

Adverse Childhood Experiences (ACEs): Issues and Contributing Factors

Moderator


Sonali Rajan



Lightning Round &
Panel Discussion:
Adverse Childhood
Experiences (ACEs):
Issues and
Contributing Factors

with

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- 1. Cognitive control performance and fMRI correlates vary by ACEs in children**
Tamara Sussman
 - 2. Stop abuse: ACE and criminality**
Gloria Hu
 - 3. Child maltreatment, gender and sensation seeking trajectories**
Tamara Sussman
 - 4. What proportion of US deaths are attributable to adverse childhood experiences?**
Lucy Grummitt & Noah Kreski
 - 5. Amplifying the voice of urban youth: An opportunity for gun violence prevention**
Nina Agrawal
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1. Cognitive Control Performance and fMRI Correlates Vary by ACEs in Children

Tamara Sussman¹

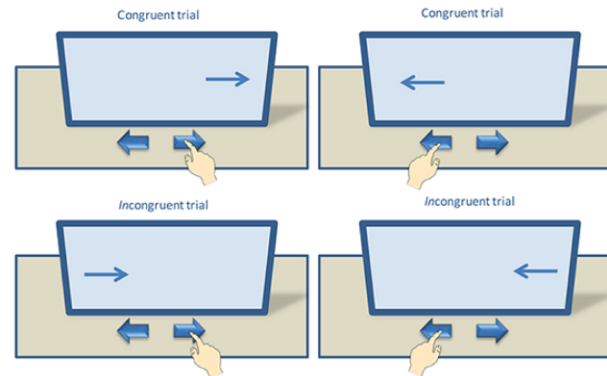
¹Department of Psychiatry, Columbia University and New York State Psychiatric Institute

- Adverse childhood experiences (ACEs) are associated with substance use disorders (SUD) (e.g. Douglas et al, 2010; Mersky et al, 2013)
- However, the cognitive and neurodevelopmental mechanisms driving ACE-related SUD risk are not well characterized, limiting prevention efforts.
- Improved understanding of this relationship is particularly important, as nearly 1 in 4 American adults report over 2 ACEs (Merrick et al, 2018).

Method: ACEs were measured via the Kaiser CDC ACE questionnaire. The Simon Task was performed while fMRI data was collected.

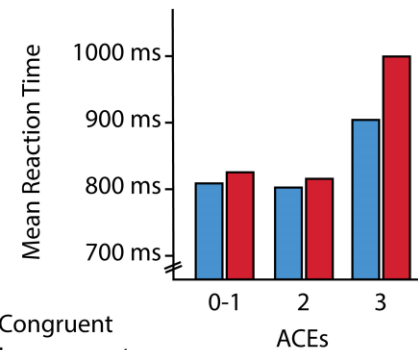
32 children (17 female; mean age = 8.00) responded to the direction an arrow pointed while ignoring where the arrow was presented.

Top row: congruent trials
Bottom row: incongruent trials



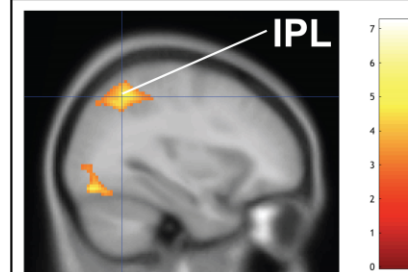
Results:

A. As ACEs increase, RT increases

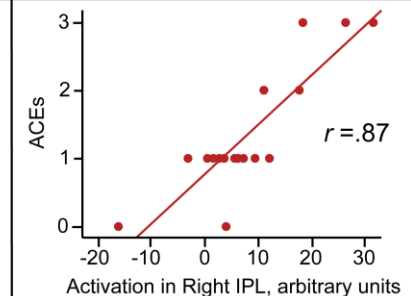


Responses on congruent compared to incongruent trials were faster, $t(31)=-5.44$, $p < .005$, and more accurate, $t(31)=3.11$, $p < .005$.

Reaction times increased with ACEs, particularly on incongruent trials, $F(1,2) = 3.06$; $p = .06$; $\eta_p^2 = .17$



B. As ACEs increase, activity in IPL increases along with RT on correct trials.



C. Relationship between ACEs and neural activity in right IPL.

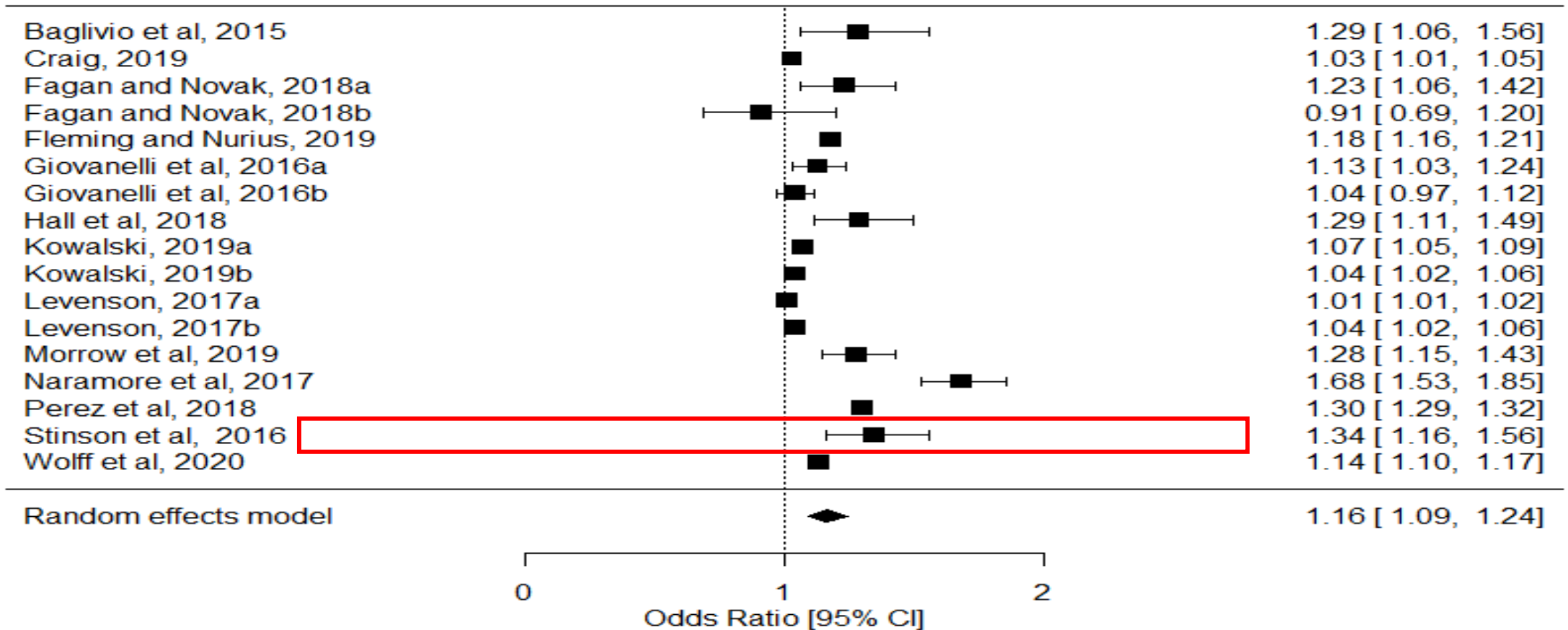
2. ACEs and Criminality: A Systematic Review and Meta-Analysis

Gloria Hu¹, Stanford Chihuri², and Guohua Li^{1,2}

¹Department of Epidemiology, Mailman School of Public Health Columbia University

²Department of Anesthesiology, Vagelos College of Physicians and Surgeons, Columbia University

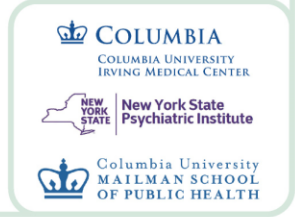
Author(s) and Year



3. Are Gender and Child Maltreatment Subtypes Related to Trajectories of Sensation Seeking?

Tamara J. Sussman,^a Julian Santaella-Tenorio,^b Cristiane S. Duarte,^a Melanie M. Wall,^{a,c} Maria Ramos-Olagastí,^{a,d} Shakira F. Suglia,^e Glorisa Canino,^f Hector Bird,^{a,g} Silvia S. Martins^b

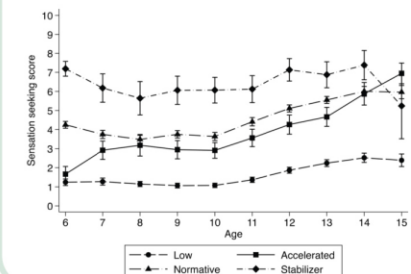
a Department of Psychiatry, Columbia University and New York State Psychiatric Institute
 b Epidemiology Department, Columbia University, Mailman School of Public Health
 c Department of Biostatistics, Columbia University, Mailman School of Public Health
 d Child Trends
 e Department of Epidemiology, Emory University, Rollins School of Public Health
 f Behavioral Sciences Research Institute, University of Puerto Rico
 g Department of Psychiatry, Ponce Medical School



Introduction

- Child maltreatment and elevated sensation seeking are associated with increased rates of substance use, substance use disorders and antisocial behaviors
- Latinx communities are under-represented in research
- Among Latinx ethnic groups, Puerto Ricans have the highest rates of psychiatric disorders
- Rates of child maltreatment, child maltreatment subtypes, and sensation seeking levels differ by gender
- Longitudinal data from a study of Puerto Ricans living in two socio-cultural contexts were used to determine whether child maltreatment subtypes, gender, or socio-cultural context relate to trajectories of sensation seeking

Figure 1. Mean sensation seeking scores as a function of categorical age, site, sensation seeking trajectories and the interaction between age and trajectories



Methods

- 2,489 participants from the Boricua Youth Study (BYS; 48.49% girls) living in New York and in Puerto Rico (5-15 years old at Wave 1)
- The Parent-Child Conflict Tactics Scale and the Sexual Victimization Scale at Wave 1 were used to measure child maltreatment subtypes
- We used multinomial logistic regression to probe the association between child maltreatment subtypes, gender, socio-cultural context and sensation seeking trajectories (Figure 1)

Results

- Girls, but not boys, were more likely to have an elevated sensation seeking trajectory than a normative trajectory if they experienced:
 - Neglect, AOR [95% CI] = 5.33 [1.35, 21.03]
 - Physical abuse, AOR [95% CI] = 3.66 [1.07, 12.54]
- No significant interactions between socio-cultural context (i.e. New York vs Puerto Rico) and maltreatment subtype on sensation seeking were found

Discussion

- This research suggests:
 - Sensation seeking trajectories vary by childhood maltreatment subtypes
 - Gender moderates this relationship
- Results underline the importance of considering gender when exploring how child maltreatment relates to outcomes
- Physical abuse and neglect may relate to higher sensation seeking trajectories for girls, but not boys, due to greater endocrinological reactivity to stressors
- Elevated sensation seeking could be a mechanism by which child maltreatment increases risky behaviors, and psychopathology.
- Limitations include:
 - Maltreatment was self-reported
 - No assessment of levels of peer sensation-seeking
 - Although measures of maltreatment preceded the trajectories of sensation seeking, causality cannot be established

Table 1. Gender as a moderator of the association between child maltreatment variables and sensation seeking trajectories^{a, b}

| Variable | Normative (n girls = 443; n boys = 646) | Low (n girls = 573; n boys = 354) | | Accelerated (n girls = 139; n boys = 160) | | Elevated (n girls = 51; n boys = 123) | |
|---------------------------|---|--------------------------------------|--------------|--|---------|--|--------------|
| | | AOR | p-value | AOR | p-value | AOR | p-value |
| Neglected - lifetime* | | | | | | | |
| Girls | Reference | 1.23 (0.43, 3.55) | 0.702 | 1.42 (0.26, 7.64) | 0.684 | 5.33 (1.35, 21.03) | 0.017 |
| Boys | Reference | 0.79 (0.31, 2.05) | 0.630 | 0.69 (0.23, 2.09) | 0.516 | 0.61 (0.28, 1.35) | 0.222 |
| Verbal abuse - lifetime | | | | | | | |
| Girls | Reference | 0.33 (0.15, 0.75) | 0.008 | 0.51 (0.15, 1.77) | 0.290 | 3.20 (0.99, 10.4) | 0.053 |
| Boys | Reference | 0.14 (0.01, 2.64) | 0.187 | 0.89 (0.34, 2.36) | 0.817 | 1.61 (0.83, 3.13) | 0.158 |
| Physical abuse - lifetime | | | | | | | |
| Girls | Reference | 0.57 (0.27, 1.2) | 0.142 | 0.38 (0.05, 2.72) | 0.332 | 3.66 (1.07, 12.54) | 0.039 |
| Boys | Reference | 0.39 (0.16, 0.97) | 0.042 | 0.45 (0.18, 1.13) | 0.089 | 0.94 (0.44, 2.02) | 0.871 |
| Sexual abuse - lifetime* | | | | | | | |
| Girls | Reference | 1.01 (0.34, 2.98) | 0.984 | 0.78 (0.08, 7.68) | 0.830 | 3.58 (0.99, 14.26) | 0.071 |
| Boys | Reference | 0.38 (0.05, 2.88) | 0.350 | 1.24 (0.31, 5.03) | 0.759 | 0.2 (0.02, 1.83) | 0.155 |

*The gender-child maltreatment interaction term was significant (p<0.05).

^a Model-weighted and adjusted for sampling design and adjusted for the covariates: age, gender, site, poverty, parental alcohol and drug abuse, parental antisocial disorder, parental psychiatric disorders, exposure to violence and parental loss.

^b Sensation seeking trajectory groups were derived from latent class analysis

AOR= adjusted odds ratio.

Fit statistics: Akaike (AIC) = 30293.975; Bayesian (BIC) = 30427.827

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 MH56401 (Bird)
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 MH098374 (Alegria, Canino, Duarte)
 MH016434 (Veenstra-Vanderweele, Marsh)

4. Health Outcomes Attributable to Childhood Adversity

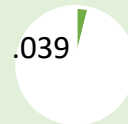
Lucy Grummitt^{1,2} and Noah Kreski²

¹Matilda Centre for Research in Mental Health and Substance Use

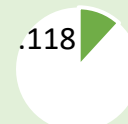
²Department of Epidemiology, Mailman School of Public Health

Population Attributable Fractions of Outcomes Due to Childhood Adversity

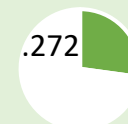
☐ Obesity



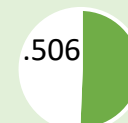
☐ Tobacco Use



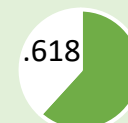
☐ Illicit Substance Use



☐ Suicide Attempts (Male)



☐ Suicide Attempts (Female)



Number of Outcomes Attributable to Childhood Adversity

☐ Obesity: 4,234,612

☐ Tobacco Use: 4,020,016

☐ Illicit Substance Use: 7,744,349

☐ Suicide Attempts (Male): 292,720

☐ Suicide Attempts (Female): 534,205

5. AMPLIFYING THE URBAN YOUTH VOICE: An Opportunity for Gun Violence Prevention

“Everyone knows someone who died...and they lash out.”

Nina Agrawal MD
Pediatrics
Columbia Medical Center

Background: Most gun violence (GV) research focuses on injuries/deaths. An unrecognized pediatric morbidity is GV exposure

Objective: Explore youth-informed GV prevention for the urban primary care setting

Methods: Youth focus group in South Bronx, 2019. 11 youth, mean age 12 years

Results:

- Youth were not comfortable discussing GV with health providers. Barrier were lack of (1) trust (2) provider relatability to youth (3) provider training
- Many youth reported emotional problems associated with GV exposure and desired school staff to recognize emotional changes and refer for counseling
- Youth comments: “You talk to your doctor about a cold and school”. “The doctor should make me feel like I want to talk about it” (see title)

Conclusion: GV exposure should be considered:

- (1) A risk factor for emotional health problems in youth
- (2) An adverse childhood experience to identify the extent of the problem and inform prevention efforts.

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