The Relations between Heart Rate and Self-Critical Perfectionism from Induced Stress

Introduction

Stress & Effects of Stress

- Stress can influence an individual’s life both physiologically and psychologically (Cruess et al., 2015).
- Positive relations exist between high stress and poor behavioral choices, such as harmful relationships (Lewandowski, Mattingly, & Pedreiro, 2014).
- Higher levels of both self-criticism and stress are related to an increase in an individual’s susceptibility to mental illnesses, such as depression and anxiety (Mandel, Dunkley, & Moroz, 2015).

Self-Critical Perfectionism

- Self-critical perfectionism (SCP) is defined by having high standards of yourself and your goals, but also being overly self-critical in the process (Blatt & Luyten, 2009).
- Previous research found a positive relation between stress and SCP (Kempke, Luyten, Mayes, Van Houdenhove, & Claes, 2016).
- As stress increased, the participant also showed an increase in self-critical perfectionism (Kempke et al., 2016).
- Self-critical perfectionism inhibits the effectiveness of treatment programs for different mental illnesses (Blatt & Zuroff, 2005).

Hypothesis

- There will be a positive relation between induced stress, as measured by heart rate, and self-critical perfectionism.
- Specifically, those who score higher on the Depressive Experiences Questionnaire Self-Criticism 6, indicating higher self-critical perfectionism, are expected to have a higher heart rate when stress is induced (Kempke et al., 2016).

Results

- IBM SPSS 22
- Mean values: Depressive Experiences Questionnaire Self-Criticism 6, M = 25.10 (SD = 5.86); Change in Heart Rate 1, M = -2.57 (SD = 3.86); Change in Heart Rate 2, M = -1.29 (SD = 3.72)
- Spearman’s rho correlation coefficient was calculated
- No correlation was found between critical perfectionism and change in heart rate one nor two, r1 (N = 10) = -1.52, p = .67, r2 (N = 10) = .33, p = .35

Method

Participants

- Convenience sample from Eastern Connecticut State University (N = 10)
- Demographics of Participants
  - 40% Male (n = 4), 60% Female (n = 6)
  - 10% Freshman (n = 1), 30% Sophomore (n = 3), 30% Junior (n = 3), 30% Senior (n = 3)
  - 90% Caucasian (n = 9), 10% Hispanic (n = 1)
  - Mean Age of 19.75 (SD = 1.44)

Materials

Depressive Experiences Questionnaire Self-Criticism 6 (Radich et al., 2008)
- Self-report, paper and pencil questionnaire
- 6 items, 7-point Likert Scale
- Blatt (2004) found that the measure is both valid and reliable when measuring SCP using the self-criticism subscale of the DEQ
- Cronbach Alpha for self-criticism .75 (Zuroff, Quinlan, & Blatt, 1990)
- Higher scores indicate an individual is more self-critical

Mirror Tracing Task (computerized)
- Stress Inducer
- Psychophysiological Data
- BioPac electrocardiogram (ECG) measured heart rate

Procedure

- A demographic form was administered
- Participants took the Depressive Experiences Questionnaire Self-Criticism 6
- Hands were washed up to the elbows
- Electrocardiogram (ECG) electrodes were applied to forearms and palms
- Five minutes of baseline data were recorded
- Participants took a computerized Mirror Tracing Task, which they were given 2 minutes for each of the three levels to complete

Discussion

Summary

- No significant relations were found between induced stress, as measured by heart rate and self-critical perfectionism, which contradicts with previous research.

Limitations

- The measure’s reliability was weak based on its Cronbach Alpha of .75 (Zuroff et al., 1990)
- Small sample, not generalizable

Future Research

- Looking at SCP, stress and mental illnesses, such as depression (Luyten, Kempke, Van Wambke, Claes, Blatt, & Van Houdenhove, 2011)

References