

DO ADVERSE CHILDHOOD EXPERIENCES PREDICT RISKY CHOICES OR IMPULSIVE CHOICES?

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BACKGROUND

Life History Theory (Griskevicius, Cantu, Delton, & Simpson, 2013)

- Species fall along a continuum of slower to faster life strategies
- Harsher and less predictability lead to faster life strategies, while consistency and predictability lead to slower life strategies
- Life History speed can be affected by adversity, socioeconomic status, and other ecological factors

| Fast | Reward Orientation | Slow |
|-------|--------------------|------|
| Short | Time Horizon | Long |
| High | Impulsivity | Low |
| High* | Risk-Taking | Low* |

Decision-Making

- **Temporal Discounting (i.e., impulsive choice):** tendency to prefer smaller, sooner reward over later, larger rewards (e.g., delay of gratification)
- **Risky Decisions:** tendency to choose a risky option over a certain option
- In a pilot study ($N=47$), we found that childhood traumatic experiences predicted steeper temporal discounting (i.e., less patience or more impulsivity). We did not observe a relationship between traumatic experiences and risky choice.

Question

Does childhood adversity relate to decision-making, even after taking into account childhood SES, anxiety, and depression?

RESULTS

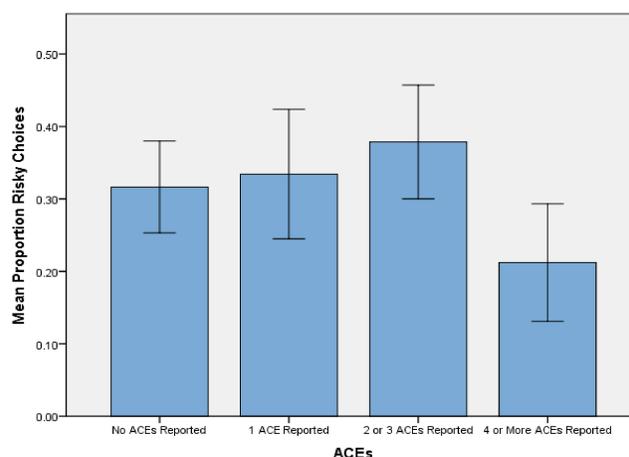


Figure 3. Mean proportion of risky choices based on number of Adverse Childhood Experiences (errors bars are 95% CI).

- We conducted an ANCOVA with ACEs as a between participant factor (0, 1, 2-3, or 4+) and childhood SES, anxiety, and depression as covariates and risky choices as the dependent variable.
- We did not observe a statistically significant relationship between ACEs and risky choices, $F(1, 82)=2.39, p=0.07, \eta_p^2=0.04$.
- Examining planned post-hoc tests, participants with four or more adverse childhood experiences were less risky than participants with two-three ACEs, $p=0.009$.
- No other contrasts were statistically significant, $ps>0.08$.

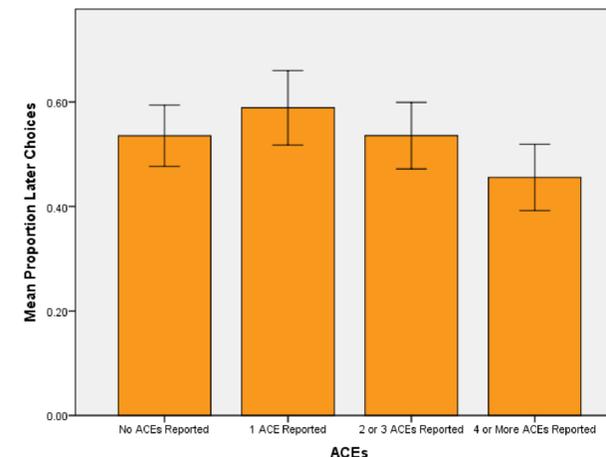


Figure 4. Mean proportion of later choices based on the number of Adverse Childhood Experiences. (errors bars are 95% CI).

- We conducted a similar analysis, with proportion later choices as the dependent variable.
- We did not observe a relationship between ACEs and proportion of later choices, $F(1,182)=1.73, p=0.16, \eta_p^2=0.03$, while controlling for childhood SES, anxiety, and depression.
- Anxiety was related to proportion of later choices, $F(1,182)=5.09, p=0.025, \eta_p^2=0.03$. Higher levels of anxiety were related to a lower proportion of later choices.

METHODS

Participants

- $N = 191$ UW-Platteville students
- 66% Female, $M_{age} = 20.1$ years ($SD = 1.80$ years)

| Variable | Mean (SD) | Min. | Max | N |
|--------------------------|--------------|------|-----|-----|
| ACE score | 1.8 (2.00) | 0 | 8 | 189 |
| Childhood SES | 12.6 (4.28) | 3 | 21 | 191 |
| Anxiety | 4.8 (2.00) | 2 | 8 | 190 |
| Depression | 3.9 (1.94) | 2 | 8 | 190 |
| Proportion Later Choices | 0.53 (0.223) | 0 | 1 | 191 |
| Proportion Risky Choices | 0.32 (0.266) | 0 | 1 | 190 |

Materials and Procedure

All procedures approved by UWP IRB. We used a correlational design. Students completed the following measures online using Qualtrics:

- Demographics** (e.g., age, gender, childhood SES, and anxiety/depression)

2. Adverse Childhood Experiences Questionnaire (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, & Marks, 1998)

| | |
|-----------------------|---|
| Abuse | Physical, Emotional, Sexual |
| Neglect | Physical, Emotional |
| Household Dysfunction | Mental illness, Incarcerated relative, Violence, Substance abuse, Divorce |

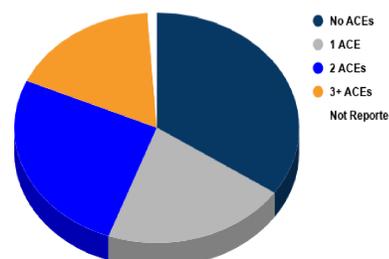


Figure 1. Adverse Childhood Experiences Specific Categories

Figure 2. Break down of Adverse Childhood Experiences

- Intertemporal choice task** (e.g., would you prefer \$22 now or \$35 in 10 days?) – Calculated proportion of later choices out of 27 choices to index **temporal discounting (i.e., impulsive choice)**
- Risk choice task** (e.g., would you prefer \$22 for sure or 50% chance of \$40) – Calculated proportion of risky choices out of 27 choices to index **Risky Choice**

Conclusions and Future Directions

- Inconsistent with our pilot study, we found no correlation between adverse childhood experiences and risky decision making or temporal discounting, when taking into account socioeconomic status, anxiety, and depression.
- The differences between studies may be the result of
 - **Sampling:** Our first study focused solely on psychology students who reported more adversity, while our second study included a wider range of UWP students; our first study also used a smaller sample size meaning we may not have had adequate power
 - **Context:** Although people tend to have trait-like tendencies to delay gratification or take risks, research also shows that they are influenced by context and this may be necessary to elicit group differences
- We suggest the following future directions:
 - Do particular circumstances elicit impulsive choice in individuals with more ACEs?
 - What factors contribute to resilience in individuals who experience ACEs?
 - Would we obtain similar results in a setting where lower economic status is more prominent?