

Reproducing the analysis in Acute Effect of Physical Exercise on Negative Affect in  
Borderline Personality Disorder by Amour, Cailhol, and Ruocco

Natalie Palmer<sup>1</sup>

<sup>1</sup> Brooklyn College of the City University of New York

Author Note

Add complete departmental affiliations for each author here. Each new line herein  
must be indented, like this line.

Enter author note here.

## Abstract

10 This study looks at exercise as a potential strategy to reduce negative affect in individuals  
11 with borderline personality disorder. Negative affect was induced in all participants and  
12 they were randomly assigned to either an experimental or control condition. Affect was  
13 measured using a feeling scale and arousal scale before and after mood induction. This is a  
14 reproduction of the repeated measures t-test performed to assess the negative mood  
15 induction strategy used by the researchers. The induction strategy has a significant effect  
16 on inducing negative feeling/affect in participants, but there was not a significant difference  
17 in arousal ratings before and after.

18 *Keywords:* borderline personlaity, exercise

19 Word count: X

Reproducing the analysis in Acute Effect of Physical Exercise on Negative Affect in  
Borderline Personality Disorder by Amour, Cailhol, and Ruocco

## Introduction

This report reproduces the repeated measures t-test used to evaluate the effectiveness  
of the negative mood induction strategy performed in the experiment by Amour et  
al. (2021). Open data can be downloaded from <https://osf.io/t2egx/>.

This study looked at individuals with borderline personality disorder (BPD) and  
whether or not exercise could be a beneficial emotion regulation strategy. All participant  
had to go through a negative mood induction procedure which consisted of watching a  
five-minute scene from The Silence of the Lambs which has been shown to induce negative  
feelings. After the negative mood induction, participants were randomly assigned into an  
exercise condition which consisted of 20 minutes of PE, or a control condition which  
consisted of watching a 20 minute clip from a “neutral” film. The researchers used “Feeling  
Scale” (FS) to measure affective valence with a range from -5(very bad) to 5(very good).  
They also used an arousal scale (FAS) to measure arousal, which ranged from 1(low  
arousal) to 6(high arousal).

## Methods

### Participants

The study consisted of 27 participants who had all been diagnosed with borderline  
personality disorder.

## Material

## Procedure

Participants all had to go through a negative mood induction strategy which was watching a scene from Silence of the Lambs. Researchers measured negative and positive valence as well as arousal in all participants seven times throughout the experiment. Before the negative mood induction strategy, right before the induction strategy, immediately following the negative mood induction, 5 minutes into the experimental condition, 10 minutes into the experimental condition, 15 minutes into the experimental condition, and at the end of the experiment.

## Data analysis

## Results

The reanalysis of the repeated measures t-test used to look at effectiveness of the negative mood induction strategy looked at feeling and arousal scores directly before and immediately after the mood induction strategy.

### Repeated Measures T-Test for Feeling Scores before and after

The participants feeling scores (FS) were significantly more negative after ( $M = -0.2592593$ ,  $SD = 2.58$ ) the scene from Silence of the Lambs than before ( $M = 5.074$ ,  $SD = 2.52678$ ),  $t(26) = 2.41$ ,  $df = 26$ ,  $p\text{-value} = 0.023$ . The mean difference was ( $M = 1.59$ )

### Repeated Measures T-Test for Arousal Scores before and after

However, the participants arousal scores were not significantly more negative (FAS) after ( $M = 6.81$ ,  $SD = 2.527$ ) the scene from Silence of the Lambs than before ( $M =$

61 5.074, SD = 2.525),  $t(26) = -3.2845$ ,  $df = 26$ ,  $p\text{-value} = 0.00292$ . The mean difference was (  
62  $M = -1.740741$  )

### 63 Discussion

64 The re-analysis somewhat successfully reproduced the analysis reported by  
65 (st-amour\_cailhol\_ruocco\_bernard\_2021?). My results for the repeated measures  
66 t-test looking at feeling scores were the same (however, my means for before and after  
67 slightly varied).

68 My results for the second repeated measures t-test which looked at arousal scores  
69 before and after were not the same as the results reported in the study.

## References

70

- 71 Please cite as: St-Amour, S., Caillhol, L., Ruocco, A. C., & Bernard, P. (2021, April  
72 1). Acute Effect of Physical Exercise on Negative Affect in Borderline Personality Disorder:  
73 A Pilot Study. <https://doi.org/10.31236/osf.io/mdcuh>