Graph showing completion rate]
- 30-34: [Graph showing completion rate]

2010
- 15-19: 88% (High)
- 20-24: 53% (Upper middle)
- 25-29: 46% (Lower middle)
- 30-34: 12% (Low)
A failure of progress.
Paternal stress: intergenerational process involving microRNA
Preconception Mental Health Problems in Women with Perinatal Depressive Symptoms

- Both teen and twenties: 85%
- Teen only case
- Twenties only
- No previous case
Intergenerational intervention in mental health
### Diseases of poverty
- Infectious and vaccine preventable diseases
- Undernutrition
- HIV
- Sexual and reproductive health

### Injuries
- Unintentional injuries
- Violence

### Non-communicable diseases
- Physical disorders
- Mental disorders
- Substance use disorders

### Multi-Burden
- $\geq 2,500$ diseases of poverty DALYs per 100,000 per annum

### Injury Excess
- $\geq 2,500$ injury DALYs per annum
- $< 2,500$ diseases of poverty DALYs per 100,000 per annum

### NCD Predominant
- $< 2,500$ injury DALYs per 100,000 per annum
- $< 2,500$ diseases of poverty DALYs per 100,000 per annum
A Broader Lens for Adolescent Health

A Broader Lens for Reproductive Health & ECD
An intergenerational demographic dividend

Adolescent health & medicine