



Research Article

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The Effectiveness of Attentional Training on Stress and Self-Esteem

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Abstract

Stress has been an immeasurably investigated theme within Neuropsychology since past few years. Attention training is a therapeutic intervention developed by Adrian Wells that involves the training of attentional skills to treat emotional disorders (Wells, 1990). This study investigated whether the Attentional training works as theorised to reduce stress. In addition, self-esteem and stress were investigated as potential moderators of the relationship between Attentional training and/or self-focus on vulnerability to the stressor. Prior research has shown that self-esteem level and self-focus interact such that self-focus predicts vulnerability to stress in people with low self-esteem, but not in those with high self-esteem. In a laboratory setting, 80 undergraduate student participants were exposed to a single session of either an Attention training analogue or a control treatment to see if Attentional training would reduce their stress to a subsequent stressor task.

Introduction

Selye [1] described stress as a non-specific reaction of the body to any request made upon it. Stress is connected with an enhanced emission of hormones (e.g. adrenaline and cortisol), which set up the body for the fight or flight reaction [2] and are responsible for a temporal increment in blood pressure and heart beat [3]. When the stress response is prolonged for more than six months and the symptoms of stress are still present without any threatening stimuli to trigger them, stress becomes an anxiety disorder [4]. Accordingly, stress can cause long haul issues to our wellbeing [5].

It is known that each individual perceives stress in a different way [6]. It is recommended that individual contrasts may assume a part in stretch helplessness [7] and it has been proposed this may be because of a few people having better coping mechanism for dealing with stress than others [8]. Individual characteristics such as: optimism, a sense of psychological control and high self-esteem has been shown to be valuable personality resources in order to face and cope with stress [9].

In the present study, Self-esteem (people generally feeling of self-worth or individual value) [10] was specifically compelling on the grounds that a person's overall happiness depends partly on the way they see themselves, which in term will influence their feelings of anxiety [11]. It has been recommended that there is a connection between the perception of rejection, stress and confidence [12]. Individuals who have been diagnosed with an anxiety disorder

such as stress, show biases in information processing [13] and therefore tend to pay special attention to threatening information around them [14].

Attention Training (ATT) depends on the idea that after redundant routine with regards to the cognitive processes behind attention, efficiency increases [15]. It's an intervention used to decrease anxiety [16]. Different studies reported that ATT lessens cognitive bias towards threatening stimuli, decreases feelings of rejection, boosts self-esteem and decreases levels of stress [17]. Research recommends that there is an antagonistic connection between self-esteem and stress hence, keeping in mind the end goal to improve a person's capacity to cope with stress their self-esteem must increase [18]. Besides, self-esteem and stress were identified with hyper-vigilance to rejection which diminished self-esteem and increased levels of stress [19].

Dandeneau et al. [20] created an ATT computer task in which participants were showed a grid of 15 rejecting and one accepting face. Participants were required to repeatedly ignore social threat (the aggressive faces) and search for acceptance (a smiley face). Results showed that students felt less stressed and anxious about their final exams and more competent in their school abilities after being exposed to an ATT task. In the workplace participants reported having much higher self-esteem, lower self-reported stress, lower levels of cortisol, higher self-confidence, and improved work performance.

Based on previous research this report aimed to look at two different hypotheses. Firstly it was expected that people with higher self-esteem would score less on the Perceived Stress Scale and those with lower self-esteem would score higher. The second hypotheses is that the participants who received ATT (experimental condition) would not show differences in stress level after being stressed with a stress task and their self-esteem would increase. Participants who do not receive ATT (control group) are expected to show higher levels of stress and lower levels of self-esteem after a stressing task than those in the experimental condition.

Method

Participants

The sample consisted of 80 undergraduates (14 men and 66 women) aged in between 18-40 years old. All subjects were randomly allocated into one of two conditions either the experimental condition (find-the-face) or the control condition (find-the-flower). Gender was evenly split into these conditions.

Apparatus

The Rosenberg Self-esteem Scale (SE) [21] consists on ten items and it has excellent internal consistency (Gutman scale coefficient of reproducibility: 0.92), test-retest reliability and validity [22]. The Perceived Stress Scale (PSS) has 14 questions and it has showed an adequate reliability and validity [23].

To monitor blood pressure an A&D Digital Blood Pressure Monitor was used.

A stopwatch and video camera.

A computer was used to display either an ATT task or control task. The ATT task consisted of 16 faces, only 1 smiling (Figure 1).



Figure 1: Matrix presented to participants in the experimental condition in which they received attentional training (find-the-smile) Dandeneau & Baldwin [19].

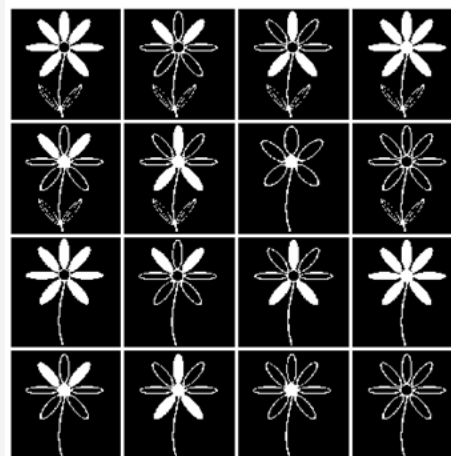


Figure 2: Matrix presented to participants in the control task in which participants did not receive attentional training (find-the-five-petaled-flower) Dandeneau & Baldwin [19].

The control task showed a total of 16 flowers with only one flower with five petals (Figure 2).

Design

Two repeated measures t-test were used to measure scores of stress (PSS and blood pressure) and self-esteem before and after participants received either ATT or the control task. Stress and self-esteem were measured twice: before and after the stressor. ATT was only provided to half of the sample and the control group did a task with no ATT. Participants was randomly assigned to each condition.

Procedure

Firstly participants completed the PSS and the Self-Esteem Scale and their baseline blood pressure was measured. Then, participants in the experimental condition did the ATT task in which they had to click on the smiling face (or the 5 petaled-flower in the control group) as quickly as possible. Both conditions consisted of 80 trials.

In order to create a moderate psychological stress, they had three minutes to prepare a five-minute free speech that they had to speak about in front of a camera. Following, they had to do a mental arithmetic task (2011-13) that involved counting backwards out loud for five minutes and every time they made a mistake they had to start over again. After, their blood pressure was measured, and they completed the PSS and the Self-Esteem questionnaire a second time.

Results and Discussion

In the group that received ATT the means of the scores before the stressor on Perceived Stress Scale (PSS1), Self-esteem (SE1), Systolic blood pressure (Systolic1) and Diastolic blood pressure (Diastolic1) were not significantly different from the scores after the stressor on PSS2: $t(39)=.705, p>.05$; SE2: $t(39)=0; p>.05$; Systolic2: $t(39)=1.23, p>.05$ and Diastolic2: $t(39)=.897, p>.05$ when ATT was provided in the experimental group. Therefore, stress levels stayed stable even after the stressor, hence, the first null hypotheses of no differences between the means is clearly accepted. Notwithstanding, self-esteem was expected to increase as a result of ATT but it stayed stable (Table 1 & 2).

Table 1: Paired Samples Statistics for experimental condition (attentional training task).

Pairs	Mean	N	Std. Deviation	Std. Error Mean
PSS1	19,50	40	5,928	,936
PSS2	19,02	40	6,351	1,004
SE1	19,80	40	4,916	,777
SE2	19,80	40	4,978	,787
Systolic1	115,93	40	14,885	2,353
Systolic2	114,25	40	15,288	2,417
Diastolic1	74,18	40	11,933	1,887
Diastolic2	73,20	40	8,695	1,375

Table 2: Paired Samples Test for experimental condition (attentional training task).

Pairs	Mean	Std Deviation	Std Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
PSS1-PSS2	0.475	4.261	0.674	-0.888	1.838	0.705	39	0.485
SE1-SE2	0	2.287	0.362	-0.731	0.731	0	39	1
Systolic1-Systolic2	1.675	8.595	1.359	-1.074	4.424	1.233	39	0.225
Diastolic1-Diastolic2	0.975	6.878	1.088	-1.225	3.175	0.897	39	0.375

Table 3: Paired Samples Statistics for control condition (control task).

Pairs	Mean	N	Std. Deviation	Std. Error Mean
PSS1	18.7	40	5.1	0.8
PSS2	19.6	40	5.96	0.94
SE1	20.48	40	4.48	0.71
SE2	19.68	40	4.91	0.77
Systolic1	113.1	40	13.01	2.05
Systolic2	116.6	40	11.76	1.86
Diastolic1	72.4	40	8.11	1.28
Diastolic2	75.58	40	8.19	1.29

Table 4: Paired Samples t-Test for control condition (control task).

Pairs	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
PSS1 - PSS2	-0,90	3,185	0,00	-1,92	0,119	-1,79	39	0,082
SE1 - SE2	0,80	3,03	0,00	-0,17	1,17	1,77	39	0,103
Systolic1-Systolic2	-3,50	8,08	1,27	-6,09	-0,915	-1,74	39	0,009
Diastolic1 - Diastolic 2	-3,18	8,46	1,33	-5,88	-0,471	-2,38	39	0,023

In the control group the means of the scores before the stressor on Perceived Stress Scale (PSS1), Self-esteem (SE1), were not significantly different from the scores after the stressor on PSS2: $t(39) = -1.79, p = .082$; SE2: $t(39) = 1.67, p = .103$. It can be argued that these results are due to practice effects on the questionnaires [24]. Notwithstanding significant differences were found before and after the stressor in blood pressure: Systolic1 and Systolic2: $t(39) = -1.739, p = .009$; Diastolic1 and Diastolic2: $t(39) = -2.375, p = .023$. These results can be attributed to the lack of ATT that prevented attention to rejection, therefore when participants were confronted with a stressful situation they focused their attention

on the negative stimuli rather than the positive ones, increasing their levels of stress as shown in the results (Table 3 & 4). These physiological findings led to think that it is possible that participants were not aware of their real stress levels when self-reporting (PSS and SE).

Results also confirmed the second hypothesis by showing a strong negative correlation $r(78) = -.602, p < .001$. between stress and self-esteem which suggests that participants with higher levels of stress had lower self-esteem and vice-versa (Table 3-5).

*Note: Correlation is significant at the 0.01 level (2-tailed)

Table 5: Correlation between Perceived Stress Scale (PSS1) scores and Self-esteem (SE1) scores before the computer tasks.

		PSS1	SE1
PSS1	Pearson CorrelationsSig. (2-tailed)N	180	-0.6020008
SE1	Pearson Correlation Sig. (2-tailed) N	-0.6020008	180

Conclusion

The current study supports ATT as promising perspectives for reducing symptoms of stress and confirmed a significant negative correlation between stress and self-esteem which predicts vulnerability to stress in people with low self-esteem, but not in those with high self-esteem. Future studies may also include an additional control group with attentional flexibility and gender difference. It is expected that the findings of the recommended work can reveal if there is any correlation between self-esteem, stress and attentional flexibility or not and if there is any gender difference.

Acknowledgement

None.

Conflict of Interest

No Conflict of Interest.

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