Literacy and Childbearing

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Social factors influencing health

- Types of factors
    - Socio-economic status (income, education)
    - Demographics (race/ethnicity)
    - Literacy
- Mechanisms or markers?
    - Lifecourse perspective
    - Distinctions related to interventions and policy

Literacy and reproductive outcomes

- Women's health
  - ▫ Little work has on this key outcome in HICs
  - ▫ Evidence from LMICs indicates strong association
- Reproduction
  - ▫ Major impacts of childbearing on the health of individuals and the broader society
  - ▫ Childbearing is the single largest source of hospitalization in the US among adults under 50

Childbearing and public health

- Short-term risks
  - Increased risk of obstetric complications
- Long-term risks
  - Pelvic organ prolapse, weight gain, diabetes

- Predictors for increased childbearing
  - Low educational attainment
  - Low socioeconomic status
  - Racial/ethnic minority status

Literacy and public health

- Distinct from health literacy
- Low literacy associated with poor health outcomes
  - Associated with, but distinct from educational attainment

- Risk factors for low literacy
  - Racial/ethnic minority status
  - Immigrant status
  - Incarceration
  - Low socioeconomic status
  - Increased age

Literacy and childbearing

- Existing literature from developing world shows associations between low literacy and:
  - ⬆ birth rates at state, district, and individual level

- Relationship is understudied in the US and other high income countries

Related work

- Analysis of teen births in Philadelphia
  - Moderating effect of race found
- Analysis of the risk of grand-multiparity (5+ births)
 - National Longitudinal Survey of Youth, prospective cohort study

Literacy's mechanism

- Direct effect
- Mediator
- Moderator

Opportunity - PIAAC

- Multi-national data
- Large dataset
- Validated literacy measure

Mediator or Moderator?
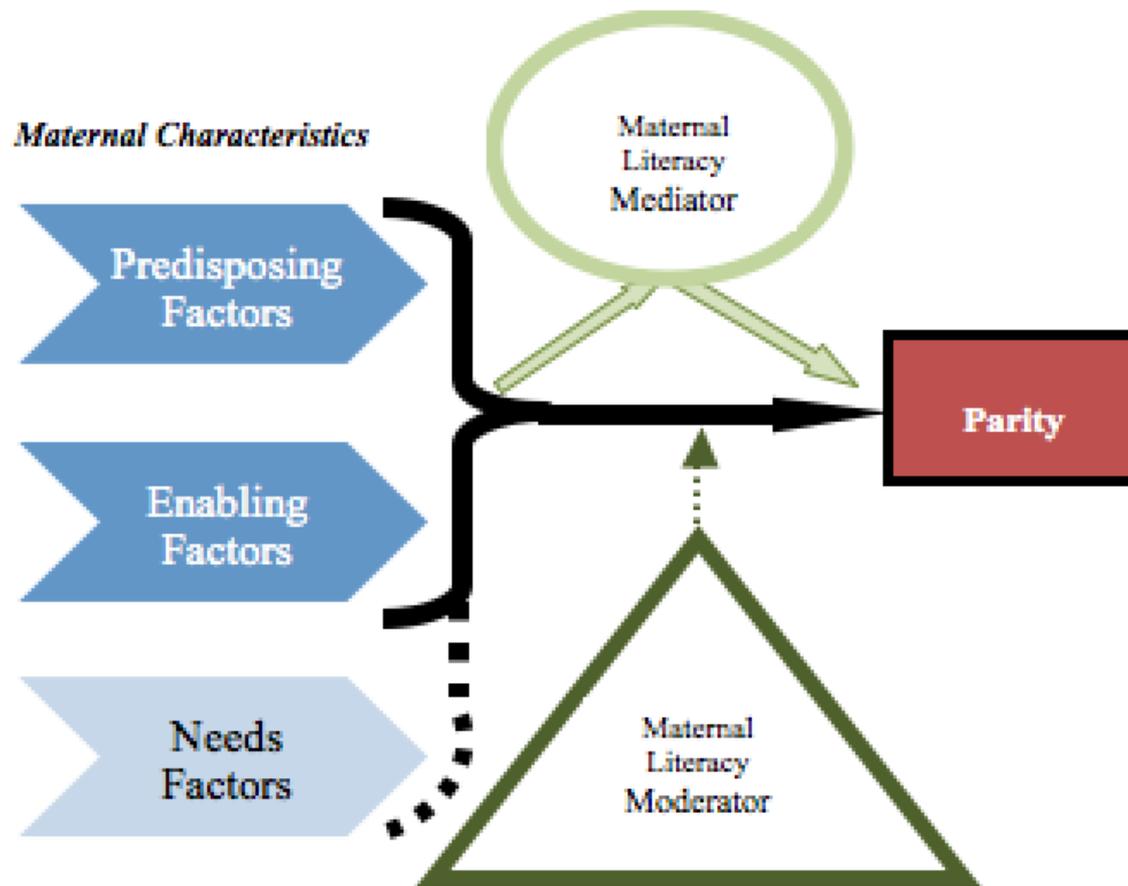
Andersen's Behavioral Model

Question

Does **literacy** work as either a **mediator** or **moderator** in the relationship between **self-reported health** and **childbearing**?

Study population

- OECD
    - Czech Republic, Denmark, France, Ireland, Italy, Japan, the Republic of Korea, Netherlands, Belgium (Flanders), Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom, and the United States
- Non-OECD
    - Cyprus, the Russian Federation
- Excluded based on data limitations
    - Canada, Australia, Austria, Estonia, Germany, and Finland

Evidence from PIAAC

Literacy ➡ **Childbearing**

Significant, inverse association
among OECD nations
p<0.0001

Non-significant in Cyprus and Russia

Evidence from PIAAC

Literacy → **Self-reported health**

Significant, positive association
$p < 0.0001$ for OECD and non-OECD

Evidence from PIAAC
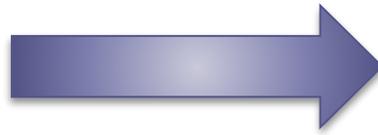
Self-reported health ➡️ **Childbearing**

Significant, positive association
p<0.0001 for OECD and non-OECD

Moderation

- Is literacy related to parity? ✓
- Is self-reported health related to parity? ✓
- Do self-reported health and parity together create differing effects than the two individually?
  - Is an interaction term between literacy and parity significant?
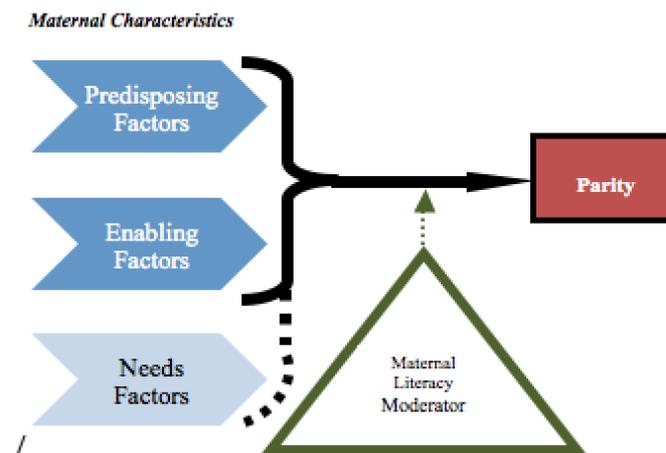
Mediation

- Is literacy related to parity? ✓
- Is self-reported health related to parity? ✓
- Including both literacy and self-reported health in a model, is:
  - literacy significantly associated with childbearing?
  - self-reported health less associated?
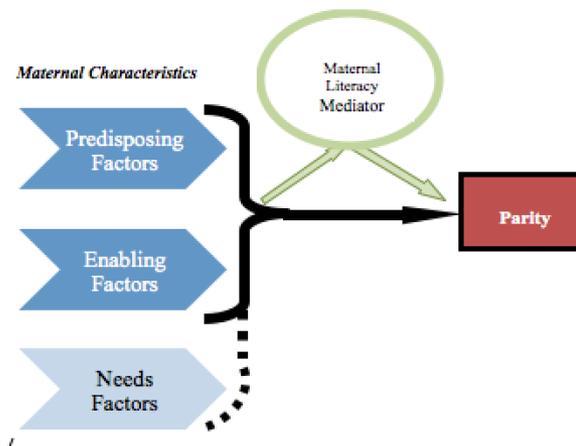
Adjusted for age

Conclusions

- No evidence to support moderation hypothesis
- Evidence to support mediation hypothesis
- Next steps
  - Adjust models for additional known confounders
    - Race (US-only)

Implications

- Mediation
  - Argument for investing in literacy, educational inputs
    - Early education
    - Adult education

Strengths and limitations

- Strengths:
  - Big data set
    - Comparison across countries
  - Validated literacy assessment

- Limitations:
  - Cross-sectional
  - Self-report
  - Possible misclassification of outcome