High Anxiety Moderates Mood Response To A Stressor Following Attentional Retraining

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Introduction

- Attentional biases towards negative stimuli have been associated with poor mental health [1], difficulties with emotion regulation [2] and interpersonal dysfunction [3].
- Immediately following a stressor, most individuals experience an increase in negative mood, particularly for individuals with high anxiety who have negative attentional biases [1].
- Attentional biases may be modified through the use of computerized training tasks [4-7].
- Retraining attentional biases has proven to be efficient in decreasing stress reactivity [8], as well as increasing confidence [9] and self-esteem following a stressor [10]. Still, little is known about the effects of attentional retraining on mood for individuals who are more anxious.
- For this reason, we sought to examine whether the retraining of attentional biases through a computerized training tasks can reduce negative mood responses following a psychosocial stressor for those reporting high levels of anxiety.

Study Aim

To examine (1) how attentional retraining, relative to a control task, can influence the mood response after a psychosocial stressor, and (2) whether this effect will be stronger in individuals reporting high anxiety.

Hypotheses

1. Individuals in the retraining condition, relative to controls, will report less negative mood following a psychosocial stressor.
2. Individuals in the retraining condition, relative to controls, reporting high levels of anxiety will report less negative mood in response to a psychosocial stressor.

Results

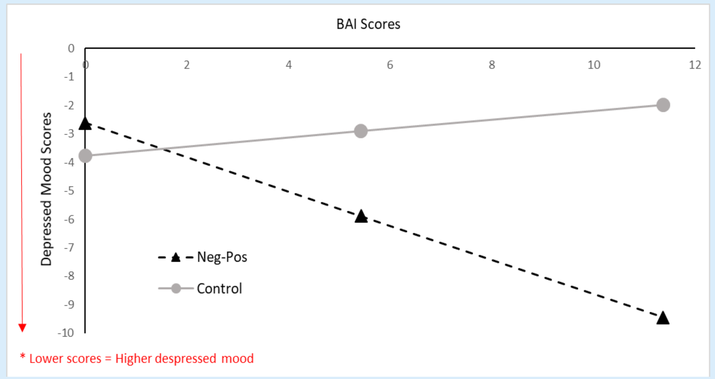

Figure 1. Higher anxiety scores moderate levels of depressed mood in response to a psychosocial stressor

- High anxiety moderated the relationship between attentional retraining and participants' mood response to a psychosocial stressor (Condition X Anxiety; F(1, 36)=5.47, p=.025).
- Analysis of conditional effects revealed that those in the retraining condition with higher anxiety symptoms, compared to controls, reported significantly more depressed mood in response to the psychosocial stressor (t(1)=2.72, p=.01).

Note: No main effect of retraining condition on mood change was found.

There may be a negative effect of attentional retraining on the mood response to a stressor of individuals reporting high anxiety

Discussion

- Contrary to our hypothesis, and previous research [15], attentional retraining did not buffer mood reactivity in response to a psychosocial stressor.
- Additionally, our results contradict past research [8] by indicating that attentional retraining may not be effective at dampening stress reactivity in those with high levels of anxiety, and may actually lead them to experience higher depressed mood.
- Paradoxical effects of attention retraining have been reported. Pilgrim et al (2014) found that attentional retraining unexpectedly increased the negative mood, salivary cortisol, and alpha amylase response to a psychosocial stressor [16].
- This effect may be occurring due to the fact that stressors such as the TSST are devoid of positive stimuli or social support. Hence, participants have no positive stimuli in which to shift their attention to.
- Future research should examine how individuals trained to shift their attention away from negative stimuli and towards positive may benefit from the availability of positive stimuli or support within the stressor and after. In addition, studies examining naturalistic stressors are needed to determine if these effects translate to the natural environment.

Methods

Participants

Forty participants (20 males) between the ages of 18 and 29 years old (M=23.9, SD=2.9), with no current mental disorders, were recruited from a community sample and randomly assigned to the retraining (*n*= 20) or control group (*n*= 20).

Computerized Retraining Task

Employed an adapted version of the dot-probe paradigm over 3 consecutive days [11].

- Shifting from negative towards positive (Neg-Pos): Presented with negative-positive pairs of pictures above and below a central fixation point. Participants must identify the location of a target with a key press, which is always in the spatial location of the positive picture.
- Control condition: Presented with the same pictures as those presented in the retraining task and asked to identify the sex of the confederates.

Trier Social Stress Test (TSST) [12]

Performed a speech task (5 min) and mental arithmetic (5 min) in front of two "expert" evaluators, while being video recorded.

Beck Anxiety Inventory (BAI) [13]

Self-reported anxiety symptoms were assessed at baseline. Higher scores indicate more symptoms of anxiety.

Profile of Mood States (POMS) questionnaire [14]

Self-reported mood ratings administered immediately before (Time 1) and after the TSST (Time 2)

Mood subscales: elated/depressed, composed/anxious, confident/unsure, agreeable/hostile

- **Lower scores** indicating **higher** negative mood.
- **Mood response:** Time 2 - Time 1

Data Analysis

Moderation analyses were conducted to assess how higher anxiety symptoms affect the relationship between mood response to a psychosocial stressor and attentional retraining condition (Neg-Pos vs. Control)

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