Life course origins of mental health inequalities in adulthood

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Inequalities in life expectancy

Across the world

82 yrs

37 yrs
47 yrs
57 yrs

Source: World Health Organization, 2011; Photo copyright: Melissa King
Inequalities in life expectancy

Within Canada

82 yrs

69 yrs

77 yrs

Source: http://www.aboriginalgba.ca/; Photo copyright: Melissa King
Inequities are killing people on a "grand scale"

Commission on Social Determinants of Health, World Health Organization

Source: http://www.who.int/social_determinants/thecommission/en/index.html
The Social Determinants of Health

- Age, sex, and genetic factors
- Living and working conditions
  - Work Environment
  - Unemployment
- Social and community networks
  - Education
- General socioeconomic, cultural and environmental conditions
  - Agriculture and food production
  - Housing
  - Water & Sanitation
  - Health Care Services

CAUSAL EXPLANATIONS IN
LIFE COURSE EPIDEMIOLOGY
Life course causal models

- Critical or Sensitive Period effects
- Cumulative effects
- Pathway effects

Source: Figure modified from Kuh D, Ben-Shlomo Y, Lynch J, Hallqvist J. Life course epidemiology. J Epidemiol Comm Health 2003;57:778-783.
Life course processes of status attainment
Socio-economic position over the life course

Parents’ socio-economic position → Offspring’s education → Income, Social Class, Social Status

Birth → Death
Intergenerational mobility

• 1967: Blau and Duncan. *The American Occupational Structure*

Policies to equalize educational opportunity
E.g. Quebec’s universal educational daycare program

*Meeting Early Childhood Needs*

For more information: http://fw.to/SL3EEZC
Test scores by income in the US

Source: http://tinyurl.com/7sqr92f;
Which country has the highest level of intergenerational inequalities?
International comparisons

Source: http://www.economicmobility.org/assets/pdfs/CRITA_FINAL.pdf
Mental health across the life course
Adult SEP and Depression

OR=1.81

Early SEP and adult mental health?

Socioeconomic pathways to depressive symptoms in adulthood: Evidence from the NLSY79

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Causal model: Major depressive episode

Parents’ education → R’s education → R’s socio-economic position → Major depressive episode

Timeline: Conception → Birth → Death
Parents’ education and the risk of major depression in early adulthood in Canada

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Objectives

- To estimate the relationship between mother’s and father’s education and major depressive episode (MDE) of their adult child
- Estimate mediating effects of other risk factors

Potential mediators:
- Adverse Childhood Experiences
- Adult SEP
- Psychosocial functioning
- Physical health
Data and Sample

- **Survey:** National Population Health Survey (NPHS), Statistics Canada
  - Cycles 1-7: Biennial 1994/95 to 2006/07

- **Study population:**
  - 12 to 24 years-old and living with parent(s) in 1994/95
  - Baseline MDE: reported at least once between 1994/95-2002/03
  - ACEs: reported in 1994/95, 2000/01 or 2006/07
  - Follow-up MDE: reported in 2004/05 or 2006/07
  - Marital status, education, student status, income adequacy, employment status, chronic stress, mastery, and number of chronic conditions: reported in 2000/01 or 2002/03

- Total n=1267
Design

- Structure of longitudinal design
Variables

- **Early-life SEP** (mother’s and father’s education)
  - ≥ high school (ref.), < high school, or missing

- **Potential mediators:**
  - Early-life: ACEs (*Childhood and Adult Stress Index*)
  - Adult: SEP (education, student status, income adequacy, employment status), psychosocial functioning (*General Chronic Stress Index* and *Mastery Scale*), physical health (number of chronic conditions)

- **Control variables:**
  - Baseline MDE (met criteria for MDE in any of the first 5 waves, or diagnosed by a healthcare professional)
  - Sex, age, race, marital status
  - Parental history of depression (results not shown)
Which do you think will have the strongest effect on adult depression?

Mother’s education

Father’s education
Mother’s education:
Lack of a high school diploma

Mother’s education less than high school

OR = 2.08
(95% CI: 1.35, 3.18)

Major Depressive Episode

*controlling for sex, age, ethnicity, marital status, prior MDE
Adverse childhood events?

ACEs
parental divorce, parental long-term unemployment, hospitalization for 2 or more weeks, parental substance abuse, physical abuse, a traumatic event, or being sent away from home

OR = 2.04
(95% CI: 1.30, 3.20)

Mother’s education less than high school

Major Depressive Episode

Model 1 estimates:
< HS: OR = 2.08 (1.35, 3.18)

*controlling for sex, age, race, marital status, prior MDE
Model 1 estimates:
< HS: OR = 2.08 (1.35, 3.18)

*controlling for sex, age, race, marital status, prior MDE
Chronic stress and mastery?

Mother’s education less than high school

Chronic stress and mastery

OR = 1.95
(95% CI: 1.26, 3.01)

Major Depressive Episode

Model 1 estimates:
< HS: OR = 2.08 (1.35, 3.18)

OR = 1.95 (95% CI: 1.26, 3.01)
*controlling for sex, age, race, marital status, prior MDE
controlling for sex, age, race, marital status, prior MDE

Model 1 estimates:
< HS: OR = 2.08 (1.35, 3.18)

OR = 2.05 (95% CI: 1.34, 3.14)

*controlling for sex, age, race, marital status, prior MDE
Are you surprised by the strength of the effect for mother’s education?

- YES
- NO
Robust effect of mother’s education

- Few studies distinguish between mother’s and father’s education
- Those that do typically find mother’s education to have a stronger effect
- However, that effect tends to wane with mediating SEP
  - Different cohorts
  - Older respondents
  - Less than high school may be a more stringent measure of deprivation
- Suggestion from animal models that maternal behavior may affect offspring’s reactivity to stress
Stress during childhood

• Sonia Lupien: Stress is caused by
  – NOVELTY
  – UNPREDICTABILITY
  – THREAT TO THE EGO
  – SENSE OF CONTROL

What’s in a high school degree?

• **Parents with higher levels of education**
  – Less likely to use harsh and/or erratic discipline
  – More likely to:
    • Show greater warmth and emotional supportiveness
    • Provide cognitively stimulating learning environments and engage in educational behaviours
    • Adopt teaching strategies that promote skill and foster interest and motivation

• **A parent with less than high school education is more likely**
  – to be in a precarious socioeconomic position: job loss, frequent moves

Next steps

- **Resilience:** “preserving the same level of the outcome or rebounding back to that level after an initial setback”

- **Recent UK study (Netuveli et al.) shows:**
  - Rare among the adult and elderly population
  - Associated with social networks, not personality traits

- **In Canada, among persons having experienced a negative life event:**
  - What are the social network and family structure characteristics of those who bounce back

- **But the future of data allowing these studies is uncertain...**