ABCD

www.abcdstudy.org

Eliana Rosenthal

with lots of help from Sara Franklin-Gillette
What is the ABCD Dataset?

- Adolescent Brain Cognitive Development (ABCD) study (NIH collaboration)
- Largest longitudinal study on brain development and child health in the US
  - 21 cites across US
  - 10 years of data collection, starting at age 9/10 (2016)
  - N=11,000
- Developmental trajectories in terms of neural, cognitive, emotional, and academic functioning, and influencing factors (peers, family functioning, SES, racism, genes, physical health).
  - Substance use focus (how does substance use in adolescence affect mental health)
What is the ABCD Dataset, cont’d

• Academic information, screen time usage, physical activity, cultural affiliations, LGBTQ identity information, sleep information, diagnostics, family history, COVID-19 and racial pandemic data


• Multiple informants!
Recruitment

• 21 sites across US
• Primary recruitment through schools
  • Based on zip codes and economic representation
  • Modeled after American Community Survey (ACS) (representative)
  • Not matched on urbanicity
How to access ABCD data

• “Institution needs to have an active Federalwide Assurance (FWA) to be granted access to ABCD data. Researchers must create an NDA account, complete an automated Data Use Certification (DUC) with approval of an authorized signatory official of their affiliated, NIH-recognized institution, and submit to NDA for review and approval by the ABCD Data Access Committee (DAC).”
  • Lehigh has an active FWA!

• Can download small data sets individually

• Open Source Science and reproducibility (GitHub)

What have we done with the ABCD dataset so far?

Current:
Construct Validity of the Dysregulation Profile (CBCL), Impact of COVID-19 on children with ADHD, Trajectories of children with ADHD (which malleable variables moderate their symptomology)

Past:


The Allostatic Load of Adverse Events and its Impact on Youth Mental Health

Eliana Rosenthal, M.Ed., Sara Franklin-Gillette, M.Ed. & George J. DuPaul, Ph.D

INTRODUCTION

- Experiencing an adverse event during childhood such as dealing with the death of someone in the family, being the victim of a crime, and/or having a family member arrested has been linked to a myriad of mental consequences (Tarren-Sweeney, 2008; Van Niel et al., 2014).
- Experiencing cumulative adverse events in childhood is correlated with increased risk for suicide (Van Niel et al., 2014) as well as maladaptive adult behavior such as substance abuse (Merrick et al., 2017).
- What has yet to be explored is the connection between other psychopathological child functioning variables and experiencing an adverse event.

Study Aims:
- To examine how much one or more adverse events affected depressed/withdrawn symptoms and stress symptoms on the Child Behavior Checklist (CBCL).

METHODS

- Participants:
  - n= 4941 adolescents (M_age = 9.9 years; 47.8% female)
  - All participants are part of the Adolescent Brain and Cognitive Development Study
- Measures:
  - Youth Mental Health Survey: y/n answers to experience of one or more of 25 different adverse events, including having a family member get arrested, experiencing a loss (death) in the family, experiencing direct crime, and experiencing excessive arguing in the home in the past year.
  - The Child Behavior Checklist (Achenbach, 1991) t-scores from depressed/withdrawn symptoms and stress subscales; 28 items

![CBCL Stress Score by Adverse Event](image)

Even a small amount of adversity can affect stress levels

ANALYTIC PLAN AND RESULTS

- Analytic Plan
  - ANOVAs and post-hoc Tukey tests comparisons for 6 groups (scores of zero through five and more reported adverse events)
  - Baseline:
    - Significant differences between-group symptoms in depressed/withdrawn symptoms, F(5,426) = 5.688, p < 0.001, η² = 0.060 and in stress symptoms, F(5,426) = 17.061, p < 0.001, η² = 0.200.
    - Compared to children who had experienced zero or one event, children who had experienced ≥ 5 adverse events had significantly worse withdrawn/depressed symptoms (p = 0.019, p < 0.001).
    - Compared to children who had experienced zero or one event, children who had experienced two (p = 0.005, p < 0.001), three (p = 0.005; p = 0.001), four (p = 0.005; p = 0.001), and ≥ 5 (p < 0.001; p < 0.001) adverse events had significantly worse stress symptoms.

DISCUSSION

- Stress scores accumulated as soon as two or more adverse events had occurred while withdrawn/depressed scores required higher levels of adversity.
- In addition to prevention efforts to address depression, an important area to target for children who experience low levels of adversity is stress.
- One key limitation of this finding is that all data comes from either parent or self-report measures.

Future Directions:
- Even low levels of adversity may require support to deal with stress in a healthy way. Clinicians and researchers working with children who have recently experienced an adverse event should keep in mind the allostatic load associated with experiencing 5 or more adverse events and the effects it might have on their mental health when working with these pediatric populations.
- Given that adverse childhood events can significantly impact adult behavior and health, preventive measures should be put in place early on.
Thank you!

Questions?