

# Investments in Children and Child Mental Health

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# The child mental health crisis

- The American Academy of Pediatrics joined with the American Academy of Child and Adolescent Psychiatrists and the Children's Hospital Association to declare a state of national emergency (American Academy of Pediatrics, 2021).
- The Surgeon General has issued an urgent public health advisory about youth mental health (Murthy, 2021).

# Important question:

What is causing the crisis?

One often-suggested answer is social media.

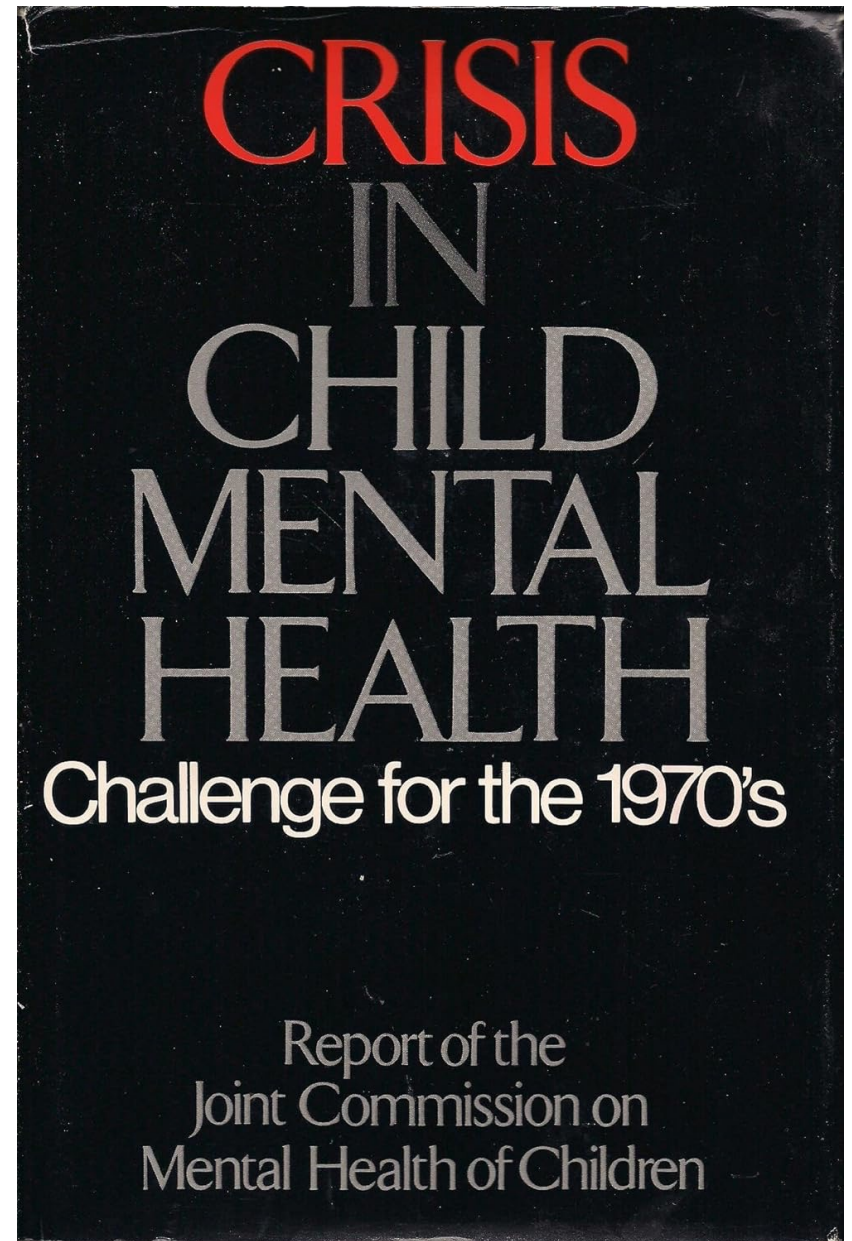


# Evidence regarding effects of social media on children is inconclusive

- Hancock, Liu, Xun, Luo, Mieczkowski (2022) meta-analysis: 226 studies, 275,728 subjects, 6 measures of psychological well-being.
- No effect on combined measure, small increases in anxiety and depression, and small improvements in social well-being.
- Effects vary with population cohort, geographic region, study methodology, and type of social media use.

# Crisis predates social media:

In 1970 The Joint Commission on Mental Health, published “Crisis in Child Mental Health: Challenge for the 1970s,” a report for the U.S. Congress.



## This report found that:

- 10-12% of U.S. children had severe psychological problems.
- Stated that: “As of today, the treatment of the mentally ill child in America remains uncertain, variable, and inadequate. This is true on all levels, rich and poor, rural and urban... Only a fraction of our young people get the help they need at the time they need it.”

# This lecture will...

- Discuss the importance of child mental health.
- Explain why it is hard to assess trends in child mental health over time.
- Show evidence about public investments that have been shown to improve child mental health.
- Suggest important areas for further investment.

# The Importance of Child Mental Health

- The WHO (2021) estimates that 1 in 7 children 10-19 have a mental health disorder, and that mental health problems account for 13 percent of the global burden of disease in this age group.
- Child mental health problems predict lower education, labor force participation, and worse adult health.

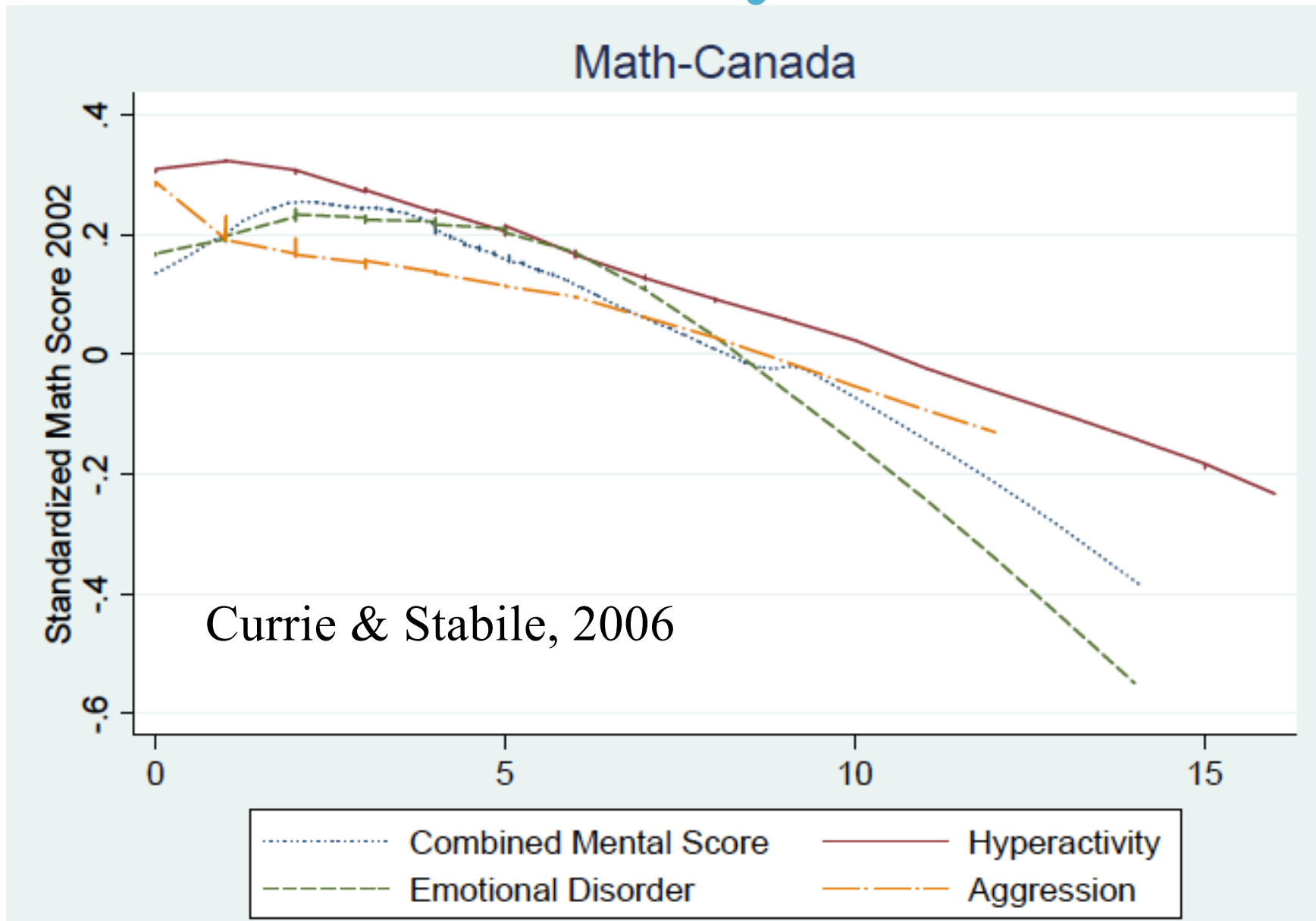


# The link between mental health and adult outcomes starts early

Currie and Stabile (2006, 2008) use a mental health screening tool and large, nationally representative samples of age 4-11 US and Canadian children.

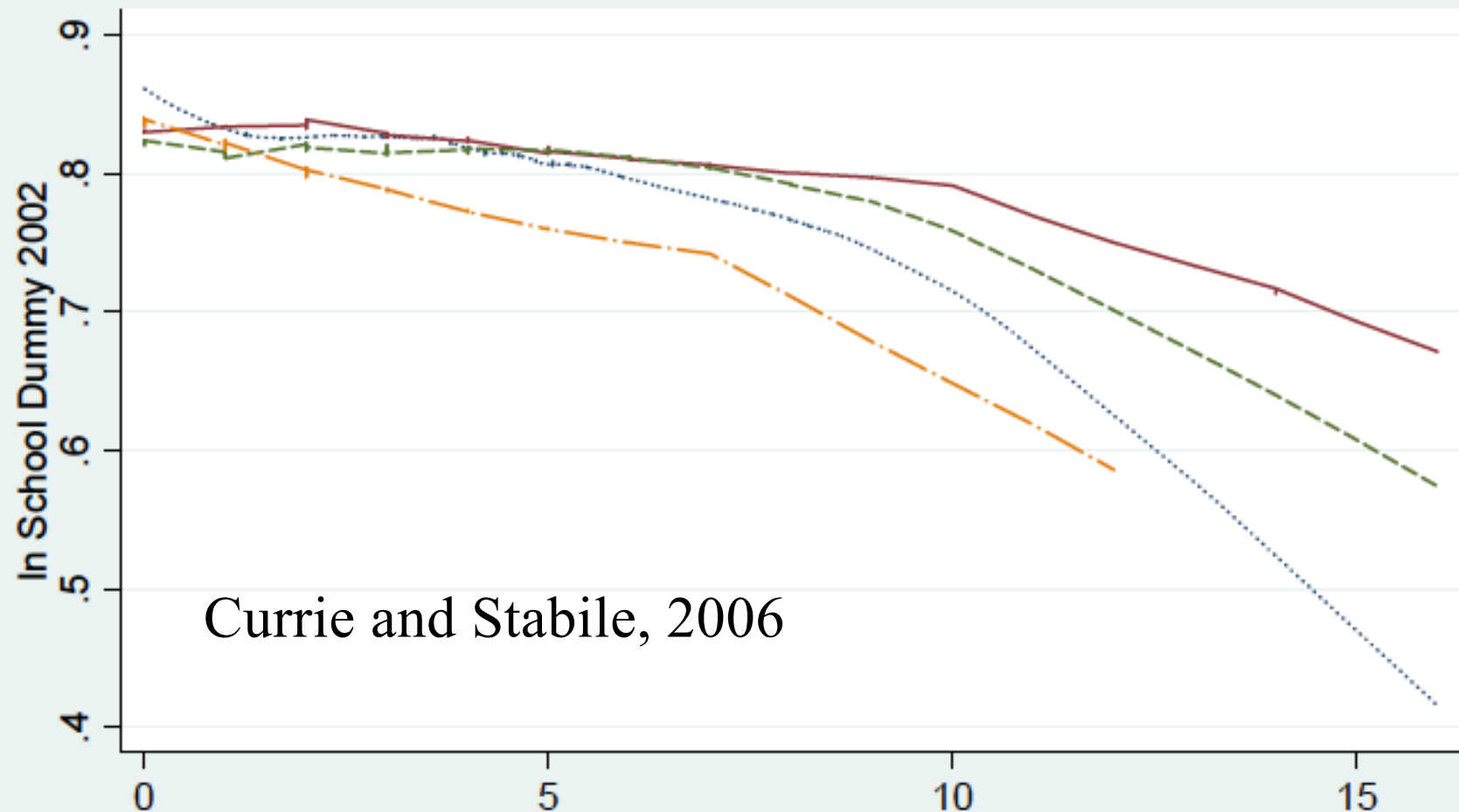
- How do scores at  $t$  predict educational outcomes years later?
- Compare the siblings with different mental health scores.

# Mental health and math scores 8 years later

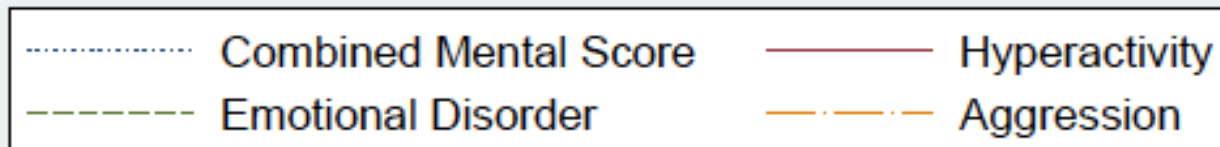


# Mental health and staying in school

In School 16 to 19 Year Olds-Canada



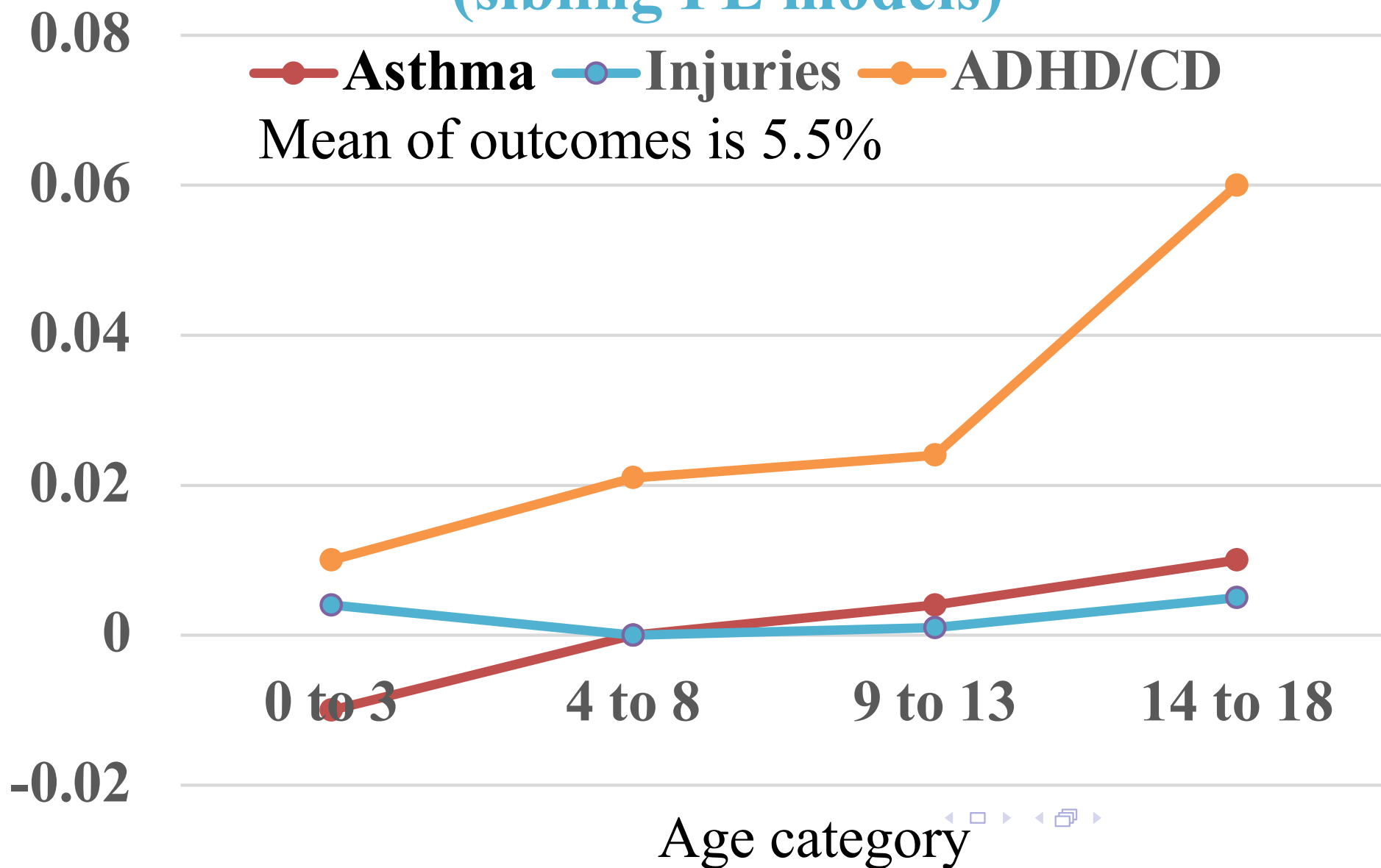
Currie and Stabile, 2006



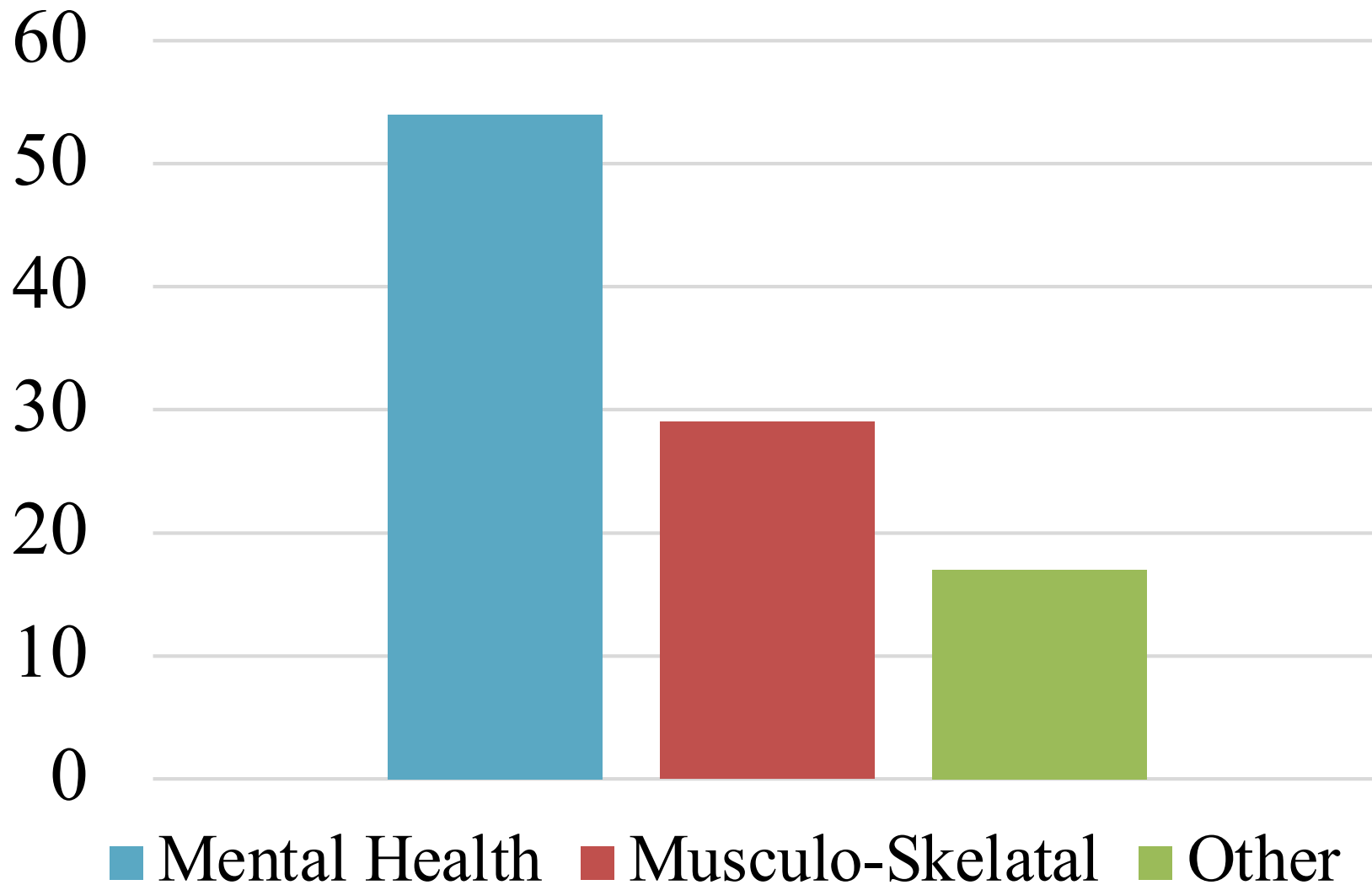
# Child mental health problems have more negative effects than common physical health conditions

- Currie, Stabile, et al. (2010) use linked Canadian government data sets to examine effects of child health conditions for 50,000 children.
- Compare the impact of common physical conditions (asthma, injuries) to those of mental health conditions (ADHD, conduct disorder) in sibling pairs.

# Estimated effect of condition on receipt of social assistance after age 18, by age (sibling FE models)



# Poor mental health is also the most important cause of working days lost



UK Labor Force Survey, 2018-19



# What factors contribute to rising *measured* rates of child mental illness?

- Changes in definitions and coding
- Increases in screening
- Increased access to care (expansions of insurance coverage + mental health parity laws)
- Reductions in stigma and increased willingness to seek care.

# 2013 changes in diagnostic criteria for mental health conditions

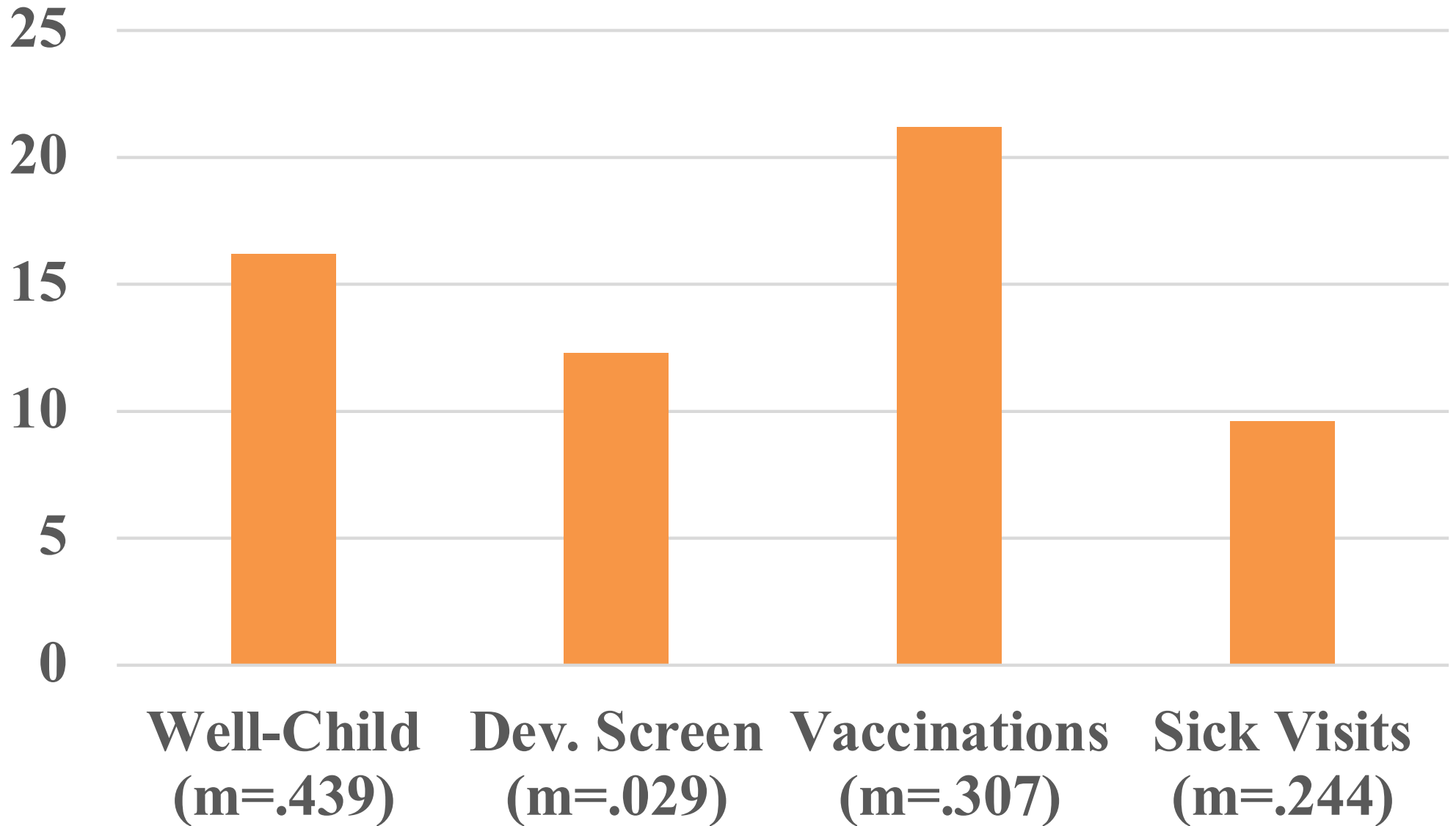
- DSM V introduced new “autism spectrum disorder” (ASD) category which combined DSM-4 diagnoses of autism, Asperger’s, and two other disorders.
- Autism diagnoses up from 1/150 in 2000 to 1/54 in 2016 (Maenner, 2021).
- Definition depression now includes bereavement, dysthymic disorder, others.
- Thresholds for ADHD and anxiety diagnoses lowered.



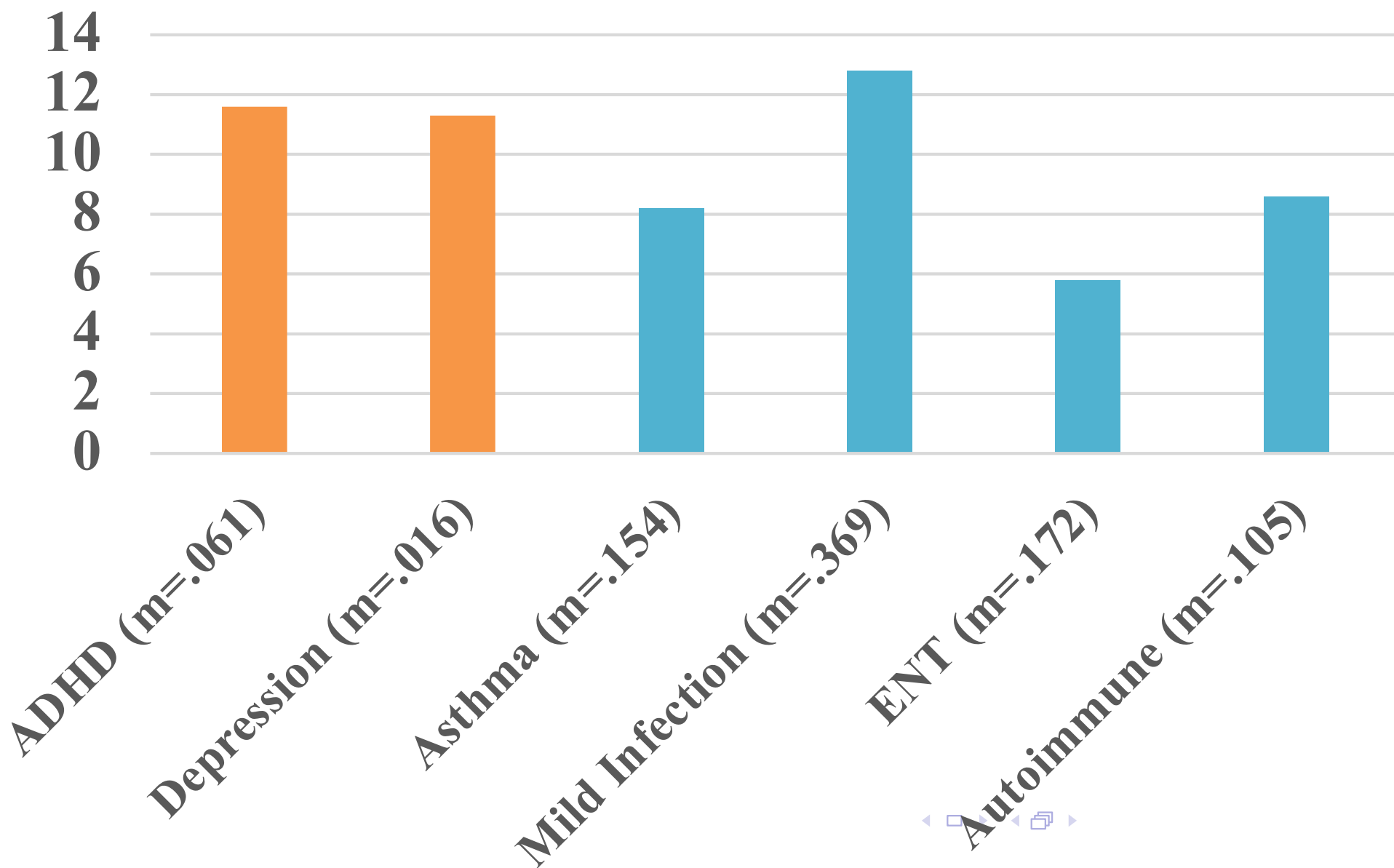
# Effects of increases in screening for mental health conditions

- Chorniy and Currie (2018) study two changes in public health insurance plans in South Carolina between Oct. 2007 and May 2008.
- Changes included both carrots and sticks:
  - Plans paid more per child for children with chronic conditions.
  - Plans penalized doctors who were below average in well child screenings.

# **% Increase in 12 months after switch (following same child over time)**



# % Increase in diagnoses in 12 mo. after switch (following child over time)



# Changes in the coding of mental health conditions

- Corredor-Waldron and Currie (2023) analyze a sharp rise in recorded suicidal behaviors in NJ teens 10-18 with ED visits from 2008-2019.
- Rise accounted for by suicidal ideation (SI) as a secondary diagnosis. SI is grouped with self-harm as a suicidal behavior.

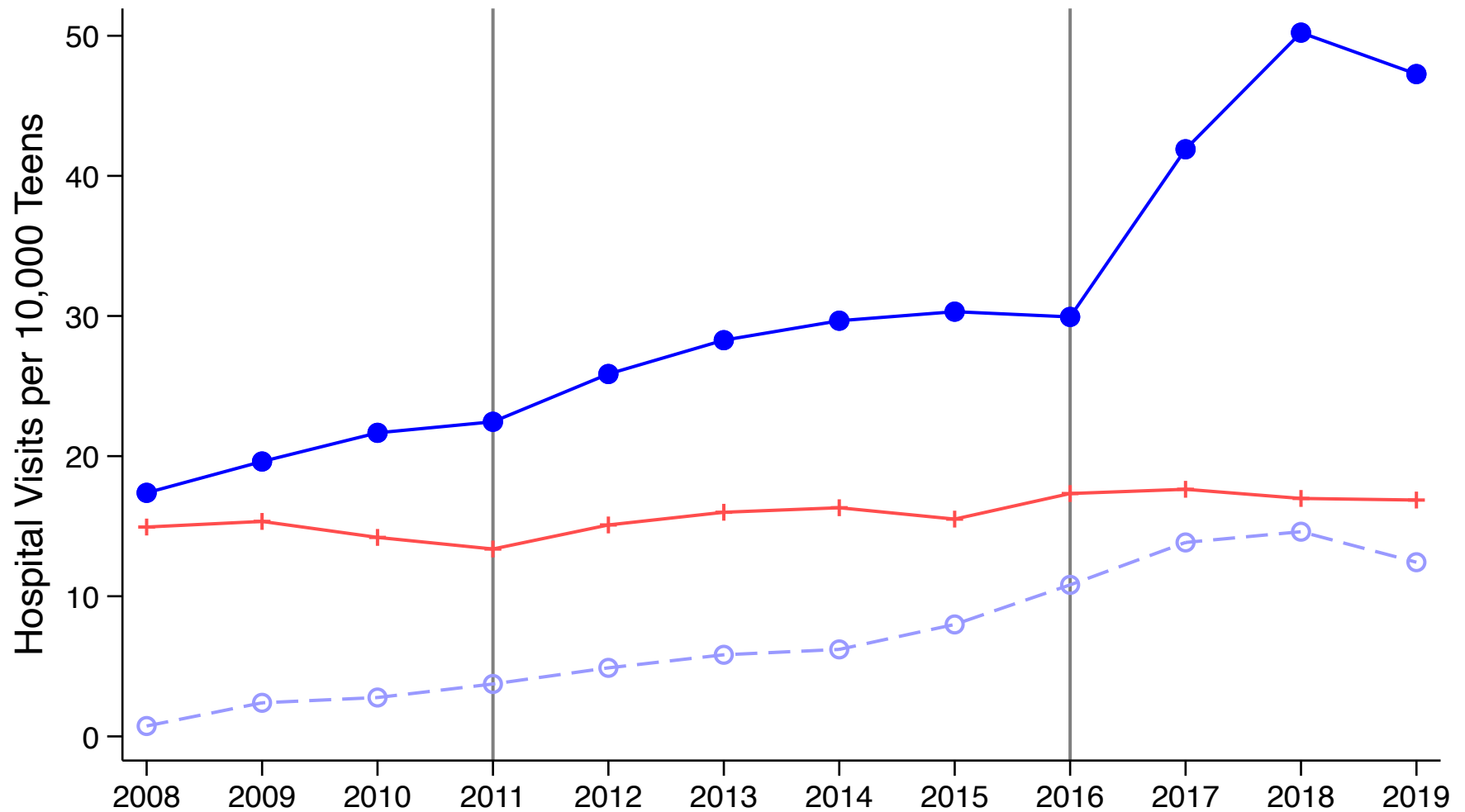
# Increases in recording of SI accounted for by 2 changes:

1. In 2011, the U.S. Preventive Services Task Force (USPSTF) recommended screening girls 12+ for depression (including SI).
2. Instructions in Oct. 2015 revision of the International Classification of Disease specify that SI should be recorded as a secondary diagnosis in cases where mental health is primary.

# Insurance rules create incentives to obey these recommendations

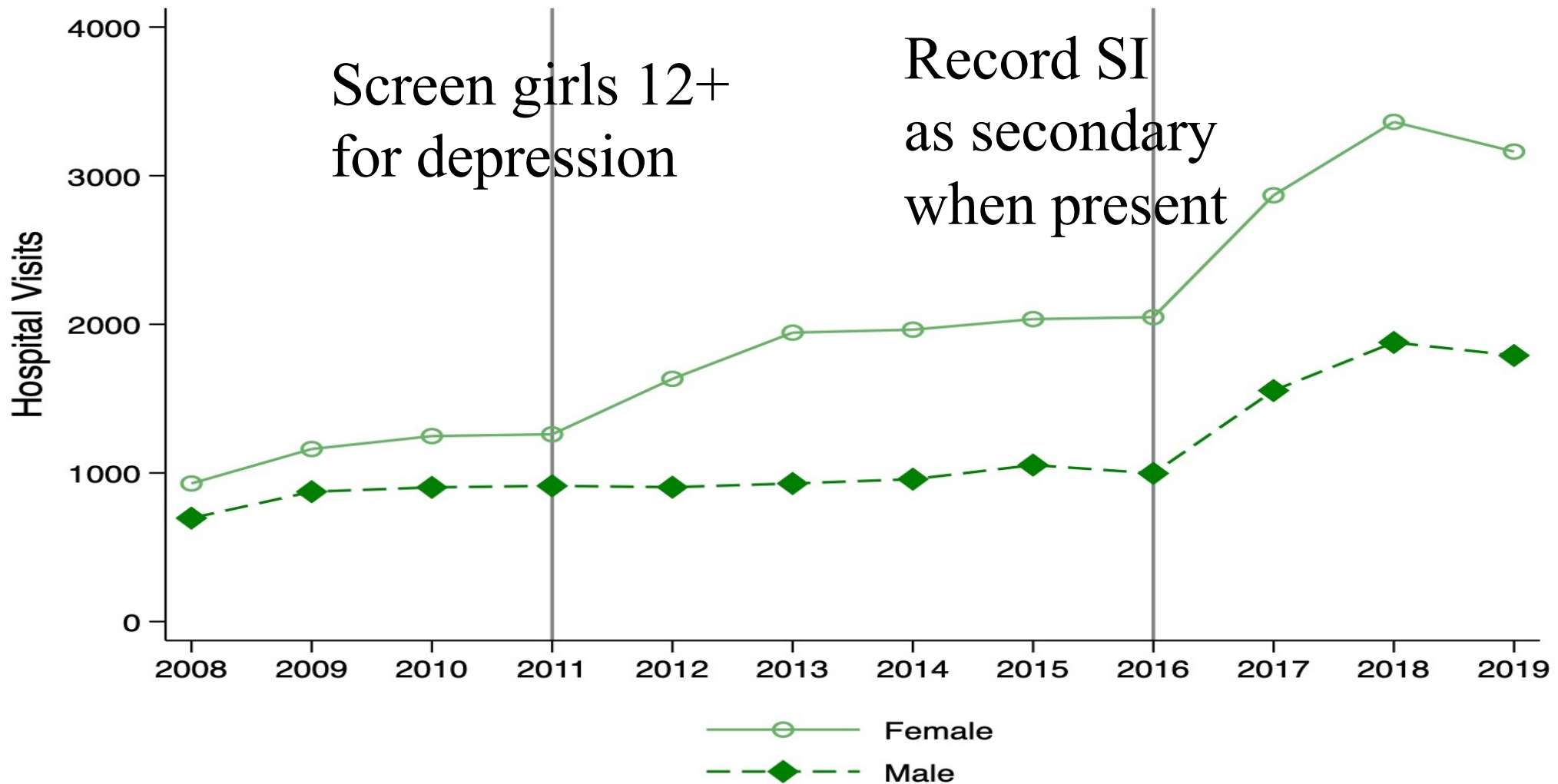
1. The Affordable Care Act made it mandatory for insurance companies to cover the care recommended by the preventive services task force.
2. Recording multiple diagnoses can increase reimbursements by indicating that a case is more complex.

# NJ suicide-related ED visits, age 10-18



- Suicidal Ideation is Primary Diagnosis
- Suicidal Ideation is Secondary Diagnosis
- +— Self-Injury or Intentional Self-Harm Diagnosis<sup>a</sup>

# Increases in SI for male and female NJ teens 10-18



Corredor-Waldron and Currie (2023)



# Huge state-level variation in teen suicide rates

- The 5 states with lowest rates are MA, NJ, NY, CT, and CA at 5-6.6 per 100,000. (2018-2020 data from CDC Wonder).
- The 5 states with highest rates are UT, WY, SD, MT, AK at 22-40.4 per 100,000.
- Suggests state and region-specific factors drive much of the variation and deserve more attention.

## Additional Caveats:

- Not all suicides are captured – if intent is unclear, suicides may be coded as accidental deaths.
- Officials completing death certificates may avoid classifying a death as suicide in order to avoid causing the family pain.
- Hence, reductions in stigma could increase recording of suicides.



# CAUTION

Changes in screening and diagnosis, along with declining stigma mean that reports about trends in youth mental health must be interpreted very cautiously.

# What interventions improve children's mental health?

- *Supporting pregnant women*
- Early childhood programs
- Improving mental health treatment
- Working with schools

# The *Fetal Origins* literature establishes that pregnancy is a *critical period*

- Effects of “shocks” (pollution exposure, nutritional deficits, maternal stress...) are large and period in utero is small.
- Both *nature* AND *nurture* matter because they interact.
- Rich environments can Help compensate for fetal shocks.



# **Prenatal conditions can increase the probability of poor mental health**

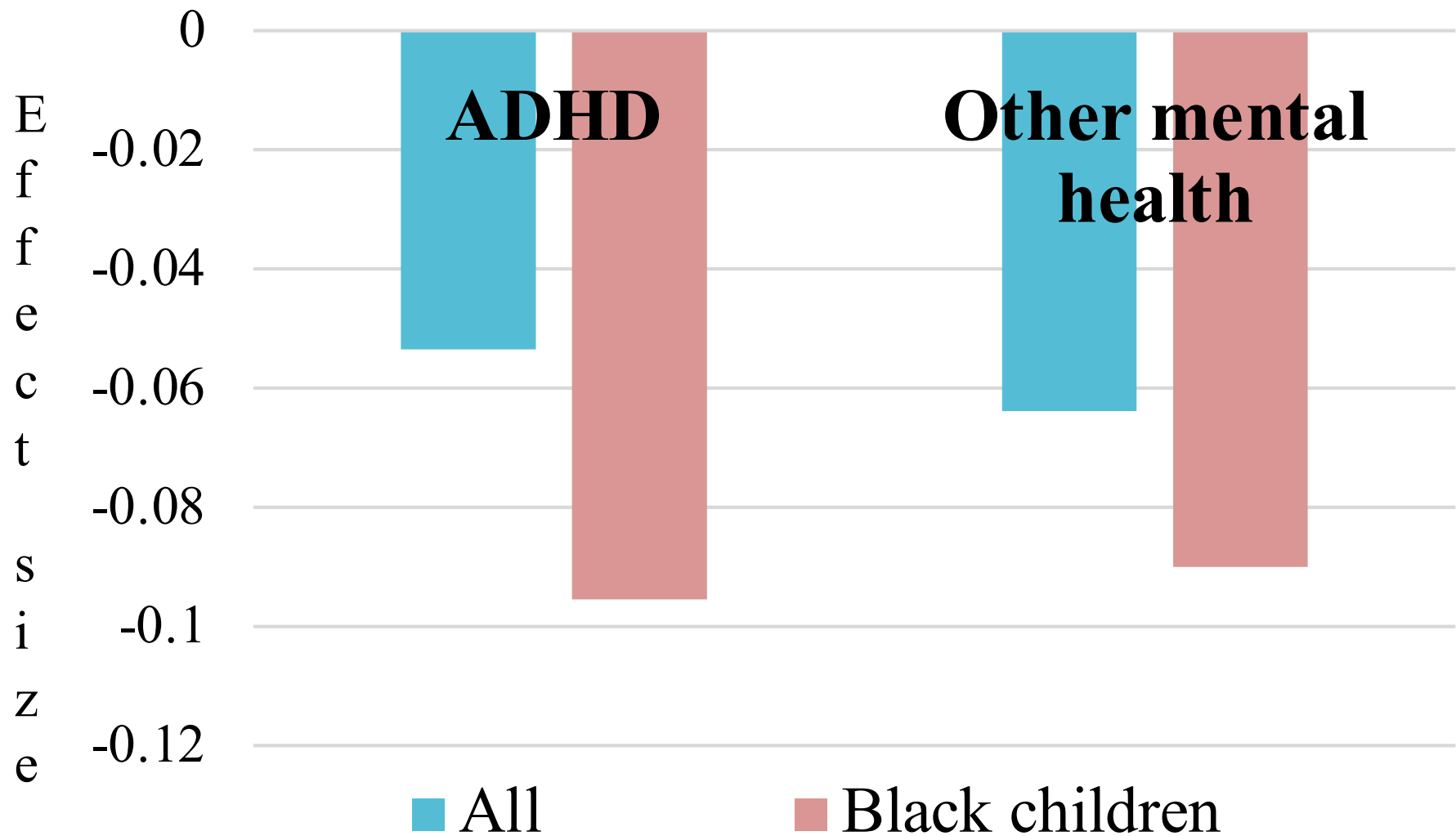
- Link Dutch “Hunger Winter” and schizophrenia (Susser 1992, 1996, 1998).
- Strong association birth weight and ADHD, even in identical twins (Pettersen et al., 2015).
- Swedish mothers with a relative who died during pregnancy have children who are more likely to have ADHD and depression than mother who had a loss after the birth (Persson and Rossin-Slater, 2018).

# Prenatal support can prevent child mental health problems

- Chorniy and Currie (2018) link a U.S. prenatal nutrition assistance program (WIC= food+medical care) to child mental health.
- Children born 2004-2009 in South Carolina and followed up to age 6-11 in public health insurance records (Medicaid).

# Prenatal WIC and % decrease in mental health problems at age 6-11

(Sibling comparisons)



Chorniy and Currie, 2018a



# What interventions improve children's mental health and education?

- Supporting pregnant women
- *Early childhood intervention programs*
- Improving mental health treatment
- Working with schools

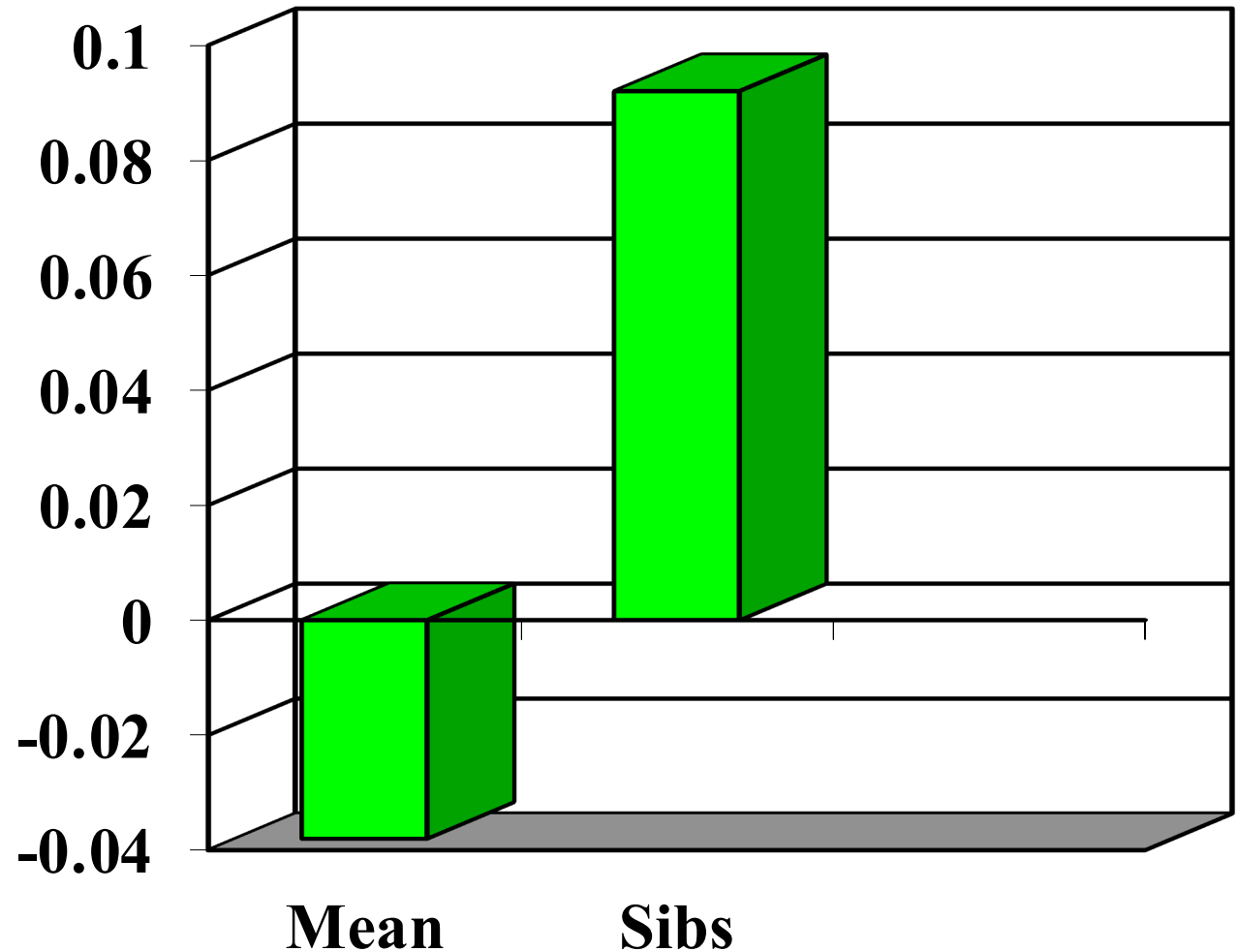
# Meta analysis of 222 “better quality” studies of the *short-term effects* of early childhood interventions

## - Results:

- +0.33 SD literacy (CI 0.19-0.47)
- +0.37 SD numeracy (CI 0.16-0.57)
- +0.16 SD academic school readiness (CI -0.02-0.34)
- **+0.42 SD psychosocial school readiness (CI 0.22-0.63)**

# Fewer studies have examined long-term effects of large-scale public programs


e.g. Garces, Currie and Thomas (2002) show positive effects of Head Start on the probability of attending college.



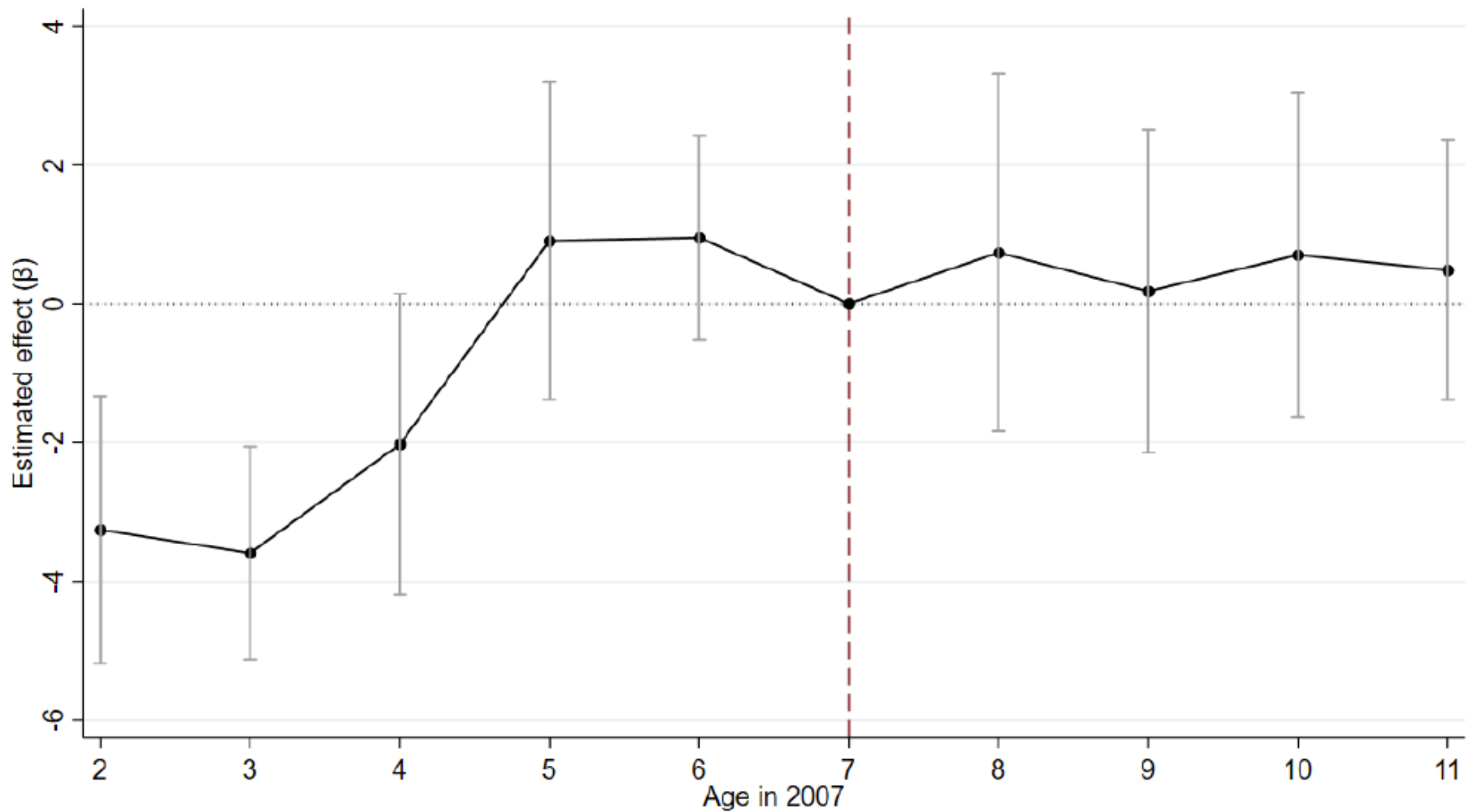
# Are long-term effects due to improved mental health?

- Effects on cognitive test scores (e.g. IQ) often fade out by age 7.
- Heckman, Pinto and Savellyev (2013) show that the Perry Preschool experiment reduced externalizing behaviors at ages 7-9.
- Externalizing behaviors predict adult behaviors and outcomes such as college going (e.g. Moffitt, 1993).

# Early intervention and intergenerational correlations in mental illness

- Butikofer, Ginja, Karbownik, Landaud (2023) study IGC in mental health in Norway.
- Parental mental health diagnoses increase adolescent diagnoses 9.3 p.p. (40%).
- Policy targeted children <6 of adults with mental health conditions. Interventions included screening tools; specialist teams; coordinating with childcare centers; and/or substance abuse campaigns. 

# Early childhood program reduced IGC in mental illness by 39%

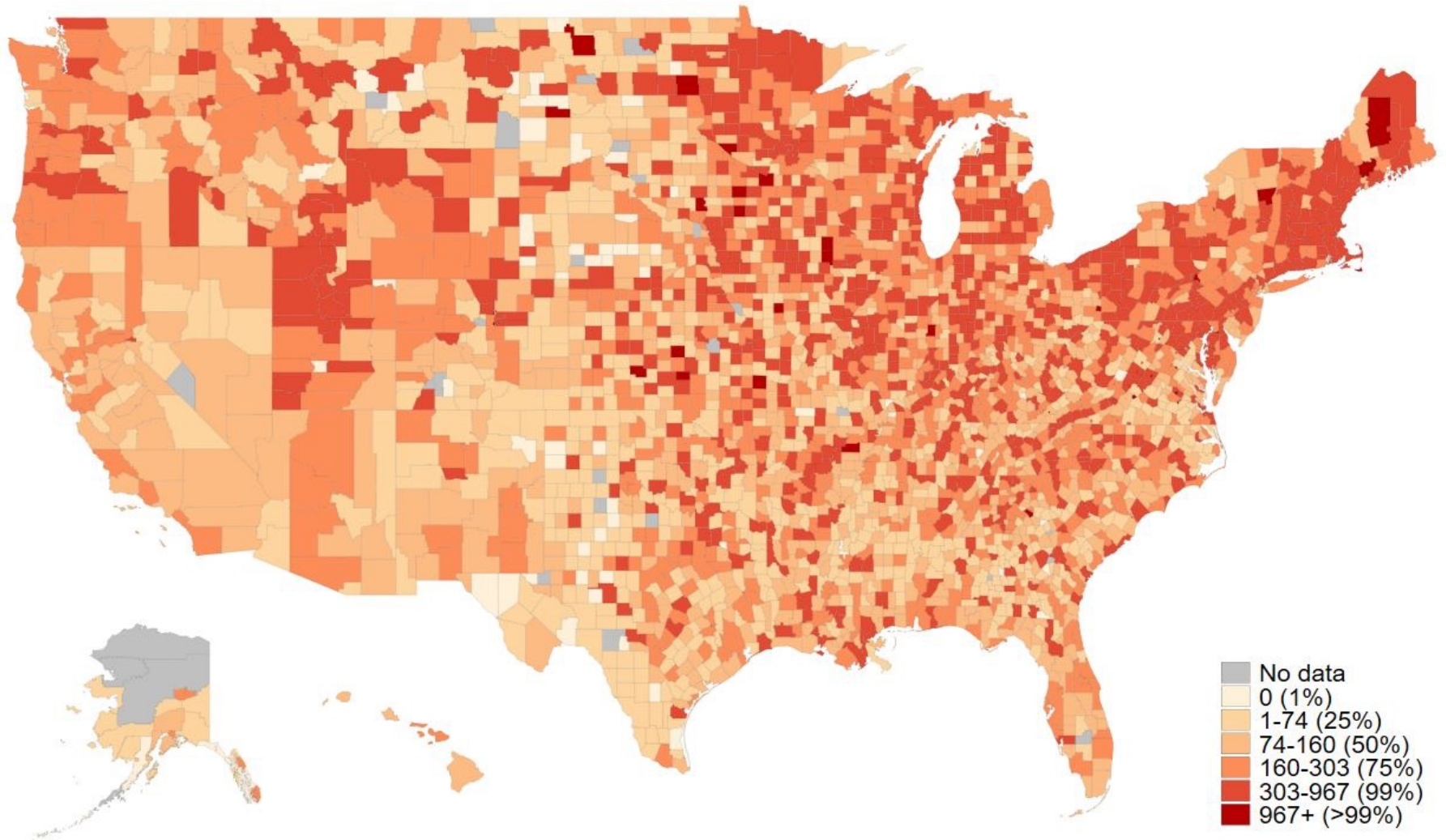


Butikofer, Ginja, Karbownik, Landaud, 2023

# What interventions improve children's mental health and education?

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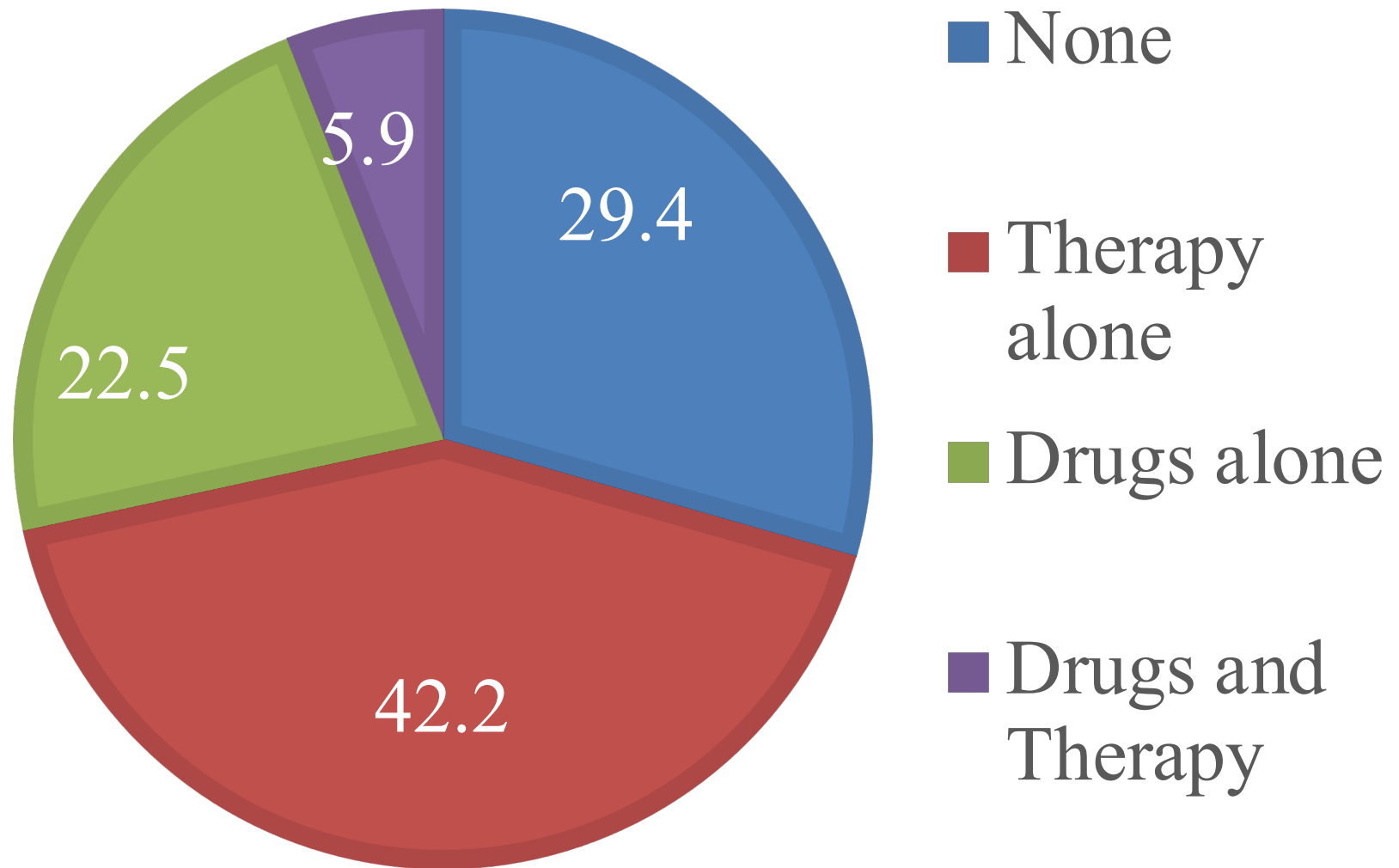
# There is tremendous variation in treatment



30-Day Prescriptions of Anti-Depressant Drugs Per 1000 10-19 Year Olds by County, 2014, Currie, 2024

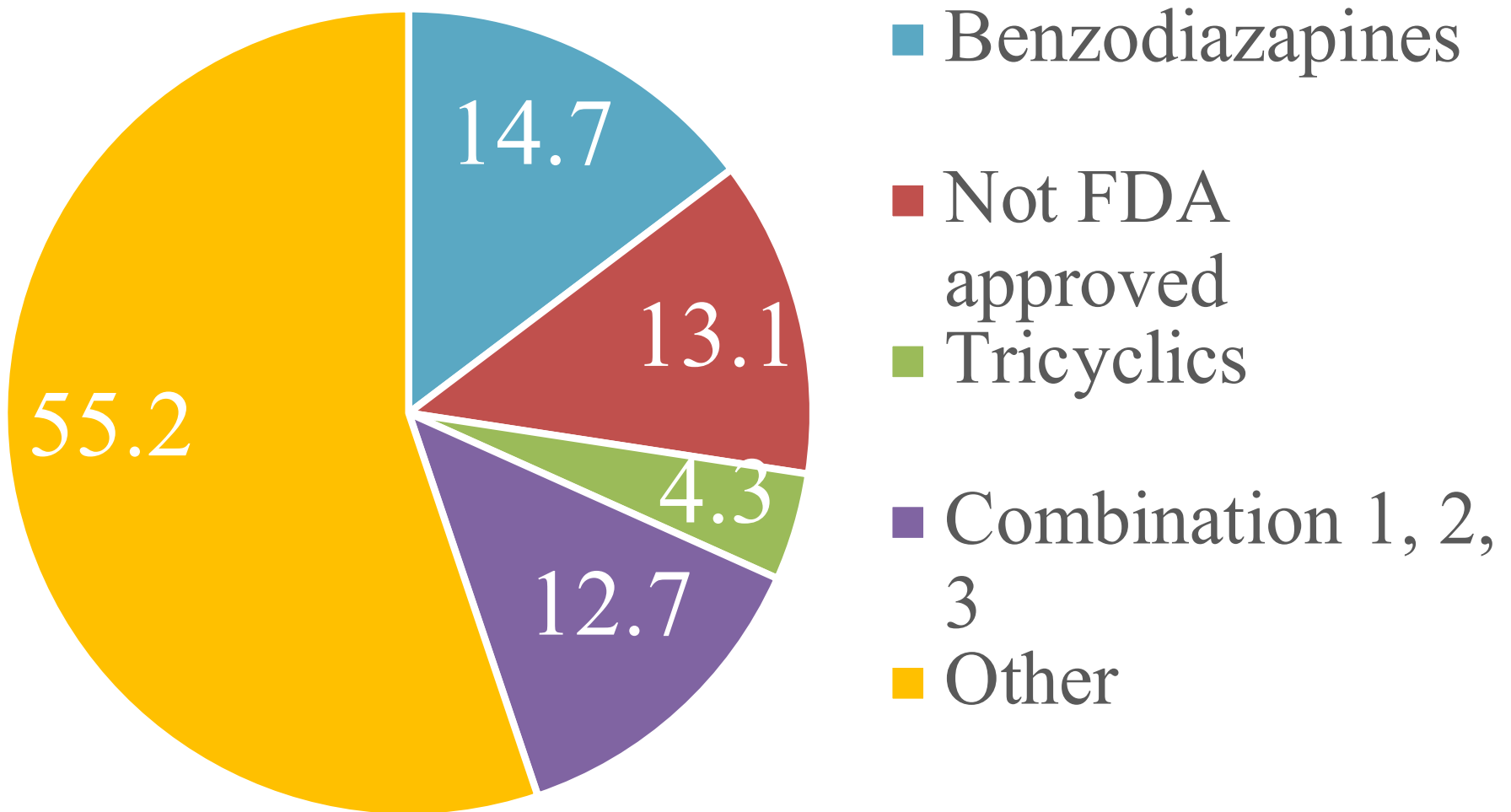


# Conditional on being diagnosed, there is wide variation in treatment



Privately insured US children treated in 3 months after 1<sup>st</sup> MH episode (Currie and Cuddy, 2020)

# Many children get prescriptions that should raise a “red flag”



Privately insured US children treated for 1<sup>st</sup> mental health episode (Currie and Cuddy, 2020)

# Low-Income children receive more questionable treatments even in Canada

	Anti- psychotics (1)	Benzo- diazepine (2)	# drugs $\geq 4$ (3)
Low or Middle Income	0.055*** (0.002)	0.005*** (0.002)	0.019*** (0.002)
Mean Dep. Var.	0.186	0.073	0.070
R <sup>2</sup>	0.310	0.201	0.179
N =	130,411	130,411	130,411

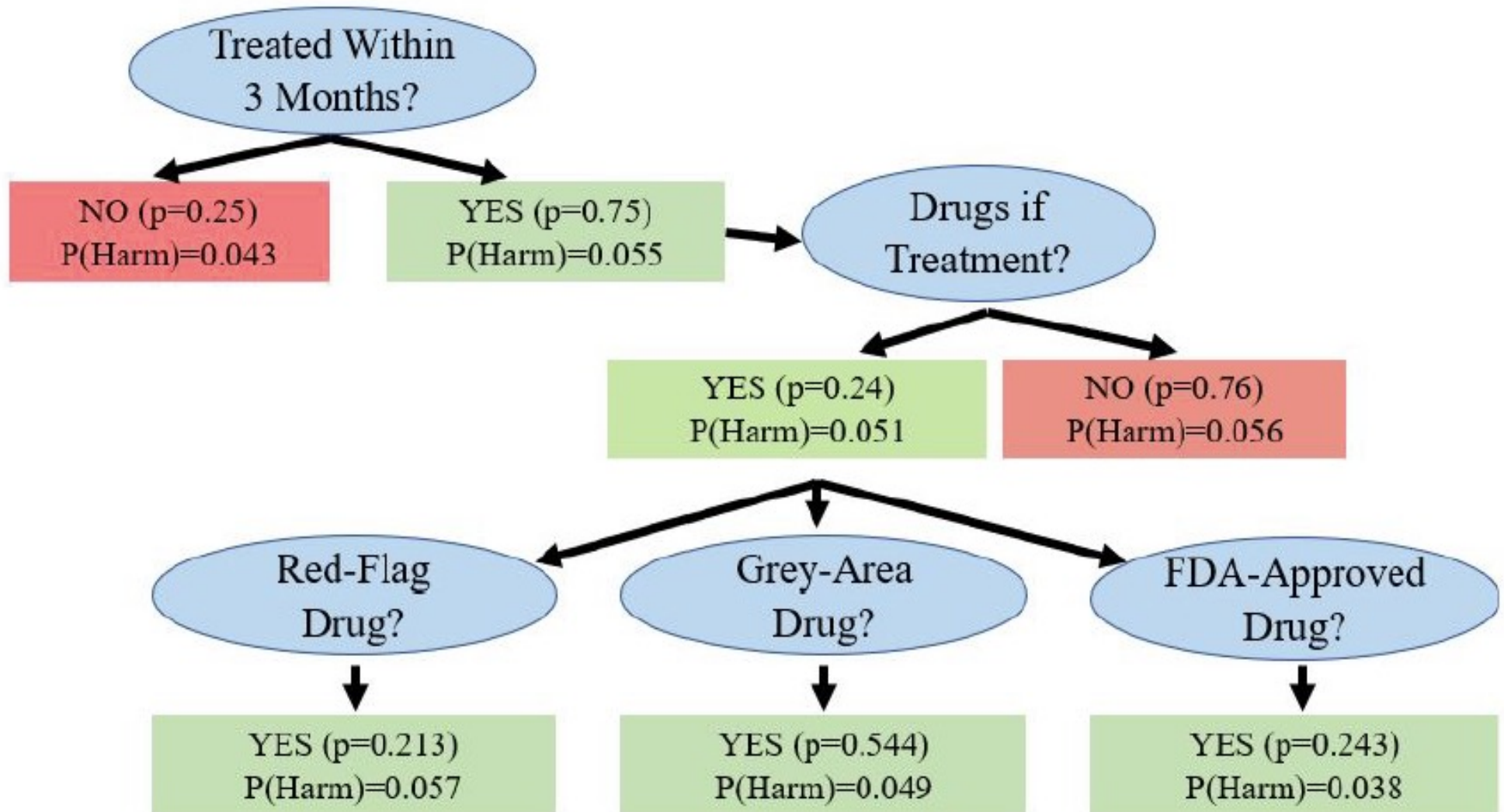
Children with mental health prescriptions in Ontario, Canada

Currie & Zhang, 2023

# Treatment that follows guidelines yields better outcomes

- Currie and Cuddy (forthcoming) follow 45,223 children who were privately insured between 2012-2018.
- Select children observed before age 11 with **a 1st depression or anxiety episode** between 10 and 17.
- Use provider supply and practice style as instruments for variations in treatment.
- Examine outcomes up to 2 years after initial episode.

# Effects of Treatment on Probability of Self Harm after 2 years

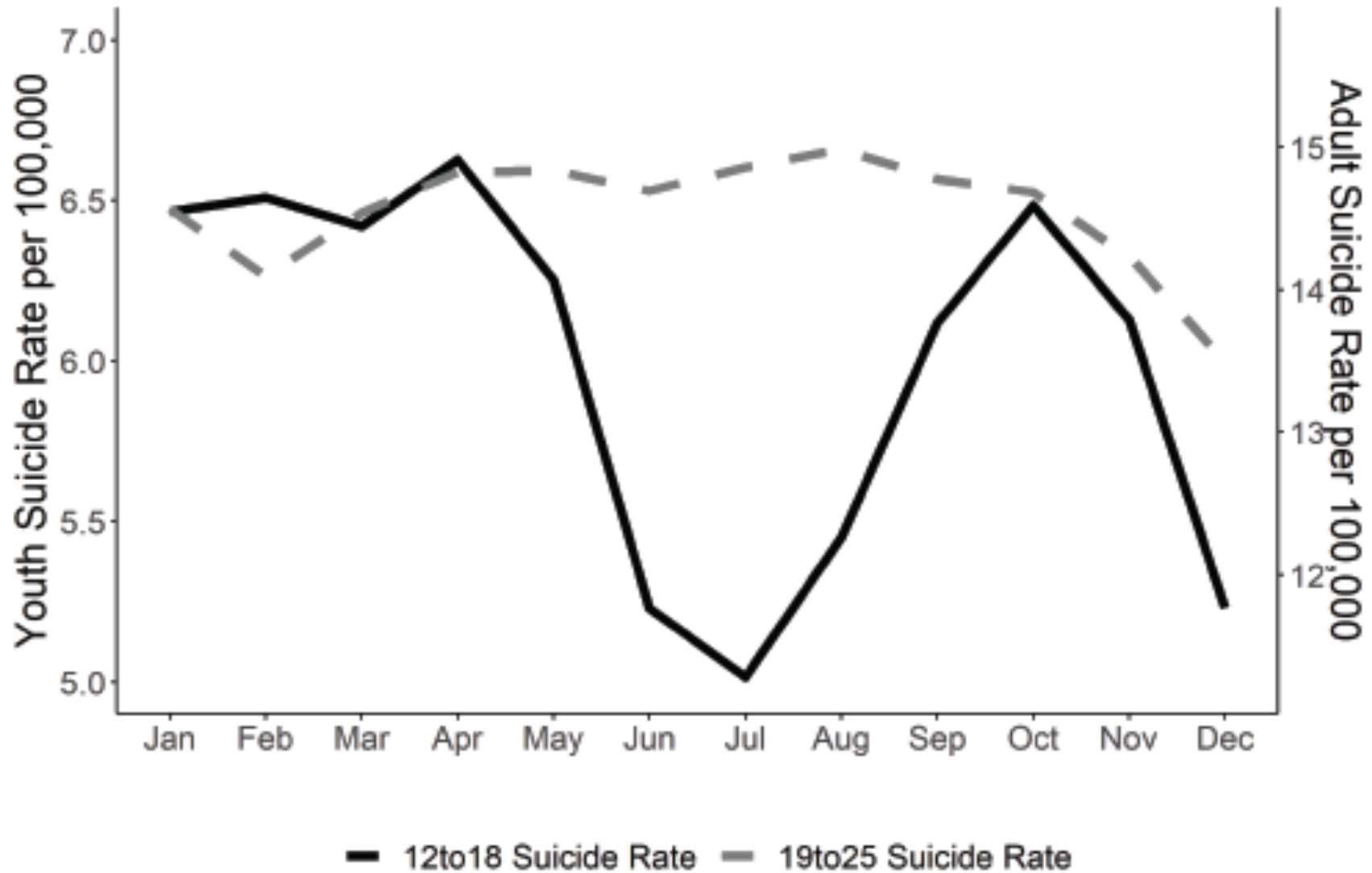


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# U.S. teen suicide rates follow the school calendar

Figure 1. Monthly Suicide Rate Per 100,000 Population, 1990-2019



Hansen, Sabia, Schaller (2023) based on NCHS 1990-2019.

# School based services can help

- Golberstein, Zainullina, Sojourner, and Sanders (2024) examine the impact of licensed clinical mental health workers in schools.
- 19 years of administrative data from Minneapolis, plus student surveys (255 schools and 120,000 students each year).
- Staggered rollout shows that in-school services increase use of mental health services, improve disciplinary outcomes, and reduce self-reported suicide attempts.
- No significant effects on average attendance, test scores, or self-reported substance use.



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- ✔ *Supporting pregnant women*
- ✔ *Early childhood intervention programs*
- ✔ *Improving mental health treatment*
- ✔ *Working with schools*

# Conclusions:

- The child mental health crisis is not new.
- Growing recognition of the problem and increasing evidence about effective investments are positive developments.
- Efforts to improve child mental health should address children's prenatal, early childhood, educational, and health care environments.