

Childhood deprivation, threat & alcohol use problems: A focus on impulsive behavior, reward-related processes, and emotion dysregulation

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BACKGROUND

- ❖ **Adverse childhood experiences (ACEs)** are traumatic events that include physical, emotional, and sexual abuse and physical and emotional neglect. *Childhood abuse* is often referred to as experiences associated with “threat,” whereas *childhood neglect* is associated with “deprivation.”
- ❖ Numerous factors that mediate the relationship between early life adversity and substance use problems in emerging adulthood **Heuristic Model (Al’Absi, 2020)**
 - ❖ Impaired reward-related processes
 - ❖ Increased impulsive behavior, and
 - ❖ Emotion dysregulation
- ❖ Impairments in affective mechanisms may explain associations between impulsivity, emotion dysregulation, and childhood adversity

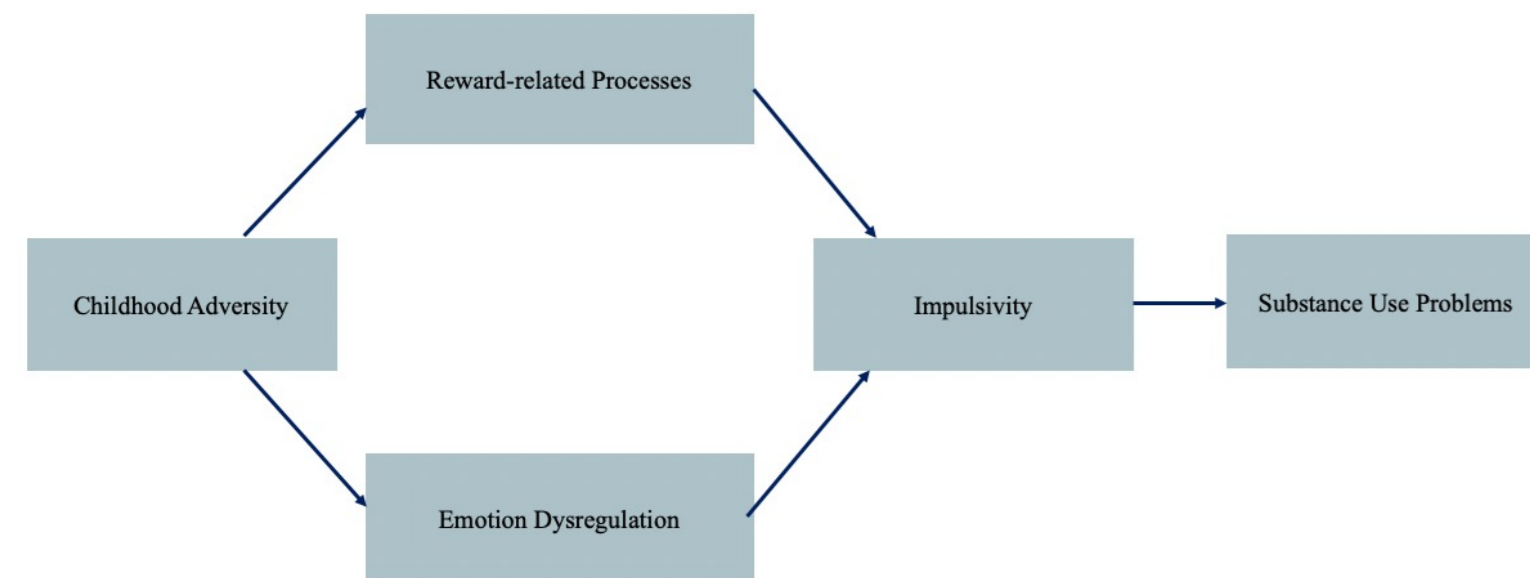


Figure 1. Proposed model for childhood adversity, emotional dysregulation, reward-related processes, impulsivity, and substance use problems.

RESEARCH OBJECTIVES

- ❖ To understand how different facets of childhood adversity (i.e., threatening and deprivation experiences) influence the heuristic model
- ❖ The heuristic model was previously supported by work conducted in our lab.
 - ❖ Long-term effects of stress and early life adversity on the brain contribute to dysregulation of the stress response, emotional reactivity, reward systems, cognitive dysregulation, and delay discounting that led to impulsive and high-risk behaviors, such as drug use and relapse.

METHODS

- ❖ **Emerging adults** aged 18-29 ($n = 397$) were recruited from the community using online platforms such as Kijiji and Prolific. Participants were eligible if they reported drinking at least 2-4 times a month.
- ❖ Participants completed questionnaires assessing childhood adversity, reward-related processes (i.e., sensitivity to reward and punishment, reward anticipation and consumption, reward responsiveness, reward drive, and fun seeking), impulsivity, emotion dysregulation, and alcohol-related consequences.
- ❖ Facets of childhood adversity were measured using the **Childhood Trauma Questionnaire**, and reward indicators via the **Temporal Experience of Pleasure Scale (TEPS), BIS/BAS, UPPS, DERS, & YAACQ**

DATA ANALYSIS

- ❖ Data analysis was primarily conducted in R and SPSS including demographics and path model analysis.
- ❖ Path analyses were conducted using R to determine whether there are differences in the models when examining childhood deprivation versus threatening experiences.
- ❖ Likelihood Ratio Test of the two path models was conducted to determine which model fits the data best.

RESULTS

Demographics

ETHNICITY		
	Frequency	Percent
European	257	64.7
East or Southeast Asian	42	10.3
South Asian	14	3.5
Middle Eastern	8	2.0
African	22	5.5
Latin, Central, and South American	30	7.6
Caribbean	6	1.5
Indigenous	2	0.5
Other	16	4.0
Total	397	100.0

- European
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- Middle Eastern
- African
- Latin, Central, and South American
- Caribbean
- Indigenous

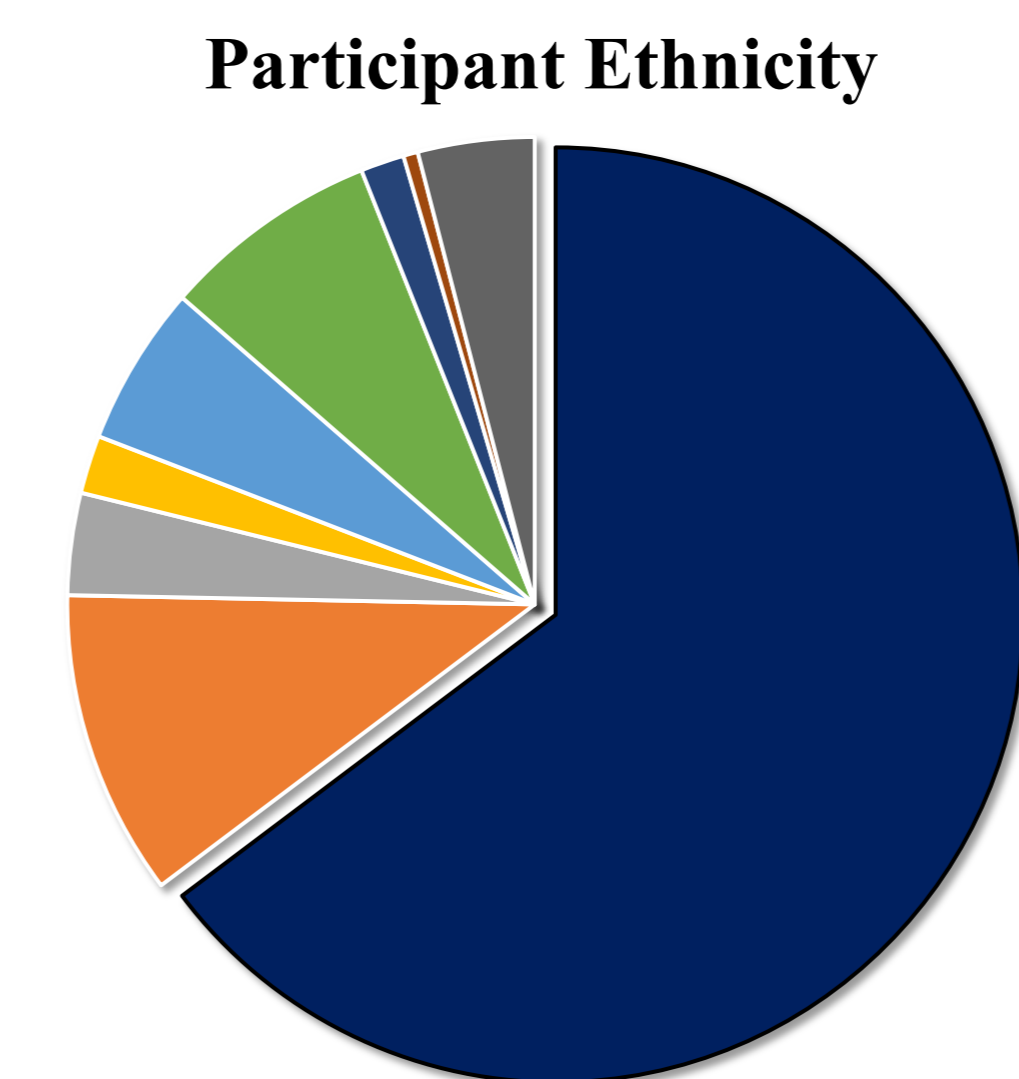


Figure 1. Participant demographics by ethnicity **397 Participants; M = 24.92 years; 59.4% Female**

Table 1. Participant distribution by ethnicity frequency, percent, valid percent, and cumulative percent

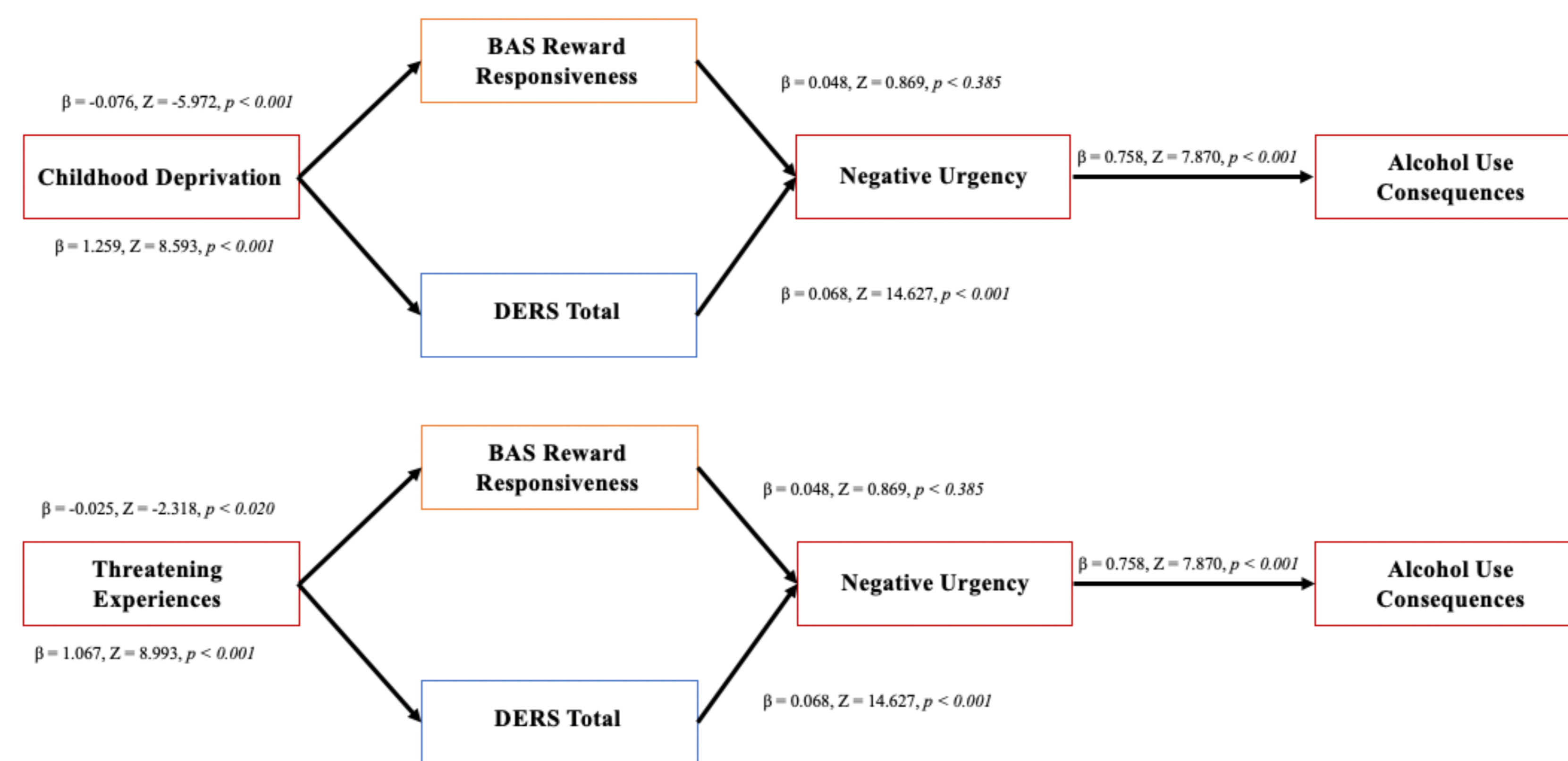


Figure 2. Path Model Analysis of Proposed Models of **Childhood Deprivation and Threatening Experiences**. The model appeared to have good fit, SRMR = .058, RMSEA = .098*, 90% CI [.057, .144], CFI = .954. Both path models appeared to have good fit, SRMR = .050, RMSEA = .081, 90% CI [.039, .128], CFI = .969 and SRMR = .056, RMSEA = .096, 90% CI [.055, .142], CFI = .954) for childhood deprivation and threatening experiences, respectively.

Table 1. Descriptive statistics and bivariate correlations for childhood adversity, substance use, and reward variables.

Note: * $p < 0.05$ ** $p < 0.01$

	Mean	SD	1	2	3	4	5	6	7	8
1. CTQ [5-125]	51.82	14.06	1	-.198**	-.122*	.272**	.312**	.379**	.436**	.285**
2. BAS Reward Responsiveness [5-20]	17.10	2.088	-.198**	1	.742**	-.078	.000	-.057	-.059	-.031
3. BAS Total Score [24-80]	39.48	5.553	-.122*	.742**	1	.252**	.116*	.015	-.086	.101*
4. UPPS-Positive Urgency [4-16]	7.66	2.829	.272**	-.078	.252**	1	.534**	.430**	.346**	.351**
5. UPPS-P Negative Urgency [4-16]	9.95	2.871	.312**	.000	.116*	.534**	1	.554**	.591**	.367**
6. DERS Impulse Control [6-30]	12.64	5.072	.379**	-.057	.015	.430**	.554**	1	.763**	.382**
7. DERS Total Score [36-180]	90.80	25.177	.436**	-.059	-.086	.346**	.591**	.763**	1	.306**
8. YAACQ [0-24]	8.03	5.928	.285**	-.031	.101*	.351**	.367**	.382**	.306**	1

DISCUSSION

- ❖ Childhood deprivation and threatening experiences *significantly predicted reward responsiveness and emotion regulation*, but impulsivity (negative urgency) was only significantly predicted by emotion regulation.
- ❖ Subsequently, **negative urgency** significantly predicted alcohol-related consequences.
- ❖ A likelihood ratio test of the two path models demonstrated that the **“childhood deprivation” predictor** was the model with the better fit (AIC = 9586.9, BIC = 9626.7, $\chi^2(2) = 14.40, p < .001$).
- ❖ Limitations:
 - ❖ Recent research shows that the types of adversity, the chronicity and age of onset has a significant impact on later life outcomes including significant impairments in reward related outcomes (Bounoua et al., 2021).
 - ❖ There is no measure of frequency, intensity, or environmental factors of stress that influence the heuristic model
 - ❖ Resilience-related psychosocial processes can buffer the negative effects of early childhood adversity and are not captured by current research (Al’Absi 2020)

FURTHER INVESTIGATION

- ❖ Investigate whether effect of childhood adversity is generalized to drug abuse and cannabis related disorders
 - ❖ Does the heuristic model vary given other substance-use disorders
- ❖ How does path model vary between clinical vs. non-clinical samples?
 - ❖ ADHD Participants
- ❖ Understanding of **differential expression and effect of childhood adversity in different populations**
 - ❖ Crucial in assessing which populations are at a higher risk of childhood adversity and consequently substance abuse disorders

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