Introduction

- **Motivation**
  - 17% of adolescents and 8% of adults suffer from major depressive disorder in the US.
  - Understanding determinants of adolescent depression is important for prevention and treatment.
  - Peers have more pronounced impact during adolescence.

- **Research Question**
  - How does peers’ genetic predisposition to depression affect own mental health?
  - What are the mechanisms underlying the effects?

- **What I Do**
  - Estimate short- and long-term effects of peers’ genetic predisposition to depression on own mental health using data from Add Health.
    - Exploit variation within schools and across grades in same gender grademates’ average polygenic score for major depressive disorder (MDD).
    - Explore pathways through which peers’ genetic risk impacts own mental health.

- **Contribution**
  - This research adds to the literature of...
    - Peer effects on mental health
      - Focus on the role of adolescent peers in the US context.
      - Focus on peers’ genetic risk for depression.
      - Identify immediate effects of adolescent peers on own depression.
      - Explore a wider range of potential mechanisms.
    - Social-genetic effects in the context of mental health
      - My findings suggest a genetic foundation for social contagion of adolescent mental health in clinical/medical studies.

Data

- **National Longitudinal Study of Adolescent to Adult Health (Add Health)**
  - Nationally representative sample of adolescents in grades 7-12 in the US during 1994-95 school year.
  - Use Wave I to measure short-term effects and Wave IV to measure long-term effects.

- **Genetic data in Add Health**
  - Collected for Wave IV respondents who provided saliva for genetic testing (~9,000 people).
  - Use polygenic score for major depressive disorder (the MDD score).
    - Higher the score, the more likely one experiences depression.
  - Use same-gender grademates’ average MDD score to measure peers’ genetic predisposition to depression.
  - 2,335 females and 1,682 males from 91 schools in analysis sample.

Empirical Strategy

\[ Y_{lw} = \beta_0 + \beta_1 PGS_{lw} + \beta_2 PGS_{ls} + \alpha_0 X_{lw} + \alpha_1 X_{ls} + \rho s + \delta g + \epsilon_{lw} \]

- \( Y_{lw} \) is outcome of student \( i \) at school \( s \) and grade \( g \) in wave \( w \).
- \( PGS_{lw} \) is average MDD score of same-gender grademates (excluding student \( i \)) attending the same grade \( g \) and school \( s \) of student \( i \) in Wave I.
- Circumvent three main challenges...
  - Reflection problem, endogenous peer group formation, and common environments.

Findings

- **Main Results**
  - 1 SD ↑ in peers’ avg. genetic risk for depression during adolescence
    - ↑ likelihood of depression:
      - by 2.3 ppt for adolescent girls, an 8.7% ↑.
      - by 3 ppt for adolescent boys, a 20% ↑.
  - Effects persist into adulthood only for females.
    - 2.9 ppt ↑ in likelihood of depression in adulthood, a 14% ↑.

- **Mechanisms**
  - Especially for females, exposure to peers in adolescence w/ increased genetic predisposition to depression.
  - Worsens friendship/socialization in adolescence and adulthood.
  - Increases substance use in adolescence and adulthood.
  - Decreases socioeconomic status in adulthood.

Discussion and Conclusions

- **Implication**
  - Genes are important part of social environment.
  - Efforts to prevent and treat depression can be more effective by taking genetic aspects into account.

- **Future work**
  - Explore...
    - Additional channels (e.g., academic performance and delinquency)
    - Circumstances or environments that mitigate the effects (e.g., childhood SES or relationships with parents)

Contact

Yeongmi Jeong
University of Georgia
Email: Yeongmi.Jeong@uga.edu
Website: https://sites.google.com/view/yeongmijeong
Phone: 762-400-2981

The Effect of Peers' Genetic Predisposition to Depression on Own Mental Health

Yeongmi Jeong
University of Georgia