

Rumination following a potentially traumatic experience may be due to impaired executive functioning.

Poorer Set Shifting Ability Prospectively Predicts Trauma-Related Rumination among Individuals Exposed to Hurricane Irma

INTRODUCTION

- Executive functions are high-level cognitive processes that guide goal-oriented behaviors
- Rumination has been theoretically and empirically linked with specific impairments in executive functioning, including difficulty switching between task sets (i.e., set shifting ability)
- However, most previous research has been limited by the use of cross-sectional designs and no studies have examined the association between executive functioning and rumination following a potentially traumatic experience

METHODS

1. $N = 64$ undergraduate students
2. Completed 2 study visits within 3 months of Hurricane Irma in the Fall of 2016
3. Within first month after the hurricane, participants completed a color-shape switch task (Time 1)
4. Approximately two months later, they completed measures of hurricane-related rumination and posttraumatic stress symptoms (Time 2)

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RESULTS

Table 1. Unique associations between Time 1 set shifting ability and Time 2 posttraumatic stress symptoms and rumination.

	B	SE	β	t	p	r_{sp}
PC-PTSD-5	-5.01	11.54	-.06	-.44	.67	-.05
RIQ	7.83	3.37	.33	2.32	.02	.28

Note. The color-shape switch task was used to assess set shifting ability at Time 1; the PC-PTSD-5 was used to assess posttraumatic stress symptoms at Time 2; the RIQ was used to assess rumination at Time 2. Both the PC-PTSD-5 and the RIQ were anchored to Hurricane Irma.

DISCUSSION

- As hypothesized, poorer set shifting ability at Time 1 was associated with greater hurricane-related rumination at Time 2
- The prospective nature of the study provides further evidence that impaired executive functioning may underlie rumination
- Because the study only examined set shifting ability, future research will need to examine whether other executive functions prospectively predict rumination

Additional Information:

Rumination = A cognitive style characterized by frequent and habitual negative thoughts about oneself, one's symptoms, and/or previous life experiences

Measures

- Rumination = Rumination subscale of *Responses to Intrusions Questionnaire* (RIQ)
- Posttraumatic Stress Symptoms = *Primary Care Posttraumatic Stress Disorder Checklist for DSM-5* (PC-PTSD-5)

Color-Shape Switch Task

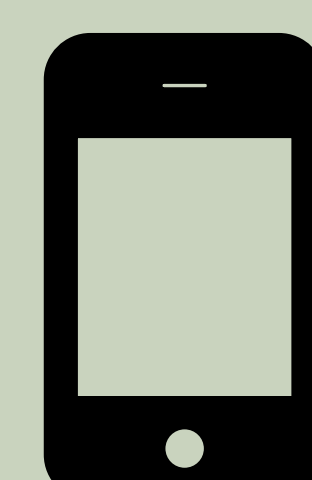
- Measures ability to flexibly switch between tasks or mental sets
- Example: Evaluating either the shape or color of an object based on a cue
- Dependent variable: Reaction time for switch trials – Reaction time for stay trials (larger difference = poorer functioning)

Supplemental Results

- Demographic Characteristics
 - Age: $M = 18.50$, $SD = 1.14$ years
 - Gender: 75% female, 25% male
 - Race: 56% White/Caucasian, 25% Asian, 5% Black/African American, 14% Other or Multiracial
 - Ethnicity: 22% Hispanic/Latinx
- Clinical Characteristics
 - 10.9% screened positive for hurricane-related PTSD
 - 20.3% reported at least “sometimes” ruminating about the hurricane in the past week
- Zero-order rumination effect: $r = .30$, $p = .02$



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