University of New Hampshire

RESEARCH SOCIETY ON ALCOHOL · 2026 · BEHAVIORAL ECONOMICS

Trauma Severity, Resilience, and Alcohol Demand: Sequential Associations with Behavioral Economic Indices in College Students

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Trauma and **resilience** each independently push alcohol's **Essential Value (EV)** higher. **EV** is the pathway from **trauma** to **drinking**.

BACKGROUND

Valuing alcohol, not just counting drinks

Behavioral-economic **demand** quantifies how strongly alcohol is valued, independent of how much people drink. **Essential Value (EV)** indexes how persistently alcohol is purchased as price rises.

WHAT WE TEST *individual differences - not a population average*

Stress drives drinking, yet that association has typically been inferred from population-level data that only index consumption. We model it at the **individual level**, with trauma *and* resilience each acting on how strongly a person values alcohol, the proximal predictor of drinking. **First study to model all three jointly.**

HYPOTHESES & AIMS

First joint test of trauma *and* resilience

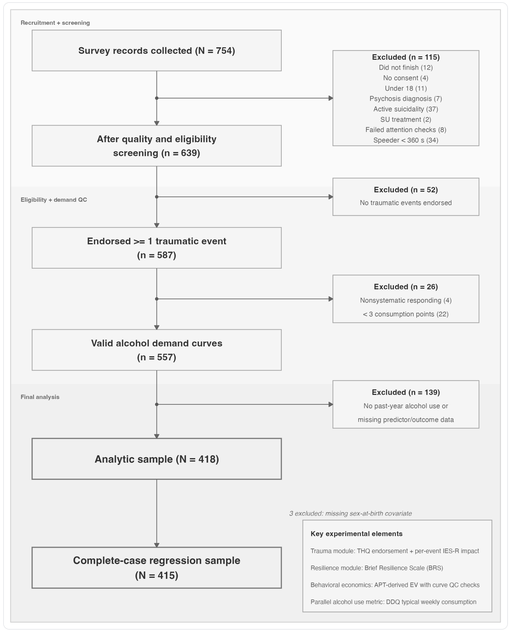
- H1 **Greater cumulative trauma** predicts **higher** EV.
- H2 **Greater resilience** predicts **lower** EV (protective).
- H3 **Resilience buffers** the trauma → demand link. EXPLORATORY

METHODS

Design & measures

- **N = 754** UNH college students with past-year alcohol use; cross-sectional online survey.
- **Cumulative trauma impact** = summed IES-R across every endorsed trauma.
- **Resilience** = Brief Resilience Scale (BRS).
- **Alcohol Purchase Task** → Hursh–Silberberg curves → EV, elasticity (α), Q_0, P_{max}, O_{max}.
- Hierarchical regression (HC3 robust SE); bootstrapped mediation (5,000 BCa resamples).

FIGURE 1 · PARTICIPANT FLOW (CONSORT) · **754 → 415**



RESULTS · DISTRIBUTIONS

01 A spectrum, not a switch

Cumulative trauma impact and resilience both vary **by degree**: graded burden, not mere exposure.

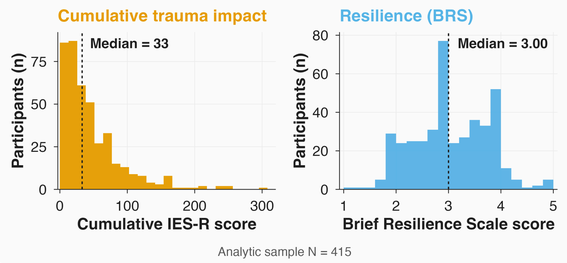


Figure 2 · Cumulative trauma impact (summed IES-R) and resilience (BRS) across the analytic sample (N = 415); dashed lines mark sample medians.

ORIENT These two scales are the predictors used in every panel that follows. → the question becomes what that spread predicts.

RESULTS · CORRELATIONS

02 Small signals, shared variance

Trauma and resilience each show a **small positive** association with Essential Value. Their contributions can be separated only by modeling both together.

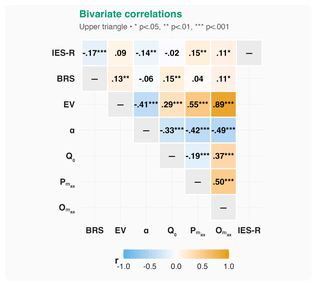


Table 1 · Pearson correlations among cumulative trauma, resilience, and demand indices (N = 415). Upper triangle; † p < .10, * p < .05, ** p < .01, *** p < .001.

HOW TO READ Read down the EV column: resilience (BRS) is significantly correlated with EV, and trauma (IES-R) trends in the same direction (p = .09). The EV–trauma link is unpacked in the bivariate plots below. →

RESULTS · BIVARIATE

03 Resilience, against prediction

Higher resilience is **reliably** associated with higher EV (r = .125, p = .011). This runs opposite the protective direction we anticipated.

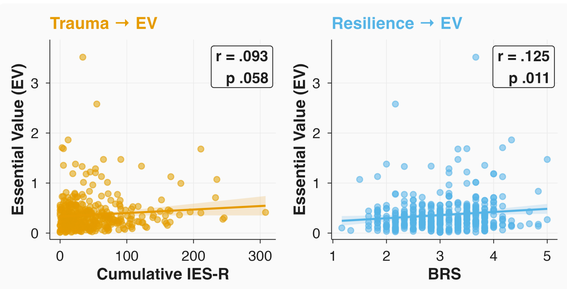


Figure 3 · Essential Value plotted against cumulative trauma (left) and resilience (right). Points represent participants; the line is a linear fit with 95% CI; Pearson r is shown in each panel (N = 415).

HOW TO READ A rising line indicates that higher scores accompany higher EV. Both slopes are positive; the resilience slope is the statistically reliable one. It was predicted to be negative, and this reversal is examined in *The resilience paradox* (column 4). →

RESULTS · DEMAND

04 One price, many valuations

The aggregate demand curve fit the data well (R^2 = .96). Essential Value showed substantial **between-subject variability**, providing the meaningful spread required for downstream regression analyses. That individual variation is what the model sets out to explain.

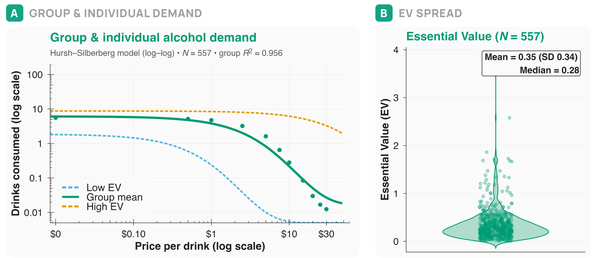


Figure 4 · (A) Group Hursh–Silberberg demand curve (geometric mean), with the lowest- and highest-EV participants shown as dashed lines; (B) EV distribution with dot-plot underlay (N = 557 valid curves).

WHY EV Panel A shows the group curve; panel B shows the range of individual EV values. EV measures how persistently a person purchases as price rises, reflecting motivational strength rather than low-price volume, and is the primary outcome in the regression models.

RESULTS · EV REGRESSION

05 Two independent contributions

Trauma (p = .030) and resilience (p = .004) each explain **unique variance** in EV; their interaction does not (p = .490). These are distinct routes, not a buffer.

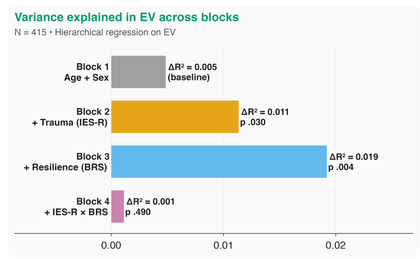


Figure 5 · Hierarchical regression on EV. Blocks enter in order: Age + Sex, then trauma, then resilience, then their interaction. Bars show the variance added at each step (HC3 robust SE, N = 415).

HOW TO READ Each bar is what that predictor adds **on top of** the blocks above it. Demographics add almost nothing; trauma and resilience each add a reliable slice; the interaction adds none.

RESULTS · SPECIFICITY

06 Specific to value, not consumption

The same predictors explain nothing in **typical weekly drinks**. The association is confined to how strongly alcohol is valued.

Drinking quantity (DDQ): no surface effects

Hierarchical regression on typical weekly drinks (N = 415) — every block is non-significant.

Block 1 Covariates	Block 2 + Trauma	Block 3 + Resilience	Block 4 + Interaction
ΔR² = 0.137	ΔR² = 0.004	ΔR² = 0.003	ΔR² = 0.001
(baseline)	p .166	p .220	p .584
n.s.	*n.s.*	*n.s.*	*n.s.*

Table 2 · The same hierarchical models predicting typical weekly drinks (DDQ) in place of EV (N = 415).

CONTROL TEST A parallel test to Figure 5: with typical drinking as the outcome, neither predictor adds variance beyond age and sex. The associations are specific to how alcohol is valued, not how much is consumed, which motivates the mediation model. →

RESULTS · MEDIATION · THE PATHWAY

07 The pathway, traced

Trauma raises Essential Value, and EV drives drinking. Does EV **carry** trauma's association into consumption? Mediation tests that chain.

Trauma → EV → Drinking

N = 415 • 5,000 bootstrap, bca.simple CI

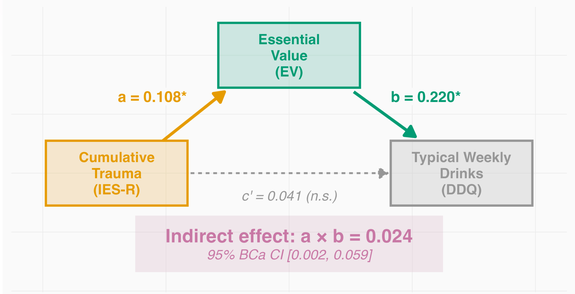


Figure 6 · Mediation path: cumulative trauma (IES-R) → EV → typical drinks per week, adjusted for age and sex; 5,000 BCa resamples (N = 415).

THE PAYOFF The indirect path **a×b = 0.024** 95% BCa CI [.002, .059] excludes zero; the direct path is not significant. **EV mediates** the association between cumulative trauma and weekly drinking, the study's central finding.

INTERPRETATION · AGAINST PREDICTION

The resilience paradox

EXPECTED ↓ Resilience ~~buffers~~ stress → lower demand

OBSERVED ↑ Resilience → **higher** demand · p = .004

Held **independent of trauma**, resilience may index **social engagement and approach motivation** in college drinkers rather than protective buffering.

CONCLUSIONS

EV is the pathway from trauma to drinking

- Cumulative trauma and resilience are **independently** associated with alcohol's reinforcing value rather than with how much students drink.
- **EV is the pathway:** it mediates the association between trauma and consumption.
- Resilience predicted **higher** demand. This is opposite to buffering and may index **social engagement** in college drinkers.
- Supports **demand-based phenotyping** of stress-related alcohol vulnerability in nonclinical samples.

LIMITATIONS

- Cross-sectional design; no causal or temporal inference.
- Adapted 10-item IES-R and a hypothetical purchase task.
- Sample skews women, White, and lower-trauma; single campus.

FUTURE DIRECTIONS

- Extend the pathway to **community adults** across the lifespan.
- Decompose demand by drinking context (**social vs. solitary**).
- Trace the resilience paradox (**coping vs. capacity**).
- Develop EV as a demand-based phenotype for **risk stratification**.

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