Emotion dysregulation and acquired capability for suicide: A correlational analysis

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BACKGROUND

Pain tolerance increases can elevate acquired capability for lethal or near-lethal self-harm (van Orden et al., 2010)

Emotion dysregulation may be a buffer to the acquired capability for suicide (Law et al., 2015)
- Difficulties regulating emotion predict lower self-reported capability for suicidal behavior (Heffer & Willoughby, 2018).

Low baseline respiratory sinus arrythmia (RSA) and excessive RSA withdrawal are associated with difficulties regulating emotion (Beauchaine, 2015)
- Lower baseline RSA is observed among female attempters and parasuicidal adolescents compared to non-suicidal controls (Crowell et al., 2005; Tsypes et al., 2018).
- Parasuicidal adolescents exhibit greater withdrawal RSA (Crowell et al., 2005)

AIMS

Examine the association between emotion dysregulation and acquired capability using self-report, behavioral, and physiological measures

METHODS

Undergraduate student sample recruited through SONA systems (n = 40, M_{Age}= 20.45, SD = 3.49, 75% Female, 63% White)

Self-Report Measure:
- Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer, 2004)

Behavioral Measures:
- Pain Tolerance, Persistence, & Threshold: Cold Pressor Task (CPT; Gratz et al., 2011)

Psychophysiological Measures:
- Extracted RSA values in 30s epochs from ECG and RSP data from a 5-min resting baseline and an individual CPT
  - Calculated the average of the last 60s of baseline (Baseline RSA) and the last 30-60s of the CPT (Withdrawal RSA), depending on individual CPT duration
- Biopac MP150 and Acqknowledge (v. 5.0.1)

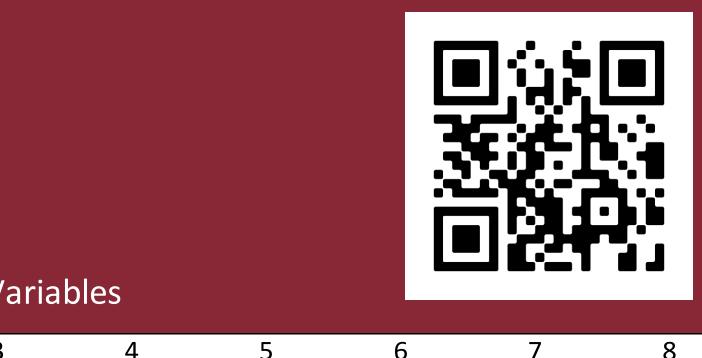Correlation Analysis[1] using Rstudio (v. 2022.07.0)

[1]Canonical correlation results were nonsignificant (p > .05)

Baseline respiratory sinus arrhythmia was significantly associated with greater pain persistence

Table 1. Bivariate Correlations of All Variables

Variable	1	2	3	4	5	6	7	8
1. Age	--							
2. Gender	-.126	--						
3. DERS	-.031	.209	--					
4. Baseline RSA	-.258	-.244	.016	--				
5. Withdrawal RSA	.183	.196	.025	-.585***	--			
6. Pain Tolerance	-.304	-.382*	.048	.230	-.018	--		
7. Pain Persistence	-.249	-.491**	.046	.352*	-.183	.864***	--	
8. Pain Threshold	-.244	-.065	.028	-.036	.211	.738***	.298	--

Note. DERS = difficulties with emotion regulation. RSA = respiratory sinus arrhythmia.
*p < .05, **p < .01, ***p < .001

RESULTS
- Female gender was significantly associated with lower pain tolerance (r = -0.38, p = .015) and pain persistence (r = -0.49, p = .001)
- Baseline RSA was significantly associated with lower RSA withdrawal (r = -0.59, p < .001) and greater pain persistence (r = 0.35, p = .026)
- Pain tolerance was significantly associated with greater pain persistence (r = 0.86, p < .001) and pain threshold (r = 0.74, p < .001)
- DERS scores were not significantly associated with any focal variables

DISCUSSION
- Objective measures of emotion dysregulation may provide further clarity, above and beyond a self-report measure, in assessing the ability to persist through painful experiences
- As expected, an individual's ability to regulate themselves at rest is associated with greater persistence through a painful experience
  - Pain persistence should also be considered as a notable indicator of acquired capability for suicide (Law et al., 2017)

LIMITATIONS
- Lack of sufficient power to detect effects due to small sample size
- Participants may have had low motivation to complete the cold pressor task, thereby impacting accurate measurements of pain tolerance, pain persistence, and pain threshold

FUTURE DIRECTIONS
- Explore the impact of an emotion induction task on ability to persist through a cold pressor task

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