How Do Resilience Resources Change in Response to Acute Stress?

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Resilience: Resources, Measurement, and Associations with Acute Stress
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Background
Resilience, a common construct, is the ability to bounce back from adversity (Bonanno, 2004; Smith et al., 2008). Measuring resilience is not an easy undertaking. Current scales like the Connor Davidson Resilience Scale (Connor & Davidson, 2003) and the Brief Resilience Scale (BRS) (Smith et al., 2008) are too brief, and cover resilience in a way that makes resilience parallel to recovery, or relate so strongly to positivity and optimism that they may actually just be measuring those constructs instead. We sought to study resilience, and other constructs that aid in building it, or resilience resources, pertaining to stress. Julian and colleagues (in prep.) developed the Resilience Resources Scale (RRS), that assess resilience resources, which may be more valid measures of resilience. We also studied stress within the context of resilience. We used the RRS among many other scales measuring stress, in a study where we assessed the relationship of resilience and stress before and after acute stressors. We predicted that the RRS would not change after exposure to an acute stressor, whereas other measures of resilience and stress would change. Secondly, we predicted that RRS scores at the beginning of the study would predict lower perceived stress and state anxiety after the stressor.

Measures
- Resilience Resource Scale (Julian et al., in prep.)
- The Brief Resilience Scale (Smith et al., 2008)
- Connor Davidson Resilience Scale (Connor & Davidson, 2003)
- Satisfaction with Life Scale (Diener et al., 1985)
- The Life-Orientation Test (Scheier et al., 1994)
- BRIEF Coping Scale (Carver, 1997)
- ENRICHD Social Support Instrument (Mitchell et al., 2003)
- Perceived Stress Scale (PSS) (Cohen & Williamson, 1985)
- PROMIS Scales (anxiety and depression) (Pilkonis et al., 2011)
- The State Trait Anxiety Inventory (STAI) (Spielberger et al., 1983)
- Ten Item Personality Inventory (Gosling et al., 2003)
- Conscientiousness
- Brief Emotional Intelligence Scale (Davies et al., 2010)
- Emotional Regulation Questionnaire (Gross & John, 2003)
- Positive and Negative Affect Schedule (Watson et al., 1988)
- Multidimensional Measurement of Religiousness/Spirituality (Fetzer/NIH Working Group, 1999)
- ENRICHD Social Support Instrument (Mitchell et al., 2003)
- Patient Health Questionnaire 15 (Kroenke, Spitzer, & Williams, 2002)

Methods
Participants first took a pre-survey via online link. See measures section for content.

Five to 10 days later, participants attended a lab session. They engaged with the Paced Auditory Serial Addition Test (PASAT) (Tombaugh, 2006) and an anger writing task (AEMT; Mills & D’Mello, 2014) as stressors, followed by the stress and resilience scales used previously. We also included a values affirmation task (Hales et al., 2017) to mitigate any distress caused by the stress tasks.

Participants: 84 undergraduate students
- 18.71 (.944) years old
- 72.6% Female; 26.2% Male
- 10.7% Hispanic/Latino; 86.9% Non-Hispanic/Latino
- 82.1% White; 3.6% African American; 4.8% Asian; 9.5% Other

Data Analysis proceeded with cleaning and scoring the data, conducting a manipulation check on the AEMT, running descriptive statistics, and hypothesis testing through regression analyses and t-tests in SPSS.

Results
- t-tests were run to assess data
  - There was a significant difference between part 1 and part 2 scores for the RRS 12 ($t_{51} = -4.806$, $p < 0.001$)
  - There was a significant difference between the PSS scores from part 1 and part 2 ($t_{56} = -5.8703$, $p < 0.001$)
- To test whether resilience resource levels were associated with less stress, regressions were run
  - RRS12 levels on the pre-survey predicted lower perceived stress at part 2 ($\beta = -.418$, $p < 0.001$)
  - RRS12 levels on the lab survey predicted lower state anxiety at part 2 ($\beta = -.562$, $p < 0.001$)

Conclusions
The findings of the study supported our hypotheses. We predicted that the RRS would not change after exposure to acute stressors, whereas other measures of resilience and stress would change. The RRS did not change and the measure of stress (PSS) did change after acute stress which supports our hypothesis. This suggests our stress manipulation was strong. However, the BRS also did not change after the acute stressors. Furthermore, the measure of state anxiety did not change which suggests this measure may not be appropriate for assessing acute stress in the context of our study or our stress manipulation may represent perceived stress rather than state anxiety. Secondly, we predicted that RRS scores at the beginning of the study would predict lower perceived stress and state anxiety. We found that the RRS predicted lower levels of stress and state anxiety. This suggests that those who have higher levels of resilience experience less stress following acute stressors. Our research added information about resilience and acute stress in undergraduate students. Future resilience and stress studies might implement random sampling and the RRS.

References: