RELATIONSHIP BETWEEN LEVELS OF RESILIENCE AND PHYSIOLOGICAL AND PSYCHOLOGICAL STRESS RESPONSE

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INTRODUCTION

- During stressful situations, the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system (SNS) activate and cause physiological changes.
- Limited research has examined the association between resilience—a personality factor describing how quickly individuals bounce back from stressors—and stress reactivity.
- Previous research has often used severe stressors instead of laboratorycontrolled stressors.
- Dexamethasone is a synthetic glucocorticoid which suppresses HPA axis natural responses to stress.
- Propranolol is a non-selective β-antagonist that suppresses the SNS stress response.
- In this study, we investigated the effects of trait resilience, as a moderator of HPA axis and sympathetic nervous system suppression, on physiological and psychological reactivity during an acute laboratory stressor.

HYPOTHESES

1. Resilience will be directly related to physiological and psychological stress recovery.
2. The rate of stress recovery will be the greatest following dexamethasone and propranolol administration for high trait resilience individuals compared to low counterparts.

METHOD

- Participants: Sample 92 undergraduates (46 male, 46 female) from The University of Texas at Austin
- Age: 18 to 24
- Race:
  - Hispanic or Latino = 32.61%
  - Asian = 29.35%
  - Black or African American = 3.26%
  - Other (mixed ethnicity) = 7.61%
- Acute Laboratory Stressor: Trier Social Stress Task

PROCEDURES

- Subjects ingested either 2mg of dexamethasone or a placebo the evening before testing, and 80mg of propranolol or placebo 1 hour before testing.
- Subjects completed Brief Resilience Scale (BRS) as part of a prescreening.
- All subjects completed the Trier Social Stress Test (TSST) in which they were instructed to deliver a speech and perform an arithmetic task in front of a panel of impassive judges.
- Participants provided self-reported stressfulness using visual analogue scales and salivary cortisol samples through passive drool.
- Measured:
  - Brief Resilience Scale (BRS)
  - Visual Analogue Scales: Stressed (VAS-Stressed)
- Data Analyses:
  - Area under the curve with respect to ground calculations were completed for subjective stress and salivary cortisol levels from baseline to immediately after the TSST.

RESULTS

- Cortisol Levels Differed Significantly Between High and Low Resilience Individuals
- Drug Treatment and Trait Resilience Interact in Their Effects on Cortisol

SUMMARY

- These findings raise questions about the effectiveness of using beta-blockers to treat subjective stress in individuals with low level of resilience.

REFERENCES