Post-Disaster Cognitive Functioning in 2016 Louisiana Flood Victims

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Background

- Previous research has shown that there are decrements in cognitive functioning of disaster survivors in the stressful periods following the event.
- Unfortunately, it is incredibly challenging to obtain data on the cognitive consequences of disaster-related stress in the aftermath of natural catastrophes.
- One such event was the Great Flood of 2016: 7.1 trillion gallons of water (3x Katrina) flooded 60,646 homes.

- In a two-part longitudinal study, we analyze these flood victims’ cognitive performance, asking: Did disaster stress (and prior disaster exposure) impact cognitive functioning, health, & well being during the recovery phase?

- Here, we report results obtained from the first wave of data collected on measures of cognitive functioning.

Methodology

**Participants**
- Final N = 156 (Screened for cog impairment: MoCA > 24)
- Residents of the greater Baton Rouge area
- A priori categorization into 3 flood severity groups
  1. Non-flooded controls
  2. Structural damage to homes
  3. Structural damage to home & prior damage during Katrina/Rita

- Tested on complex cognitive tasks, flood-related stressors, sleep disturbance, & mental well-being

**Dependent Measures**
- Operation Span
- Rotation Span
- Symmetry Span

**Correlations b/w Standardized Cog. Measures**
- Measure (Z-score)
  - Operation Span
  - Symmetry Span
  - Raven’s Matrices
  - Letter Sets
  - Sustained Attention

**Post-Disaster Cognitive Performance**
- Measure
  - Operation Span
  - Symmetry Span
  - Raven’s Matrices
  - Letter Sets
  - Sustained Attention

**Correlations b/w Standardized Cog. Measures**

**Longitudinal Study: Wave 1 Results**

**Methodology**

- Operation Span
  - Processing Errors
  - Symmetry Span
  - Rotation Span
  - Processing Errors

- Symmetry Span

**Are there any initial observable relationships b/w flood stress & cognition?**

- No significant differences in WM, gF, or Sust. Attention across flood groups

**Future Work**

- We lay the groundwork for upcoming analyses assessing disaster-related stress, sleep, and mental health impacts on cognitive functioning.

- These data will serve as a baseline for comparison across the different waves of this longitudinal study.

- Cognitive performance measures will be systematically compared to results from prior studies with non-disaster populations to determine whether there are any significant differences in our sample.

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**References**


Demographics

- Community-drawn sample varying in education and income levels
- Diverse range of ages (mean age: 49.3 yrs, range: 18 - 88 yrs)

**Education**
- High school or less: 14 (8.0%)
- Some college or specialized training: 62 (35.4%)
- College degree: 67 (38.3%)
- Master's/doctoral/professional degree: 32 (18.3%)
- Income
  - Less than $100/month: 20 (11.4%)
  - Between $1000 and $1500/month: 26 (14.9%)
  - Between $2000 and $3500/month: 49 (29.5%)
  - Between $4500 and $6000/month: 37 (21.1%)
  - Over $6000/month: 43 (24.6%)
- Income Adequacy
  - Less than adequate: 36 (20.6%)
  - Adequate or better: 159 (94.4%)

- 75.6% Female; 91.7% Caucasian