EVALUATING DISSOCIATIVE EXPERIENCES, ACEs, AND ACQUIRED CAPABILITY FOR SUICIDE IN COLLEGE STUDENTS

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ABSTRACT

The aim of this study was to examine the potential psychophysiological mechanisms: Adverse Childhood Experiences (ACEs), Psychache, Dissociation, Discomfort Intolerance, Pain Catastrophizing (PC), Positive Urgency and Negative Urgency, and their impact on the acquired capability for suicide (AC). Factor analysis of the study variables yielded a three-factor solution consisting of Dissociation, Distress, and Urgency, and Confirmatory analysis replicated the three factors. The Structural Equation Model indicated significant mediation effects between the variables. Psychache and PC significantly mediate the relationship between ACEs and AC. The key finding of our study is that PC was a significant mediator in the relationship between Dissociation and AC with or without the effect of ACEs. Psychache's indirect effect through PC on AC accounted for the most variance within our model. These results clarify the relationships between the variables being examined and their effect on AC, supporting the development theory of Dissociation.

Keywords: Dissociation, Adverse Childhood Experiences, Psychache, Self-Harm, Acquired Capability for Suicide, Discomfort Intolerance, Pain Catastrophizing, Rumination, Physical Pain Tolerance

Evaluating Dissociative Experiences, ACEs, and Acquired Capability for Suicide in College Students

According to the Centers for Disease Control and Prevention (CDC, 2021), suicide ranked as the ninth leading cause of death in the United States in 2020, reflecting a concerning upward trend. Between 2000 and 2020, the national suicide rate increased by 30% (Garnett et al., 2022). Although rates declined modestly from 14.2 per 100,000 in 2018 to 13.5 in 2020, the overall trajectory remains troubling. Research consistently demonstrates that suicidal ideation is a critical precursor to suicide attempts (Beck et al., 1979; Rossom et al., 2017; Wenzel et al., 2011), yet recent evidence challenges the predictive specificity of ideation alone (Ribeiro et al., 2016). While ideation correlates with later risk, the most robust predictors of future attempts include non-suicidal self-injury (NSSI) and prior suicide attempts.

Importantly, common psychiatric risk factors such as depression and impulsivity are shared by ideators and attempters alike, but these do not reliably distinguish those who will act (Klonsky & May, 2015). Psychological dissociation has been proposed as a facilitating factor in the transition from ideation to action. Dissociative symptoms—including depersonalization, derealization, and diminished bodily awareness—may reduce self-protective aversion to pain and facilitate suicidal behavior (Orbach, 1994; Calati et al., 2017). Elevated dissociative experiences have been observed more frequently among individuals with suicide attempts than among non-attempters (Ford & Gómez, 2015).

Dissociative states, especially absorption and emotional numbing, have also been associated with increased impulsivity and a diminished capacity for self-reflection (Butler, 2006; Dalenberg et al., 2012). Together, these patterns may foster a dissociative pathway toward acquired capability for suicide (AC), defined as a reduced fear of death and increased pain tolerance (Joiner, 2005). The present study aims to

clarify the role of dissociation in modulating pain perception and suicide risk, with the broader goal of informing clinical interventions that target dissociative symptoms to reduce suicide attempts.

Dissociation

Suicidal behaviors often involve direct bodily harm, yet little is understood about how individuals with suicidal ideation perceive pain. Theoretical frameworks have posited that dissociation—characterized by disruptions in memory, identity, and bodily integrity—may explain the altered self-experience seen in suicidal individuals (Orbach et al., 1995). Dissociation may create psychological distance from the body, decreasing sensitivity to pain and lowering barriers to self-injury.

Developmental Theory of Dissociation

Dissociation is commonly conceptualized as a psychological defense against trauma, particularly childhood abuse and neglect (Baumeister, 1990; Orbach et al., 1995). Attachment theory offers a developmental lens: children exposed to disorganized or frightening caregiving may develop dissociative tendencies as a means of surviving overwhelming emotional conflict (Main & Hesse, 1990). Over time, these coping mechanisms can become maladaptive, persisting into adulthood and increasing vulnerability to psychopathology (Schauer & Elbert, 2010).

Measuring Childhood Traumatic Experiences

The present study employs the Adverse Childhood Experiences (ACEs) Questionnaire (Felitti et al., 1998) to assess early trauma. The ACEs index includes ten categories: five pertaining to personal abuse and neglect, and five assessing household dysfunction such as substance abuse, mental illness, incarceration, and domestic violence.

Dissociative Experiences

Dissociation can be parsed into psychoform (cognitive-affective) and somatoform (sensorimotor) experiences (Hart et al., 2004). Positive dissociative symptoms include intrusive memories and flashbacks, while negative symptoms involve amnesia and emotional numbing. These experiences can be disorienting and are often described as externally imposed or “forced” (Steinberg, 1995; Polskaya & Melnikova, 2020). The Dissociative Experiences Scale-II (DES-II) is a widely used self-report instrument assessing depersonalization, derealization, amnesia, and absorption (Carlson & Putnam, 1993). It captures both pathological and non-pathological dissociative phenomena.

Depersonalization/Derealization

Depersonalization involves a sense of detachment from the body or self, such as the inability to recognize oneself in a mirror. Derealization reflects a disconnection from external reality, often described as the world feeling “foggy,” distant, or surreal (Steinberg, 1995).

Amnesia

Dissociative amnesia refers to the inability to recall significant personal information, typically related to trauma. Micro-amnesia—forgetting the content of a conversation moments after it occurs—is also common (Steinberg, 1995).

Absorption

Absorption is the deep immersion in internal or external stimuli, such as intense daydreaming or engrossment in media. This state, while common, may interfere with self-monitoring and impulse control (Butler, 2006). Despite debate over whether absorption qualifies as dissociation, it remains strongly associated with dissociative profiles (Soffer-Dudek et al., 2019).

The Link Between Dissociative Experiences and Self-Harm

Non-suicidal self-injury (NSSI) often co-occurs with dissociation and trauma exposure (Ford & Gómez, 2015; Polskaya & Melnikova, 2020). NSSI may function to either interrupt dissociative episodes (anti-dissociation) or induce dissociation to escape intolerable affect (induction-dissociation) (Edmondson et al., 2016). Both pathways reflect maladaptive coping mechanisms that can increase suicide risk.

Psychological Pain

Psychache, defined as unbearable psychological pain, has been proposed as a core cause of suicide (Shneidman, 1993). It encompasses guilt, shame, despair, and hopelessness. When psychache exceeds an individual's coping capacity, suicide may be perceived as the only escape. The Psychache Scale measures the frequency and intensity of psychological pain and distinguishes between tolerable and intolerable levels (Holden et al., 2001).

Pain Catastrophizing

Pain catastrophizing (PC) involves magnifying pain expectations and feelings of helplessness. Individuals high in PC struggle to divert attention from pain and may ruminate excessively, impairing their ability to cope (Sullivan et al., 1995). The Pain Catastrophizing Scale (PCS) assesses three dimensions: Rumination, Magnification, and Helplessness. High scores are associated with greater pain distress and reduced efficacy of coping strategies.

Trauma and Dissociative Experiences: Self-Harm Functions

Nock and Prinstein (2004) identified four functions of self-harm: automatic-negative reinforcement (relief from distress), automatic-positive reinforcement (induction of sensation), social-negative reinforcement (escape from social demands), and social-positive reinforcement (seeking attention). Dissociation may interact with these functions, both triggering and being modulated by NSSI. Empirical evidence supports dissociation as a mediator between trauma and self-harm (Franzke et al., 2015).

Suicide Frameworks

Ideation-to-action theories posit that suicidal ideation and attempts emerge through distinct processes. The Interpersonal Theory of Suicide (IPTS) emphasizes perceived burdensomeness, thwarted belongingness, and acquired capability (Joiner, 2005). Acquired capability is defined by pain tolerance and fearlessness about death. Exposure to pain and trauma can habituate individuals to aversive stimuli, increasing fearlessness and decreasing sensitivity to pain—thus facilitating suicidal behavior (Joiner, 2005; Franklin et al., 2011). Although genetic predispositions play a role, acquired capability often develops through repeated exposure to painful events, including NSSI and trauma. Individuals with high AC exhibit higher pain thresholds and a diminished fear of death (Orbach et al., 1996; Dodd et al., 2018). Perceived pain sensitivity is not always consistent with objective physiological measures. Subjective pain ratings are influenced by psychological factors such as mood, anxiety, and psychache (Edwards & Fillingim, 2007). The Discomfort Intolerance Scale (DIS) assesses individuals' perceived ability to tolerate unpleasant physical states (Schmidt et al., 2006). Low discomfort tolerance may lead to a paradoxical increase in suicide risk, as individuals become motivated to escape distress despite lacking prior pain exposure. This reinforces the role of psychological processes in building AC (Pennings & Anestis, 2013).

The Acquired Capability with Rehearsal for Suicide Scale (ACWRSS) measures fearlessness about death, pain tolerance, and mental rehearsal of suicide (George et al., 2016). Dissociation has been shown to mediate the relationship between trauma and suicidal behavior more strongly than depression or

anxiety (Ford & Gómez, 2015). Elevated dissociation correlates with suicide attempts in both clinical and general populations (Maaranen et al., 2005).

THE CURRENT STUDY

This study investigates how dissociation contributes to acquired capability for suicide, particularly through its influence on pain perception and psychological distress. We examine several psychophysiological variables: ACEs, dissociation, psychache, discomfort intolerance, pain catastrophizing, and impulsivity. Previous research has found evidence that suggests high physical pain tolerance is linked with an increased likelihood of suicide attempts. Yet, the psychological correlates of higher tolerance must be extensively researched. Recently, dissociation has gained popularity and is recognized as a possible psychological indicator of increased pain tolerance. The current study aims to add evidence to the preexisting literature of possible underlying psychophysiological mechanisms that may explain the correlation between higher pain tolerance and increased AC. A narrative model of the hypotheses is presented below in Figure 1. There are four principal goals of the current study: (1) to examine the strength of the strength between study variables: The Adverse Childhood Experiences Questionnaire (ACEs); (Felitti et al., 1998), Dissociative Experiences Scale II (DES II); (Carlson & Putnam, 1993), Psychache Scale; (Holden et al., 2001), Impulsive Behavior Scale (UPPSP); (Lynam et al., 2007), Discomfort Intolerance Scale (DIS); (Schmidt et al., 2006), The Pain Catastrophizing Scale (PCS); (Sullivan et al., 1995) and The Acquired Capability with Rehearsal for Suicide Scale (ACWRSS); (George et al., 2016) (2) to determine the factor structure of the study variables; (3) to test the factor structure of the variables with moderate to good correlations; (4) to test the structural model of the study variables and latent constructs and to examine the potential mediating effects.

Using the CFA, we further aimed to evaluate whether variables hypothesized by the literature explain the mechanisms behind dissociation and AC. Given the significant correlations between suicide attempts, Dissociation, and physical pain tolerance, we expect individuals with increased Dissociation to have increased AC (Calati et al., 2017; Orbach, 1994; Orbach et al., 1996; Polskaya & Melnikova, 2020; Şar et al., 2004). The significant correlation may indicate the association eases an individual's decision to harm their body (Orbach, 1994). We expected that Dissociation would uniquely add to the variance in the predictive model. Additionally, we expected that Psychache would also uniquely impact the model. Further, authors, Demirkol et al. (2020) evaluated ACEs and the roles of Dissociation and Psychache in the Turkish population. Results indicated ACEs were significantly linked to previous suicide attempts, and Psychache, and Dissociation significantly mediated the relationship (Demirkol et al., 2020). The relationship between ACEs and suicide attempts may be explained through Psychache and Dissociation. Further, supporting our theory that Dissociation and Psychache mediate the relationship between ACEs and AC and uniquely account for a significant portion of the variance.

Based on findings that pain catastrophizers utilize several coping mechanisms to manage their pain without success, we anticipated PC (i.e., the tendency to hyperfocus on intensity, duration, and negative outcomes of physically painful stimuli), predictive model for AC (Sullivan et al., 1995). Finally, we expected positive and negative urgency would significantly add to the predictive model of AC. Positive Urgency is a type of impulsivity that results in risk taking behaviors that are more likely to lead to dangerous outcomes after experiencing intense positive emotions (Cyders et al., 2007). Negative Urgency is another type of impulsivity characterized by partaking in risky situations significantly likely to lead to bodily harm or dangerous outcomes (Jordan et al., 2019). Findings from a study by Anestis and Joiner, (2011) indicate individuals with low distress tolerance and increased Negative Urgency have increased suicidal ideation.

Hypotheses

1. Dissociation will correlate more strongly with pain catastrophizing than with discomfort intolerance.
2. Exploratory and confirmatory factor analyses will reveal a three-factor structure among dissociation, psychache, PC, impulsivity, and AC.
3. Indirect pathways from ACEs through dissociation and psychache will predict AC.
4. Psychache will mediate the relationship between ACEs, urgency traits, and AC.
5. PC will mediate the relationship between dissociation and AC.

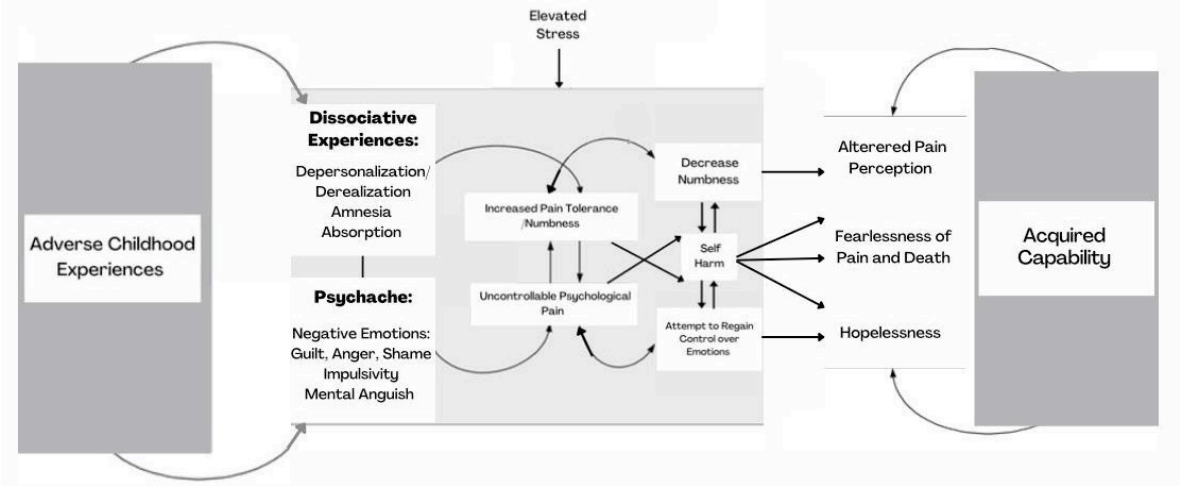

Figure 1. Narrative model of proposed developmental pathways of ACEs, Dissociation, Psychache, Pain Tolerance, and AC; including the behavioral function of self-harm.

Procedures

Participants

After data cleaning, 584 participants were included in the study. The majority the study's participants were female, 77.8%, while 22.4% were male. Ages ranged from 18 to 69, with 47% of participants stating they were 18 years old. Racial/ethnic composition consisted of 21% African American, 70% Caucasian, 4% Hispanic/Latino, 1% Native American, 6% Asian American, .2% Pacific Islander, 2% Multiracial, and 2% stating "other."

Materials

Demographic Questionnaire

Participants completed a brief demographic form including age, gender, race/ethnicity, military service, marital status, and education.

Adverse Childhood Experiences Questionnaire (ACEs)

The ACEs questionnaire (Felitti et al., 1998) assesses exposure to ten categories of childhood trauma, including five forms of personal maltreatment (e.g., physical, verbal, or sexual abuse, and physical/emotional neglect) and five indicators of household dysfunction (e.g., domestic violence,

parental substance use, mental illness, incarceration, and separation/divorce; . Responses are scored dichotomously ("Yes"/"No"), yielding a total score from 0 to 7. Higher scores reflect greater cumulative exposure to early adversity. This scale has been widely used in research linking early trauma to adult health outcomes.

Dissociative Experiences Scale II (DES-II)

The DES-II (Carlson & Putnam, 1993) measures both normative (e.g., daydreaming) and pathological dissociation (e.g., derealization, amnesia, and absorption; . Respondents rate each item from 0% to 100% in 10% increments, indicating how frequently dissociative experiences occur. Subscale and total scores are computed by averaging item responses. Scores ≥30 suggest possible clinical dissociation. The DES-II demonstrates strong internal consistency (α = .95). Participants reporting zero on all items (denial of normative dissociation) will be excluded.

Psychache Scale

This 13-item scale assesses psychological pain as conceptualized by Shneidman (1993), using a 5-point Likert scale (1 = "Never," 5 = "Always"; . Scores range from 13 to 65, with higher values indicating greater psychological distress. Internal reliability is high (α = .94; Holden et al., 2001).

Impulsive Behaviors Scale (UPPS-P)

The UPPS-P (Lynam et al., 2007) includes 59 items measuring five traits related to impulsivity: negative urgency, positive urgency, lack of premeditation, lack of perseverance, and sensation seeking . Items are rated on a 4-point Likert scale (1 = "Agree strongly," 4 = "Disagree strongly").
Each subscale demonstrates acceptable internal reliability: Premeditation (α = .83), Negative Urgency (α = .89), Positive Urgency (α = .94), Sensation Seeking (α = .85), and Perseverance (α = .82) (Cyders, 2013).

Discomfort Intolerance Scale (DIS)

The DIS (Schmidt et al., 2006) consists of seven items assessing physical discomfort intolerance and avoidance . Items are rated on a 7-point Likert scale (0 = "Not at all like me," 6 = "Very much like me"). Subscales demonstrate good reliability: Tolerance (α = .91) and Avoidance (α = .72).

Pain Catastrophizing Scale (PCS)

The PCS (Sullivan et al., 1995) is a 13-item measure of cognitive and emotional responses to pain . Items are rated from 0 ("Not at all") to 4 ("All the time").

It includes three subscales: Rumination (α = .87), Magnification (α = .60), and Helplessness (α = .79). Total scores range from 0 to 52, with higher values indicating greater catastrophizing. Overall reliability is strong (α = .87).

Acquired Capability with Rehearsal for Suicide Scale (ACWRSS)

The ACWRSS (George et al., 2016) evaluates three aspects of acquired capability: fearlessness about death, pain tolerance, and suicide preparation . Items are rated from 0 ("Not at all") to 8 ("Very strongly agree").

The scale demonstrates acceptable psychometrics: Fearlessness (α = .70), Preparation (α = .85), and Pain Tolerance (α = .74). Items were adapted from prior measures and expanded to capture cognitive rehearsal of suicide.

Procedures

Survey data was collected between Fall 2022 and Spring 2023 from a population of The University of South Alabama undergraduate students through the Psychology Department's Subject Pool Database (SONA) Systems. Before participants complete the online questionnaires, informed consent will be obtained via a consent form . After completing the online questionnaires, participants in the study will receive two research course credits. Data collection ended on April 14th, 2023, with a total of 1361 participants. A data validation check was conducted with participants who completed less than 89% of the survey and finished faster than 391 seconds removed to ensure the data is valid and an acceptable effort is put forth. Participants were also excluded from the study if they scored a zero on the DES II.

RESULTS

Correlational Analysis

To evaluate the relationships among adverse childhood experiences, dissociation, pain-related cognitive appraisals, and suicide risk factors, a Pearson correlation matrix was computed for all primary variables (see Table 1). Several significant moderate-to-strong associations emerged. ACEs scores were significantly associated with all dissociation subscales (amnesia, derealization, absorption), psychache, pain catastrophizing components (rumination, magnification, helplessness), and both positive and negative urgency traits. Dissociation variables were in turn significantly related to pain catastrophizing dimensions and urgency measures. Psychache showed particularly strong correlations with both helplessness ($r = .509$, $p < .001$) and magnification ($r = .490$, $p < .001$), supporting its centrality to suicide-related distress. Finally, all PCS subcomponents (rumination, magnification, helplessness) were strongly intercorrelated, and each demonstrated moderate associations with acquired capability for suicide (ACWRSS), further underscoring their potential role in mediating suicidality pathways.

Table 1. Bivariate Correlations and Descriptive Statistics between Study Variables: ACEs, Dissociation, Psychache, Pain Catastrophizing, Urgency Traits, and Suicide Capability

	ACES	PSYCHACHE	DES_AMN	DES_DEREL	DES_ABS	PosUrg	NegUrg	PCS_R	PCS_M	PCS_H	ACWRSS
ACES	—	.378**	.226**	.282**	.263**	.069*	.202**	.210**	.246**	.250**	.222**
PSYCHACHE		—	.267**	.341**	.372**	.189**	.449**	.401**	.490**	.509**	.320**
DES_AMN			—	.852**	.668**	.393**	.291**	.186**	.294**	.305**	.117*
DES_DEREL				—	.670**	.379**	.328**	.207**	.306**	.319**	.152**
DES_ABS					—	.225**	.290**	.337**	.373**	.353**	.297**
PosUrg						—	.618**		.160**	.163**	
NegUrg							—	.212**	.299**	.308**	.218**
PCS_R								—	.763**	.789**	.297**
PCS_M									—	.794**	.330**
PCS_H										—	.298**
ACWRSS											—

Note. Values represent Pearson correlation coefficients between key psychological constructs relevant to the acquired capability for suicide. ACES = Adverse Childhood Experiences Scale (Felitti et al., 1998); PSYCHACHE = Psychache Scale measuring psychological pain (Holden et al., 2001); DES_AMN, DES_DEREL, DES_ABS = Amnesia, Derealization, and Absorption subscales of the Dissociative Experiences Scale II (Carlson & Putnam, 1993); PosUrg, NegUrg = Positive and Negative Urgency subscales from the UPPS-P Impulsivity Scale (Lynam et al., 2007); PCS_R, PCS_M, PCS_H = Rumination, Magnification, and Helplessness subscales of the Pain Catastrophizing Scale (Sullivan et al., 1995); ACWRSS = Acquired Capability with Rehearsal for Suicide Scale (George et al., 2016). *p < .05; ** p < .001.

Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted on data from 584 participants to examine the latent structure underlying key study variables: ACEs, Psychache, Amnesia, Derealization, Absorption, Positive Urgency, Negative Urgency, Pain Catastrophizing (PC), and Acquired Capability (AC). Prior to analysis, data were screened for univariate and multivariate assumptions. All variables met criteria for interval measurement, displayed bivariate normality, and were judged to be independent. The sample size supported robust factor extraction. Sampling adequacy was confirmed via the Kaiser-Meyer-Olkin (KMO) test (KMO = .77), and Bartlett's test of sphericity was significant ($p < .001$), indicating sufficient intercorrelation among items. Principal component analysis with Promax rotation (Kappa = 4) revealed a three-factor solution with Eigenvalues exceeding 1, as visualized in the scree plot (Figure 3). No cross-loadings were observed. Although ACEs and AC demonstrated communalities below .30, both were retained for theoretical completeness.

Confirmatory Factor Analysis

Following the three-factor structure identified through exploratory factor analysis (EFA), a confirmatory factor analysis (CFA) was conducted using IBM AMOS 26 on the full sample (N = 584).

Model fit was evaluated using standard indices: the Comparative Fit Index (CFI = .930), the Standardized Root Mean Square Residual (SRMR = .075), and the Root Mean Square Error of Approximation (RMSEA = .113). These results suggest acceptable overall model fit, with CFI and SRMR values exceeding conventional thresholds (CFI > .90; SRMR < .08; Hooper et al., 2008). However, the RMSEA exceeded the acceptable cutoff of .10, indicating room for model refinement.

Modification indices suggested correlated residuals within the Distress factor, specifically among items for Psychache, PCS, and ACWRSS. These adjustments improved localized fit but did not substantially reduce RMSEA. Attempts to improve model fit by removing ACEs and AC from the Distress construct worsened overall fit (RMSEA = .140), supporting their conceptual relevance despite lower communalities. As illustrated in Figure 3, the CFA model includes three latent constructs: Dissociation: Indexed by DES-II subscales—Amnesia (.91), Derealization (.93), and Absorption (.73)—demonstrated strong convergent validity. Distress: Comprised of ACEs (.47), Psychache (.82), PCS (.59), and ACWRSS (.42), with moderate loadings indicating fair convergent validity. Urgency: Represented by Positive Urgency (.61) and Negative Urgency (1.01), showed moderate to strong convergence. Inter-factor correlations are reported in Table 2. Associations were moderate between Distress and both Dissociation (r = .47) and Urgency (r = .53), while the correlation between Dissociation and Urgency was lower (r = .34), suggesting some conceptual independence between factors.

Table 2. Correlations Among Latent Factors from Confirmatory Factor Analysis

	1. Dissociation	2. Distress	3. Urgency
1.	—	.47	.34
2.		—	.53
3.			—

Note. Factor loadings derived from standardized estimates using principal axis factoring with Promax rotation.

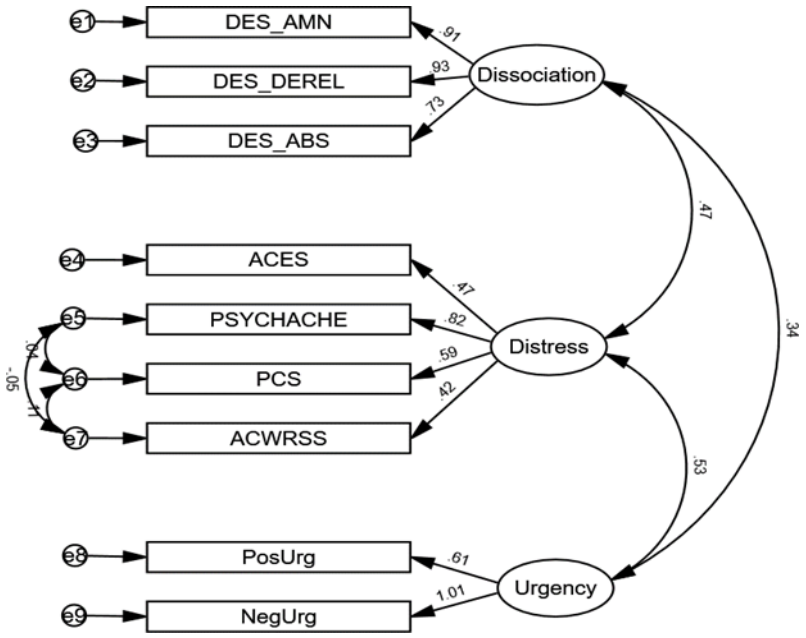

Figure 3. Confirmatory Factor Analysis.

Note. Coefficients are standardized. ACEs (ACES), Psychache (PSYCHACHE), Amnesia (DES_AMN), Derealization (DES_DEREL), Absorption (DES_ABS), Positive Urgency (PosUrg), Negative Urgency (NegUrg) PC (PCS), and AC (ACWRSS)

Structural Equation Modeling

Building upon the three-factor solution confirmed through confirmatory factor analysis (CFA), we developed a series of nine structural equation models (SEMs) to evaluate alternative theoretical configurations of the relationships among dissociation, distress, urgency, and acquired capability for suicide. All SEMs were conducted using IBM AMOS 26 on the full sample (N = 584). The models varied in whether they employed total scale scores or latent constructs composed of subscales—for example, the Dissociative Experiences Scale-II (DES-II) was alternately modeled as a single indicator versus a latent factor comprised of Amnesia, Derealization, and Absorption; similarly, pain catastrophizing was modeled either as a total PCS score or as a latent construct composed of Rumination, Magnification, and Helplessness.

Model specification followed theoretical guidance from the Interpersonal Theory of Suicide and prior empirical associations observed in the correlation matrix. Model fit was evaluated using standard criteria, including CMIN/DF, the Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA), with attention given to CFI values above .95 and SRMR values below .08 as benchmarks of excellent fit (Hooper et al., 2008). Modification indices were reviewed iteratively to improve local model fit, allowing residual covariances between closely related items within the same factor where theoretically justified.

Of the nine SEMs tested, Model 4 yielded the best overall fit. It retained the total DES-II score to represent dissociation and modeled pain catastrophizing as a latent construct using PCS subscales. This configuration demonstrated a CFI of .968, SRMR of .042, and a CMIN/DF of 4.76, all indicative of a well-fitting model. Although the RMSEA of .080 falls just above the ideal threshold for excellent fit, it remained within the acceptable range, and all retained paths were theoretically interpretable. The final model structure is displayed in Figure 4, with standardized coefficients. Pink lines indicate statistically significant paths, while dark blue and light blue paths represent the strongest and second-strongest effects, respectively.

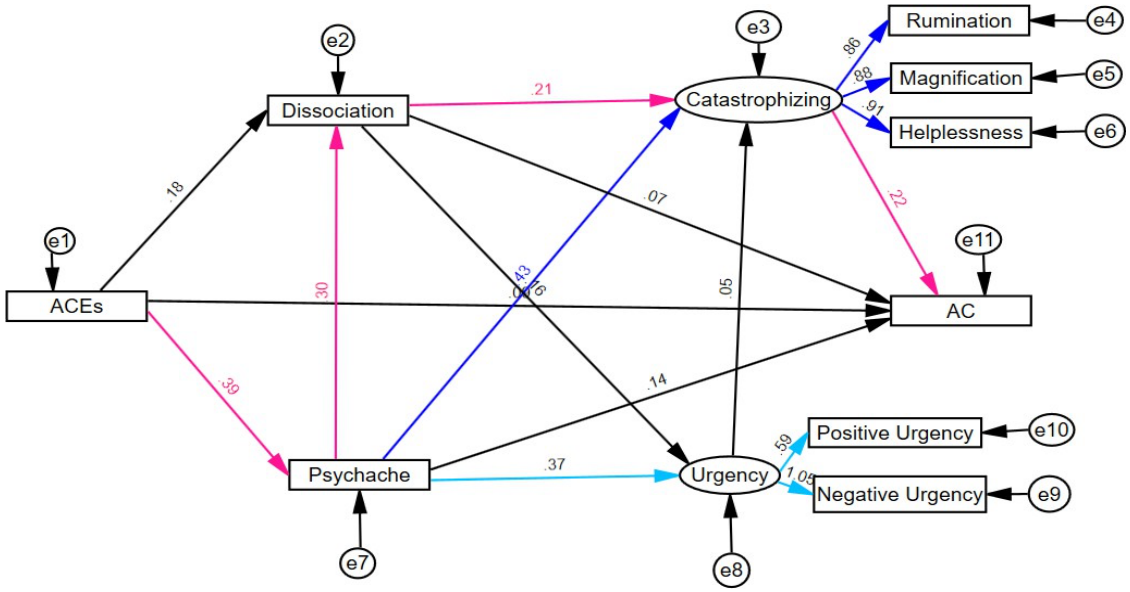

Figure 4. Structural Equation Model 4.

Note. Coefficients are standardized. Pink lines specify the key significant pathway; Dark blue lines represent the pathway accounting for the most variance within the model; Light blue lines represent the pathway accounting for the second most variance within the model.

Direct Effects

Standardized regression paths from Model 4 are reported in Table 4. Consistent with theory, Psychache emerged as the primary driver, predicting Dissociation (β = .30), Urgency (β = .37), Catastrophizing (β = .43), and AC (β = .14). ACEs retained modest direct effects on Psychache (β = .39) and Dissociation (β = .18), while Catastrophizing exerted a unique direct influence on AC (β = .22). The Urgency → Catastrophizing path was non-significant and was trimmed from follow-up mediation tests.

Table 4. Key Standardized Direct Paths (Model 4)

Predictor → Outcome	**β**	**p**
ACES → Psychache	.39	< .001
ACES → Dissociation	.18	< .001
ACES → AC	.09	.036
Psychache → Dissociation	.30	< .001
Psychache → Urgency	.37	< .001
Psychache→ Catastrophizing	.43	< .001
Psychache → AC	.14	.003
Dissociation → Urgency	.16	< .001
Dissociation→ Catastrophizing	.21	< .001
Catastrophizing → AC	.22	< .001

Note: Abbreviations: **ACES** = Adverse Childhood Experiences; **AC** = Acquired Capability (ACWRSS).

Mediation and Specific Indirect Effects

Bootstrapped (5 000 samples) indirect paths with bias-corrected 95 % CIs are summarized in Table 5. Psychache was the dominant mediator, fully or partially transmitting ACES effects to Dissociation and AC and cascading through Urgency and Catastrophizing to specific PCS sub-components.

Table 5. Significant Indirect Paths (Standardized Estimates)

Indirect Path	**β**	**p**	**Mediation Type**
ACES → Psychache → AC	.25	.005	Partial
ACES → Psychache → Dissociation	.87	< .001	Partial
Dissociation → Catastrophizing → AC	.03	.006	Full
Psychache → Catastrophizing → AC	.09	< .001	Partial
Psychache →Urgency → Positive Urgency	.22	< .001	Full
Psychache→Urgency→ Negative Urgency	.39	< .001	Full
Psychache→Catastrophizing→Helplessness	.40	< .001	Full
Psychache→Catastrophizing→Magnification	.38	< .001	Full
Psychache → Catastrophizing → Rumination	.37	< .001	Full

Interpretation

Model 4 clarifies a cascading risk sequence: early adversity (ACES) increases psychological pain (Psychache), which in turn heightens dissociative tendencies, urgency-based impulsivity, and catastrophic pain cognitions. Catastrophizing—especially the Helplessness facet—emerges as the final link to higher acquired capability for suicide. Direct ACE → AC effects persist but are modest once mediators are included, underscoring Psychache's central role in translating childhood adversity into lethal self-harm risk.

Together, these findings integrate the interpersonal theory's acquired capability construct with dissociative and pain-catastrophizing processes, suggesting that interventions targeting psychological pain and maladaptive pain cognitions may disrupt the pathway from early adversity to suicidal behavior.

DISCUSSION

The Interpersonal Theory of Suicide (IPTS) posits that an individual must possess both the desire and the acquired capability (AC)—defined as fearlessness about death and elevated pain tolerance—to engage in lethal self-harm (Joiner, 2005; Van Orden et al., 2010). This theory provides a framework for understanding the substantial gap between rates of suicidal ideation and suicide completion. While IPTS has received empirical support, relatively few studies have investigated the psychophysiological mechanisms that may underlie AC. The present study sought to address this gap by examining how adverse childhood experiences (ACEs), Psychache, Dissociation, Pain Catastrophizing (PC), and urgency traits contribute to AC. Our findings offer preliminary support for the hypothesized mediating pathways and highlight underlying psychological processes that may amplify risk.

The first goal was to examine associations between Dissociation and Discomfort Intolerance. Although we hypothesized strong correlations between subscales of the Dissociative Experiences Scale (DES-II) and the Discomfort Intolerance Scale (DIS), the data revealed only weak correlations ($r = .094$ to $r = .252$; see Table 1), failing to support Hypothesis 1. This suggests that Dissociation may not reduce intolerance for discomfort as theorized, or that the DIS may lack sensitivity to the constructs of interest.

Hypothesis 1a, however, was supported: Dissociation correlated more strongly with subscales of the Pain Catastrophizing Scale (PCS), with values ranging from $r = .186$ to $r = .337$ (see Tables 2 and 3). This implies that dissociative tendencies may relate more closely to maladaptive cognitive-emotional responses to pain than to physical discomfort per se. To clarify latent structure among constructs, we conducted exploratory and confirmatory factor analyses (EFA and CFA). Both analyses supported a three-factor model composed of Dissociation, Distress, and Urgency (see Figure 3 and Table 4). These factors replicate the classic three-component model of the DES-II—Absorption, Amnesia, and Derealization—as observed in prior research (e.g., Bernstein & Putnam, 1986; Carlson & Putnam, 1993).

The “Distress” factor emerged as particularly salient, comprising ACEs, Psychache, PC, and AC. This pattern is consistent with prior research showing that ACEs and Psychache predict suicidal behavior (Demirkol et al., 2020) and suggests that these constructs may load onto a common vulnerability domain. Furthermore, this aligns with literature linking early adversity to increased cognitive-emotional reactivity to pain, as indexed by PC (Tidmarsh et al., 2022; Zlotnick et al., 2022). The third factor, “Urgency,” combined Positive and Negative Urgency and was consistent with conceptualizations of emotion-driven impulsivity leading to maladaptive behaviors under intense affect (Cyders et al., 2007; Anestis & Joiner, 2011).

Our fourth objective involved modeling structural relationships among these constructs to predict AC. Nine structural equation models were evaluated, and Model 4 (see Figure 4) demonstrated the best fit, with AC as the outcome variable. This model supported several key mediation pathways.

Hypothesis 3a proposed that the relationship between ACEs and AC would be mediated by both Psychache and Dissociation. While the indirect path through Psychache was significant ($B = 0.055$, $p = .007$), the path through Dissociation was not, offering only partial support for this hypothesis. However, Catastrophizing was found to fully mediate the relationship between Dissociation and AC, confirming Hypothesis 5. These findings suggest a serial mediation pathway in which ACEs increase Psychache, which in turn elevates Dissociation, ultimately leading to higher levels of PC and, consequently, AC.

These results partially replicate findings from Demirkol et al. (2020), who identified Psychache and Dissociation as mediators between ACEs and suicide attempts. Our extension of that model to include PC provides a more granular understanding of cognitive-affective amplification processes underlying AC. Hypothesis 3b, which proposed that Psychache would exert an indirect effect on AC through both

Dissociation and PC, was supported ($B = 0.063$, $p < .001$). This highlights the centrality of maladaptive pain-related cognitions in the pathway from emotional pain to suicidality.

In contrast, Hypothesis 3c was not supported: indirect effects of Psychache through Positive and Negative Urgency and PC were not significant in predicting AC. However, one pathway stood out—Psychache → Catastrophizing → AC (highlighted in dark blue in Figure 4)—and accounted for the largest share of variance in the model. This finding aligns with prior literature on pain catastrophizing, which suggests that individuals high in PC tend to ruminate on the aversive consequences of pain, thereby intensifying perceived suffering (Sullivan et al., 1995).

Hypothesis 4 was also supported. Psychache significantly mediated the relationship between ACEs and both Positive and Negative Urgency ($B = 0.145$, $p < .001$), with these paths accounting for the second-largest variance component in the model (see Figure 4, light blue). These findings indicate that trait-level urgency, particularly Negative Urgency, may serve as an amplifier of suicide risk, potentially by facilitating impulsive responses to Psychache. Previous research has similarly suggested that urgency is a stable personality trait associated with self-harming behaviors and suicidality (Whiteside & Lynam, 2001; Anestis & Joiner, 2011).

Finally, Hypothesis 5, concerning the mediating role of PC in the relationship between Dissociation and AC, was confirmed. These findings support the interpretation that individuals who experience dissociation may resort to maladaptive cognitive coping strategies such as catastrophizing, which in turn exacerbate their vulnerability to suicidality by intensifying Psychache (Sullivan et al., 1995).

CLINICAL IMPLICATIONS

These findings, while informative, should be interpreted with caution given the nonclinical, undergraduate sample. Future studies should test these relationships in clinical populations to better assess the translational relevance of the model. One key implication involves the pathway from ACEs through Psychache, Dissociation, and Pain Catastrophizing (PC) to Acquired Capability (AC). This suggests that individuals with dissociative tendencies may exhibit heightened internal self-focus and cognitive intrusions rooted in early trauma.

Clinically, this underscores the importance of assessing trauma histories and dissociative symptoms in individuals exhibiting suicidal ideation or behavior. The metacognitive model of Wells (2000) offers a promising intervention strategy, targeting maladaptive attentional control and ruminative thought patterns. Metacognitive Therapy may be especially useful in addressing the rumination and magnification dimensions of PC, thereby alleviating Psychache and reducing suicide risk (Ródenas-Perea et al., 2023). Interventions can focus either on the process of rumination—by increasing present-focused awareness and disengagement from repetitive thoughts—or on the cognitive content, using cognitive-behavioral techniques to reframe emotions such as anger, guilt, and shame.

Additionally, the strong associations observed between ACEs, Psychache, and Dissociation suggest a need for trauma-informed therapeutic approaches. Mindfulness-based therapies have demonstrated efficacy in reducing dissociative symptoms (Zerubavel & Messman-Moore, 2015). Empirically supported treatments such as Acceptance and Commitment Therapy (Baslet & Hill, 2011), Dialectical Behavior Therapy (Koons et al., 2001), and Sensorimotor Psychotherapy (Langmuir et al., 2012) may be particularly suited for individuals with trauma-related dissociation. Recognizing and targeting these interlocking constructs may help reduce suicide risk and inform tailored interventions for high-risk populations.

LIMITATIONS

The sample was demographically narrow—primarily Caucasian, female, and traditional-aged undergraduates from a single institution—limiting generalizability to clinical or more diverse populations. The study's cross-sectional design also precludes any inference of temporal or causal relationships. Conducting both the exploratory and confirmatory factor analyses on the same dataset may have artificially inflated model fit indices (Anderson & Gerbing, 1988), thereby limiting the reliability and replicability of the three-factor structure. Finally, reliance on self-report measures introduces common method biases. Participants may have misrepresented or struggled to accurately report sensitive experiences, particularly dissociative symptoms. Prior research suggests that self-reported dissociation is highly susceptible to mood state and psychological distress at the time of reporting (Marshall & Schell, 2002).

CONCLUSION

This study aimed to elucidate the psychophysiological mechanisms contributing to acquired capability for suicide. Contrary to our hypotheses, Dissociation alone did not significantly account for variance in AC. However, PC emerged as a critical mediator, particularly in the pathways connecting Dissociation and Psychache to AC. The most robust effects were observed in the indirect paths from Psychache through PC and Urgency, highlighting the role of maladaptive cognitive-emotional processes in suicide risk.

Although preliminary, these findings contribute to a nuanced understanding of how early trauma, emotional pain, and cognitive-affective dysregulation intersect to amplify suicide risk. Future research should adopt longitudinal and multi-method designs—including experimental and qualitative approaches—to clarify the dynamic interplay among ACEs, Psychache, Dissociation, and PC in the development of AC.

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WORKS CITED

American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition). American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin, 103, 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Anestis, M. D., & Joiner, T. E. (2011). Examining the role of emotion in suicidality: Negative urgency as an amplifier of the relationship between components of the interpersonal–psychological theory of suicidal behavior and lifetime number of suicide attempts. Journal of Affective Disorders, 129(1), 261–269. https://doi.org/10.1016/j.jad.2010.08.006

Baslet, G., & Hill, J. (2011). Case Report: Brief Mindfulness-Based Psychotherapeutic Intervention During Inpatient Hospitalization in a Patient With Conversion and Dissociation. Clinical Case Studies, 10(2), 95–109. https://doi.org/10.1177/1534650110396359

Baumeister, R. F. (1990). Suicide as Escape From Self. 24. https://doi.org/10.1037/0033-295X.97.1.90

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The Scale for Suicide Ideation. Journal of Consulting and Clinical Psychology, 47(2), 343–352. https://doi.org/10.1037/0022-006X.47.2.343

Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. The Journal of Nervous and Mental Disease, 174(12), 727– 735. https://doi.org/10.1097/00005053-198612000-00004

Birrell, P., & Freyd, J. (2006). Betrayal Trauma: Relational Models of Harm and Healing. Journal of Trauma Practice, 5. https://doi.org/10.1300/J189v05n01_04

Butler, L. (2006). Normative Dissociation. The Psychiatric Clinics of North America, 29, 45–62, viii. https://doi.org/10.1016/j.psc.2005.10.004

Calati, R., Bensassi, I., & Courtet, P. (2017). The link between dissociation and both suicide attempts and non-suicidal self-injury: Meta-analyses. Psychiatry Research, 251, 103–114. https://doi.org/10.1016/j.psychres.2017.01.035

Carlson, E. B., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. Dissociation: Progress in the Dissociative Disorders, 6(1), 16–27.

Centers for Disease Control and Prevention. (2021). Suicide Prevention: Facts About Suicide. U.S. Department of Health and Human Services. https://www.cdc.gov/suicide/facts/index.html

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

Cyders, M. A. (2013). Impulsivity and the Sexes: Measurement and Structural Invariance of the UPPS-P Impulsive Behavior Scale. Assessment, 20(1), 86–97. https://doi.org/10.1177/1073191111428762

Cyders, M. A., Smith, G. T., Spillane, N. S., Fischer, S., Annus, A. M., & Peterson, C. (2007). Integration of impulsivity and positive mood to predict risky behavior: Development and validation of a measure of positive urgency. Psychological Assessment, 19(1), 107–118. https://doi.org/10.1037/1040-3590.19.1.107

Dalenberg, C. J., Gleaves, D. H., Dorahy, M. J., Cardeña, E., Carlson, E. B., Brand, B. L., Loewenstein, R. J., Frewen, P. A., & Spiegel, D. (2012). Evaluation of the Evidence for the Trauma and Fantasy Models of Dissociation. Psychological Bulletin, 138(3), 550–588. https://doi.org/10.1037/a0027447

Deming, C. E. (2020). The Effects of acute stress on damage associated molecular pattern levels and heart rate variability [Unpublished master's thesis]. University of South Alabama.

Demirkol, M. E., Uğur, K., & Tamam, L. (2020). The mediating effects of psychache and dissociation in the relationship between childhood trauma and suicide attempts. Anatolian Journal of Psychiatry, 21(5), 453–460. https://doi.org/10.5455/apd.82990

Dodd, D. R., Smith, A. R., Forrest, L. N., Witte, T. K., Bodell, L., Bartlett, M., Siegfried, N., & Goodwin, N. (2018). Interoceptive Deficits, Nonsuicidal Self-Injury, and Suicide Attempts Among Women with Eating Disorders. Suicide and Life- Threatening Behavior, 48(4), 438–448. https://doi.org/10.1111/sltb.12383

Edmondson, A. J., Brennan, C. A., & House, A. O. (2016). Non-suicidal reasons for self- harm: A systematic review of self-reported accounts. Journal of Affective Disorders, 191, 109–117. https://doi.org/10.1016/j.jad.2015.11.043

Edwards, R. R., & Fillingim, R. B. (2007). Self-reported pain sensitivity: Lack of correlation with pain threshold and tolerance. European Journal of Pain, 11(5), 594–598. https://doi.org/10.1016/j.ejpain.2006.09.008

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine, 14(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Ford, J. D., & Gómez, J. M. (2015). The relationship of psychological trauma and dissociative and posttraumatic stress disorders to nonsuicidal self-injury and suicidality: A review. Journal of Trauma & Dissociation: The Official Journal of the International Society for the Study of Dissociation (ISSD), 16(3), 232–271. https://doi.org/10.1080/15299732.2015.989563

Franklin, J. C., Hessel, E. T., & Prinstein, M. J. (2011). Clarifying the role of pain tolerance in suicidal capability. Psychiatry Research, 189(3), 362–367. https://doi.org/10.1016/j.psychres.2011.08.001

Franzke, I., Wabnitz, P., & Catani, C. (2015). Dissociation as a mediator of the relationship between childhood trauma and nonsuicidal self-injury in females: A path analytic approach. Journal of Trauma & Dissociation: The Official Journal of the International Society for the Study of Dissociation (ISSD), 16(3), 286–302. https://doi.org/10.1080/15299732.2015.989646

Garnett, M., Curtin, S., & Stone, D. (2022). Suicide Mortality in the United States, 2000– 2020. National Center for Health Statistics (U.S.). https://doi.org/10.15620/cdc:114217

George, S., Page, A., Hooke, G., & Stritzke, W. (2016). Multifacet Assessment of Capability for Suicide: Development and Prospective Validation of the Acquired Capability With Rehearsal for Suicide Scale. Psychological Assessment, 28. https://doi.org/10.1037/pas0000276

Gunzler, D., Chen, T., Wu, P., & Zhang, H. (2013). Introduction to mediation analysis with structural equation modeling. Shanghai Archives of Psychiatry, 25(6), 390–394. https://doi.org/10.3969/j.issn.1002-0829.2013.06.009

Hart, O. V. D., Nijenhuis, E., Steele, K., & Brown, D. (2004). Trauma-Related Dissociation: Conceptual Clarity Lost and Found.

Heyneman, N. E., Fremouw, W. J., Gano, D., Kirkland, F., & Heiden, L. (1990). Individual differences and the effectiveness of different coping strategies for pain. Cognitive Therapy and Research, 14(1), 63–77. https://doi.org/10.1007/BF01173525

Holden, R. R., Mehta, K., Cunningham, E. J., & McLeod, L. D. (2001). Development and preliminary validation of a scale of psychache. Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement, 33(4), 224–232. https://doi.org/10.1037/h0087144

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. https://doi.org/10.21427/D7CF7R

Jensen, M. P., Turner, J. A., Romano, J. M., & Karoly, P. (1991). Coping with chronic pain: A critical review of the literature. Pain, 47(3), 249–283. https://doi.org/10.1016/0304-3959(91)90216-K

Joiner, T. (2005). Why people die by suicide (1. Harvard Univ. Pr. paperback ed). Harvard Univ. Press.

Jordan, J. T., Samuelson, K. W., & Tiet, Q. Q. (2019). Impulsivity, Painful and Provocative Events, and Suicide Intent: Testing the Interpersonal Theory of Suicide. Suicide and Life-Threatening Behavior, 49(4), 1187–1195. https://doi.org/10.1111/sltb.12518

Klonsky, E. D., & May, A. (2015). The Three-Step Theory (3ST): A New Theory of Suicide Rooted in the " Ideation-to-Action " Framework. International Journal of Cognitive Therapy, 8, 114–129. https://doi.org/10.1521/ijct.2015.8.2.114

Koons, C. R., Robins, C. J., Lindsey Tweed, J., Lynch, T. R., Gonzalez, A. M., Morse, J. Q., Bishop, G. K., Butterfield, M. I., & Bastian, L. A. (2001). Efficacy of dialectical behavior therapy in women veterans with borderline personality disorder. Behavior Therapy, 32(2), 371–390. https://doi.org/10.1016/S0005-7894(01)80009-5

Langmuir, J. I., Kirsh, S. G., & Classen, C. C. (2012). A pilot study of body-oriented group psychotherapy: Adapting sensorimotor psychotherapy for the group treatment of trauma. Psychological Trauma: Theory, Research, Practice, and Policy, 4(2), 214–220. https://doi.org/10.1037/a0025588

Lynam, D., Smith, G. T., Cyders, M. A., Fischer, S., & Whiteside, S. A. (2007). The UPPS-P: A multidimensional measure of risk for impulsive behavior. Unpublished Technical Report.

Maaranen, P., Tanskanen, A., Haatainen, K., Honkalampi, K., Koivumaa-Honkanen, H., Hintikka, J., & Viinamäki, H. (2005). The Relationship Between Psychological and Somatoform Dissociation in the General Population. The Journal of Nervous and Mental Disease, 193(10), 690–692. https://doi.org/10.1097/01.nmd.0000181353.69821.44

Maaranen, P., Tanskanen, A., Honkalampi, K., Haatainen, K., Hintikka, J., & Viinamäki, H. (2005). Factors Associated with Pathological Dissociation in the General Population. Australian & New Zealand Journal of Psychiatry, 39(5), 387–394. https://doi.org/10.1080/j.1440-1614.2005.01586.x

Main, M., & Heese, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? The University of Chicago Press., 161–182.

Marshall, G. N., & Schell, T. L. (2002). Reappraising the link between peritraumatic dissociation and PTSD symptom severity: Evidence from a longitudinal study of community violence survivors. Journal of Abnormal Psychology, 111(4), 626– 636. https://doi.org/10.1037//0021-843x.111.4.626

Nijenhuis, E. R. S. (1999). Somatoform Dissociation: Phenomena, Measurement, and Theoretical Issues. American Journal of Clinical Hypnosis, 45(1), 60–62. https://doi.org/10.1080/00029157.2002.10403500

Nijenhuis, E. R. S., & van der Hart, O. (2011). Dissociation in Trauma: A New Definition and Comparison with Previous Formulations. Journal of Trauma & Dissociation, 12(4), 416–445. https://doi.org/10.1080/15299732.2011.570592

Nock, M. K., & Pnnstein, M. J. (2004). A Functional Approach to the Assessment of Self-Mutilative Behavior. Journal of Consulting & Clinical Psychology, 72(5), 885– 890. https://doi.org/10.1037/0022-006X.72.5.885

O'Connor, R. C., & Kirtley, O. J. (2018). The integrated motivational-volitional model of suicidal behaviour. Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 373(1754), 20170268. https://doi.org/10.1098/rstb.2017.0268

Orbach, I. (1994). Dissociation, physical pain, and suicide: A hypothesis. Suicide & Life-Threatening Behavior, 24(1), 68–79.

Orbach, I., Kedem, P., Herman, L., & Apter, A. (1995). Dissociative Tendencies in Suicidal, Depressed, and Normal Adolescents. Journal of Social and Clinical Psychology, 14(4), 393–408.

Orbach, I., Stein, D., Palgi, Y., Asherov, J., Har-Even, D., & Elizur, A. (1996). Perception of physical pain in accident and suicide attempt patients: Self-preservation vs self-destruction. Journal of Psychiatric Research, 30(4), 307–320. https://doi.org/10.1016/0022-3956(96)00008-8

Pennings, S. M., & Anestis, M. D. (2013). Discomfort Intolerance and the Acquired Capability for Suicide. Cognitive Therapy and Research, 37(6), 1269–1275. https://doi.org/10.1007/s10608-013-9548-x

Polskaya, N., & Melnikova, M. (2020). Dissociation, Trauma and Self-Harm. Counseling Psychology and Psychotherapy, 28, 25–48. https://doi.org/10.17759/cpp.2020280103

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior Research Methods, Instruments, & Computers, 36(4), 717–731. https://doi.org/10.3758/BF03206553

Ribeiro, J. D., Franklin, J. C., Fox, K. R., Bentley, K. H., Kleiman, E. M., Chang, B. P., & Nock, M. K. (2016). Self-injurious thoughts and behaviors as risk factors for future suicide ideation, attempts, and death: A meta-analysis of longitudinal studies. Psychological Medicine, 46(2), 225–236. https://doi.org/10.1017/S0033291715001804

Ródenas-Perea, G., Velasco-Barbancho, E., Perona-Garcelán, S., Rodríguez-Testal, J. F., Senín-Calderón, C., Crespo-Facorro, B., & Ruiz-Veguilla, M. (2023). Childhood and adolescent trauma and dissociation: The mediating role of rumination, intrusive thoughts and negative affect. Scandinavian Journal of Psychology, 64(2), 142–149. https://doi.org/10.1111/sjop.12879

Rogers, M. L., Gallyer, A. J., Dougherty, S. P., Gorday, J. Y., Nelson, J. A., Teasdale, O. D., & Joiner, T. E. (2021). Are all pain tolerance tasks the same? Convergent validity of four behavioral pain tolerance tasks, self-reported capability for suicide, and lifetime self-injurious behaviors. Journal of Clinical Psychology, 77(12), 2929–2942. https://doi.org/10.1002/jclp.23283

Ross, C. A., Joshi, S., & Currie, R. (1991). Dissociative experiences in the general population: A factor analysis. Hospital & Community Psychiatry, 42(3), 297–301. https://doi.org/10.1176/ps.42.3.297

Rossom, R. C., Coleman, K. J., Ahmedani, B. K., Beck, A., Johnson, E., Oliver, M., & Simon, G. E. (2017). Suicidal ideation reported on the PHQ9 and risk of suicidal behavior across

age groups. Journal of Affective Disorders, 215, 77–84. https://doi.org/10.1016/j.jad.2017.03.037

Şar, V., Akyüz, G., Kundakçı, T., Kızıltan, E., & Doğan, O. (2004). Childhood Trauma, Dissociation, and Psychiatric Comorbidity in Patients With Conversion Disorder. American Journal of Psychiatry, 161(12), 2271–2276. https://doi.org/10.1176/ajp.161.12.2271

Schauer, M., & Elbert, T. (2010). Dissociation Following Traumatic Stress: Etiology and Treatment. Zeitschrift Für Psychologie / Journal of Psychology, 218(2), 109–127. https://doi.org/10.1027/0044-3409/a000018

Schmidt, N. B., Richey, J. A., & Fitzpatrick, K. K. (2006). Discomfort intolerance: Development of a construct and measure relevant to panic disorder. Journal of Anxiety Disorders, 20(3), 263–280. https://doi.org/10.1016/j.janxdis.2005.02.002

Shneidman, E. S. (1993). Suicide as psychache: A clinical approach to self-destructive behavior. Aronson.

Soffer-Dudek, N. (2019). Dissociative absorption, mind-wandering, and attention-deficit symptoms: Associations with obsessive-compulsive symptoms. British Journal of Clinical Psychology, 58(1), 51–69. https://doi.org/10.1111/bjc.12186

Soffer-Dudek, N., Todder, D., Shelef, L., Deutsch, I., & Gordon, S. (2019). A neural correlate for common trait dissociation: Decreased EEG connectivity is related to dissociative absorption. Journal of Personality, 87(2), 295. https://doi.org/10.1111/jopy.12391

Spanos, N. P., Radtke-Bodorik, H. L., Ferguson, J. D., & Jones, B. (1979). The effects of hypnotic susceptibility, suggestions for analgesia, and the utilization of cognitive strategies on the reduction of pain. Journal of Abnormal Psychology, 88(3), 282–292. https://doi.org/10.1037//0021-843x.88.3.282

Steinberg, M. (1995). Handbook for the assessment of dissociation: A clinical guide (1. ed). American Psychiatric Press.

Sullivan, M. J. L., Bishop, S. R., & Pivik, J. (1995). The Pain Catastrophizing Scale: Development and validation. Psychological Assessment, 7(4), 524–532. https://doi.org/10.1037/1040-3590.7.4.524

Tidmarsh, L. V., Harrison, R., Ravindran, D., Matthews, S. L., & Finlay, K. A. (2022). The Influence of Adverse Childhood Experiences in Pain Management: Mechanisms, Processes, and Trauma-Informed Care. Frontiers in Pain Research,3. https://www.frontiersin.org/articles/10.3389/fpain.2022.923866

Turk, D. C., & Rudy, T. E. (1992). Cognitive factors and persistent pain: A glimpse into pandora's box. Cognitive Therapy and Research, 16(2), 99–122. https://doi.org/10.1007/BF01173484

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner Jr, T. E. (2010). The interpersonal theory of suicide. Psychological Review, 117(2), 575.

Wells, A. (2000). Emotional disorders and metacognition: Innovative cognitive therapy. Journal of Psychiatric and Mental Health Nursing, 9(2). https://www.academia.edu/55371902/Emotional_disorders_and_metacognition_Innovative_cognitive_therapy

Wenzel, A., Berchick, E. R., Tenhave, T., Halberstadt, S., Brown, G. K., & Beck, A. T. (2011). Predictors of suicide relative to other deaths in patients with suicide attempts and suicide ideation: A 30-year prospective study. Journal of Affective Disorders, 132(3), 375–382. https://doi.org/10.1016/j.jad.2011.03.006

Whiteside, S. P., & Lynam, D. R. (2001). The Five Factor Model and impulsivity: Using a structural model of personality to understand impulsivity. Personality and Individual Differences, 30(4), 669–689. https://doi.org/10.1016/S0191-8869(00)00064-7

Witte, T. K., Gordon, K. H., Smith, P. N., & Van Orden, K. A. (2012). Stoicism and sensation seeking: Male vulnerabilities for the acquired capability for suicide. Journal of Research in Personality, 46(4), 384–392. https://doi.org/10.1016/j.jrp.2012.03.004

Zerubavel, N., & Messman-Moore, T. L. (2015). Staying Present: Incorporating Mindfulness into Therapy for Dissociation. Mindfulness, 6(2), 303–314. https://doi.org/10.1007/s12671-013-0261-3

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. Journal of Consumer Research, 37(2), 197–206. https://doi.org/10.1086/651257

Zlotnick, C., Grouper, H., & Pud, D. (2022). Child Abuse and the Psychological Dispositions of Pain Catastrophising, Resilience and Hope. Child Abuse Review, 31(1), 66–77. https://doi.org/10.1002/car.2719