



VIRTUAL
ICED
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JUNE 9-10

*Embracing Change
and Extending
Reach in a
Transformed World*

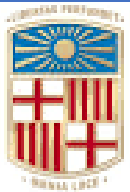
The role of a negative attitude toward technology in the effectiveness of an attentional bias modification task based on virtual reality and eye-tracking.

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I, *Mariarca Ascione*, have no commercial relationships to disclose.

Introduction: body-related attentional bias

Patients with Anorexia Nervosa show dysfunctional body-related attentional bias

Association with higher levels of body dissatisfaction

Interference with the effectiveness of body exposure-based treatments



Cognitive bias modification training can reduce attentional biases



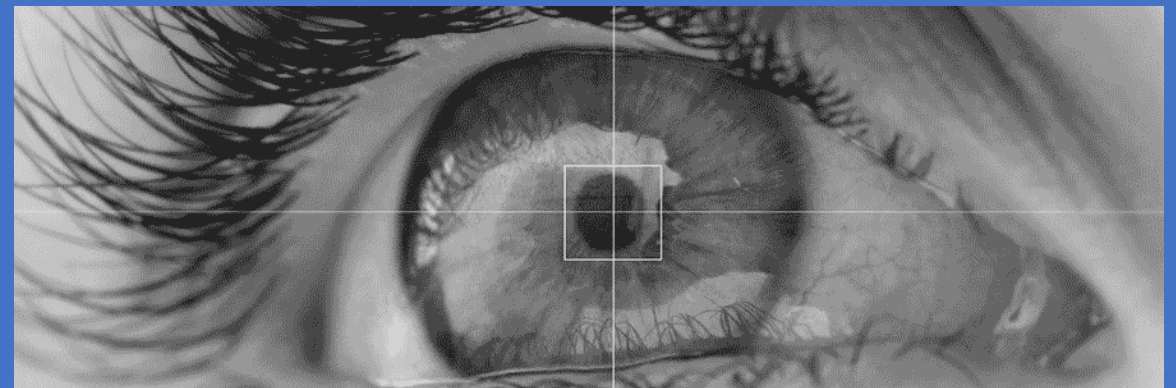
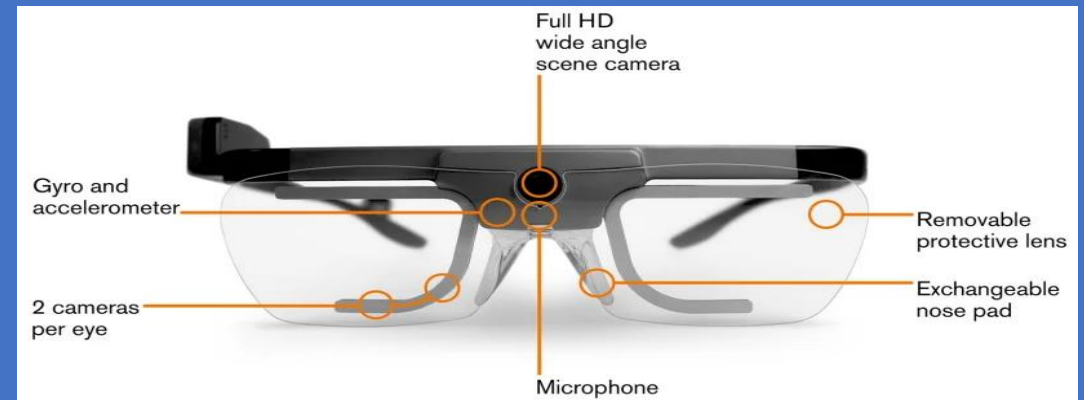
Introduction: attentional bias modification task

This study presents an innovative body-related attentional bias modification task using technology-based intervention

Virtual reality



Eye-tracking



Introduction: technology attitude

Personal factors influencing the effectiveness of virtual reality therapy:

- virtual reality sickness
- sense of presence and embodiment
- cognitive and emotional aspects related to virtual experience adaptation



Attitude to technology

a positive or negative evaluative judgement towards introducing, learning, and using technology in any environment

Study question

Might negative technology attitude influence the effectiveness of a single session of an innovative body-related attentional bias modification task that combines VR with ET?

Methodology: sample

51 female college students

29 with HIGH
negative technology attitude levels

22 with LOW
negative technology attitude levels



Methodology: pre-post measures

Body-related attentional bias

Fixations number
 Complete fixation time

Full body ownership illusion (VAS)

Fear of gaining weight (VAS)

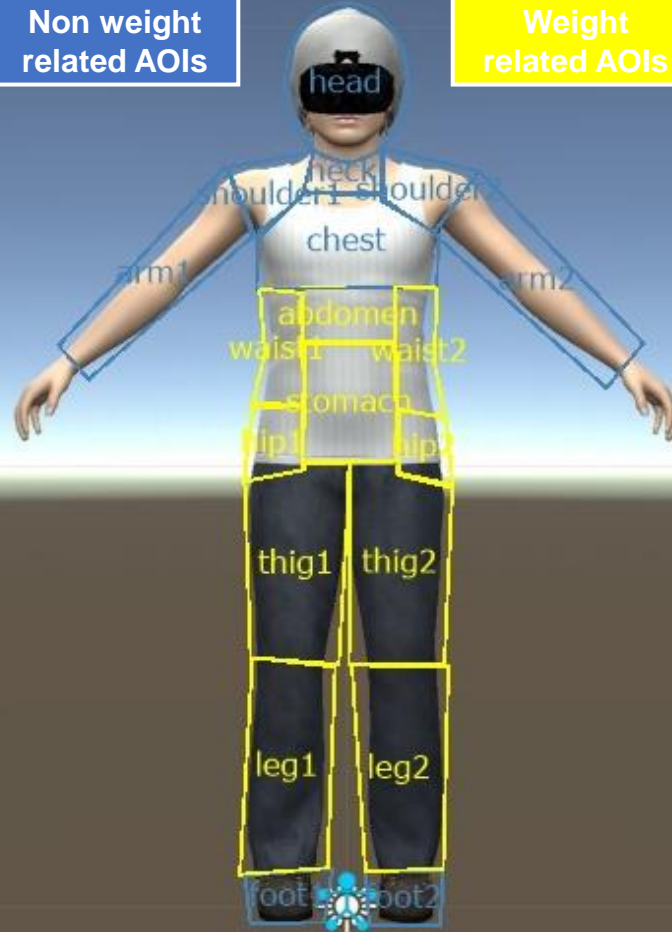
Body dissatisfaction (EDI-3 BD; Garner, 2004)

Body image anxiety (PASTAS, Reed et al., 1991)

Areas Of Interest

Non weight related AOs

Weight related AOs



AB assessment



Methodology: virtual reality enviroment



Methodology: full body ownership illusion



1. PHOTO OF THE PARTICIPANT

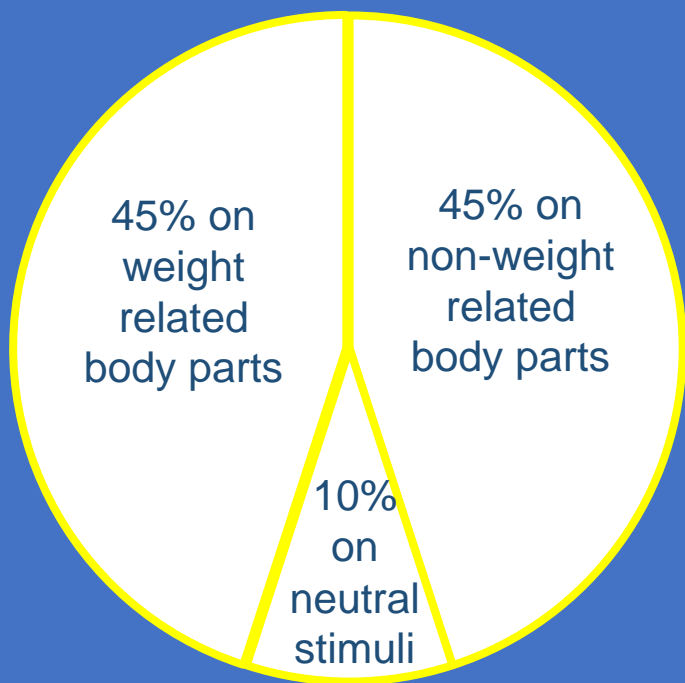


2. VISUO-MOTOR STIMULATION PROCEDURE



3. VISUO-TACTILE STIMULATION PROCEDURE

Methodology: attentional bias modification task



The task is based on a virtual reality adaptation of the attentional bias induction procedure proposed by Smeets et al. 2011

Descriptive results

| Group | N | AGE | BMI |
|--|----|--------------|--------------|
| | | Mean (SD) | Mean (SD) |
| Low negative technology attitude | 22 | 23,43 (3,14) | 21,82 (3,24) |
| High negative technology attitude | 29 | 22,92 (2,08) | 21,78 (2,95) |

Cut off points → 25th (=9) and 75th (=12) percentile score

Media and Technology Usage and Attitudes Scale

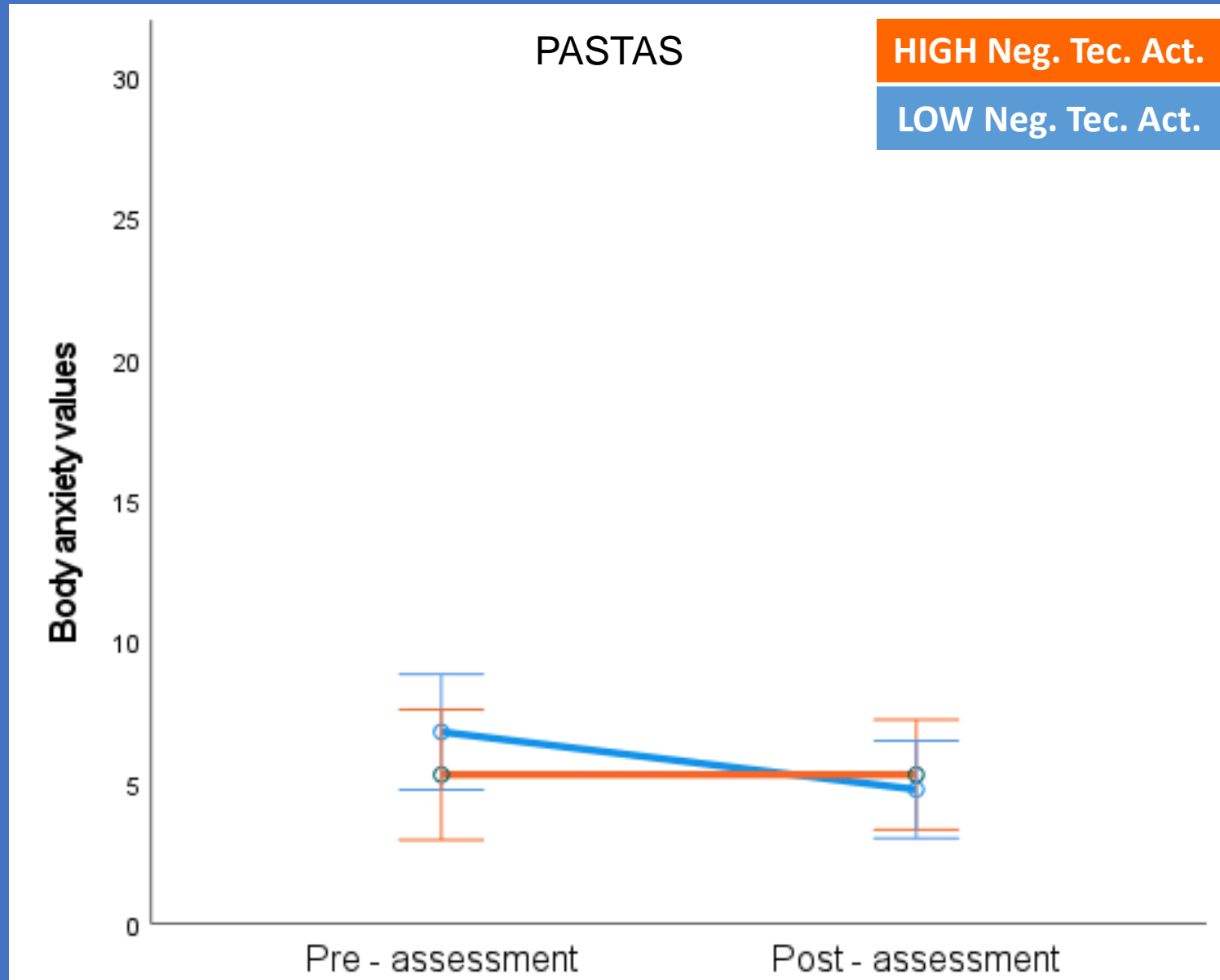
negative attitude toward technology subscale

Analytic results

Two-way mixed-design analyses of variance

| | Time x Group Interaction | | | Main effect of Assessment Time | | | Main effect of Group | | |
|-------------------------------------|--------------------------|-------|----------|--------------------------------|------|----------|----------------------|------|----------|
| | F | p | η^2 | F | p | η^2 | F | p | η^2 |
| Body image anxiety | 4.262 | .044* | .082 | - | - | - | - | - | - |
| Fear to gaining weight | .464 | .499 | .010 | 3.217 | .079 | .065 | .977 | .328 | .021 |
| Full body ownership illusion | .523 | .473 | .011 | .333 | .567 | .007 | 3.285 | .076 | .067 |
| Body Dissatisfaction | .736 | .395 | .015 | .036 | .850 | .001 | .041 | .840 | .001 |
| Complete fixation time | .258 | .614 | .006 | .614 | .437 | .013 | .332 | .568 | .007 |
| Fixations number | .017 | .898 | .000 | .051 | .822 | .001 | 1.173 | .284 | .025 |

Results: Body image anxiety

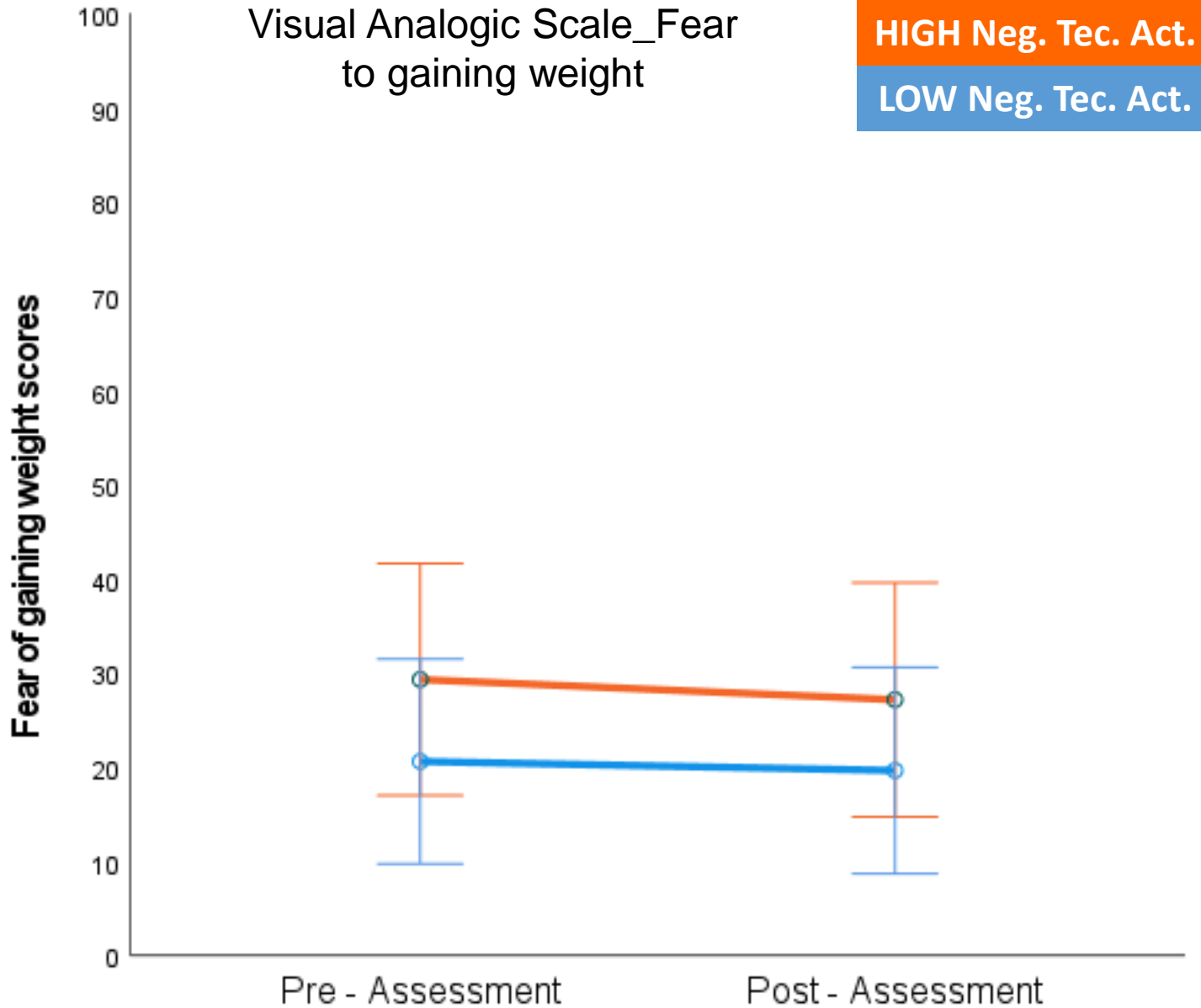


**Statistically significant
group*time interaction**

($p = .044$)

REDUCTION in body anxiety after the intervention only among women with LOW negative technology attitude levels

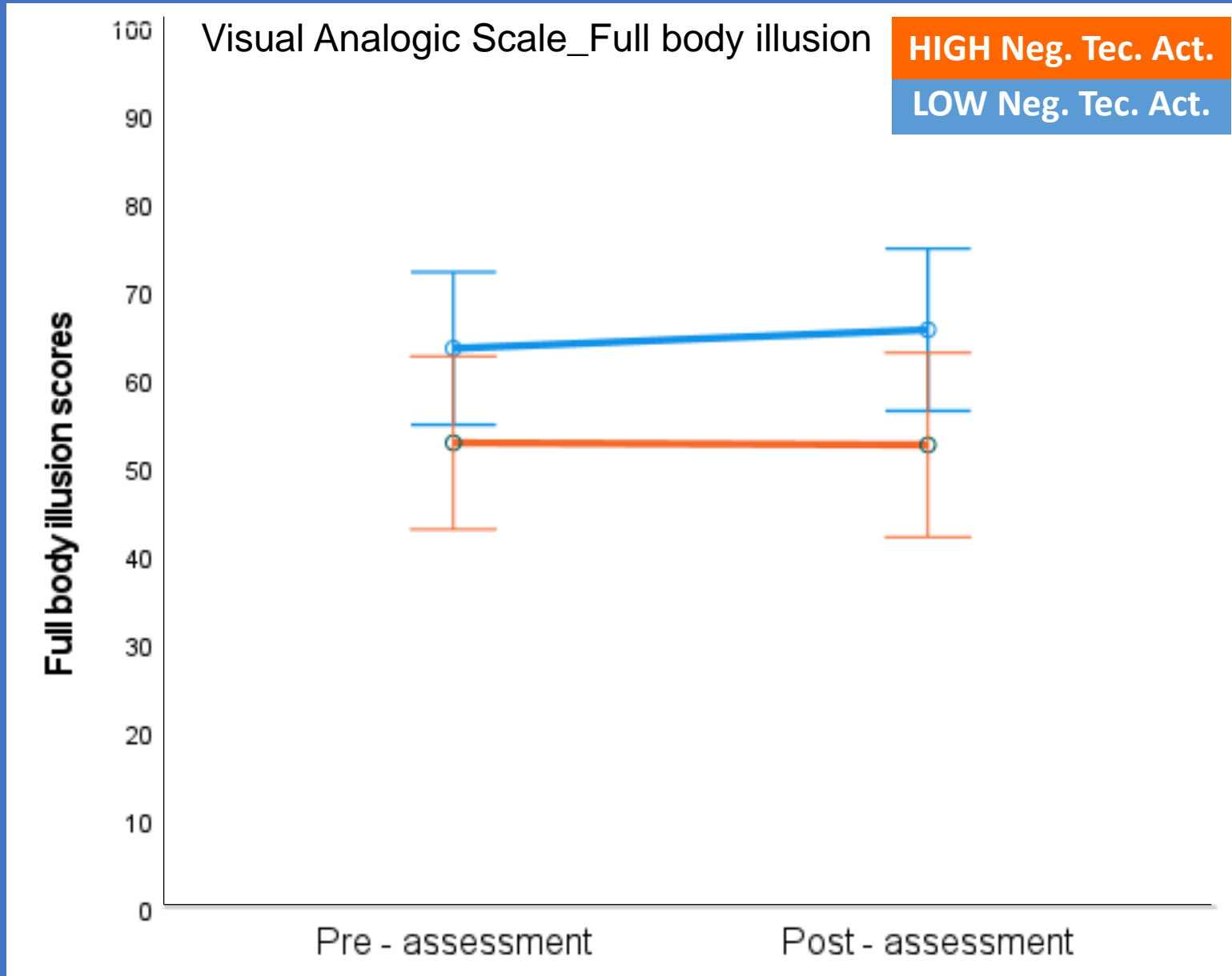
Results: Fear to gaining weight



Marginally significant effect of assessment time
($p = .079$)

Tendency after the intervention to **DECREASE** fear to gaining weight

Results: Full body ownership illusion

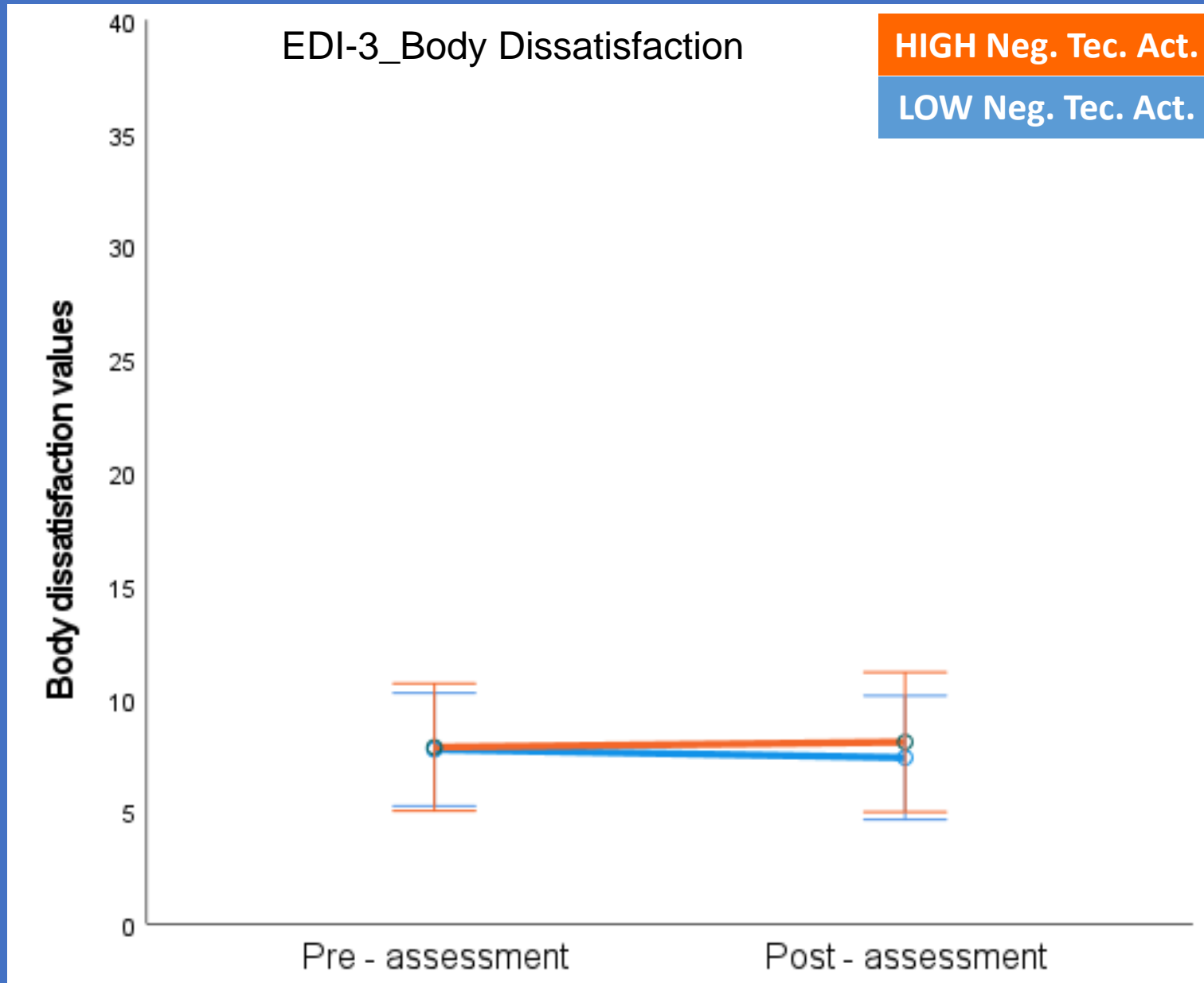


Marginally significant effect of group

($p = .076$)

Tendency for the women with low negative technology attitude to have HIGHER levels of full body ownership illusion

Results: Body dissatisfaction



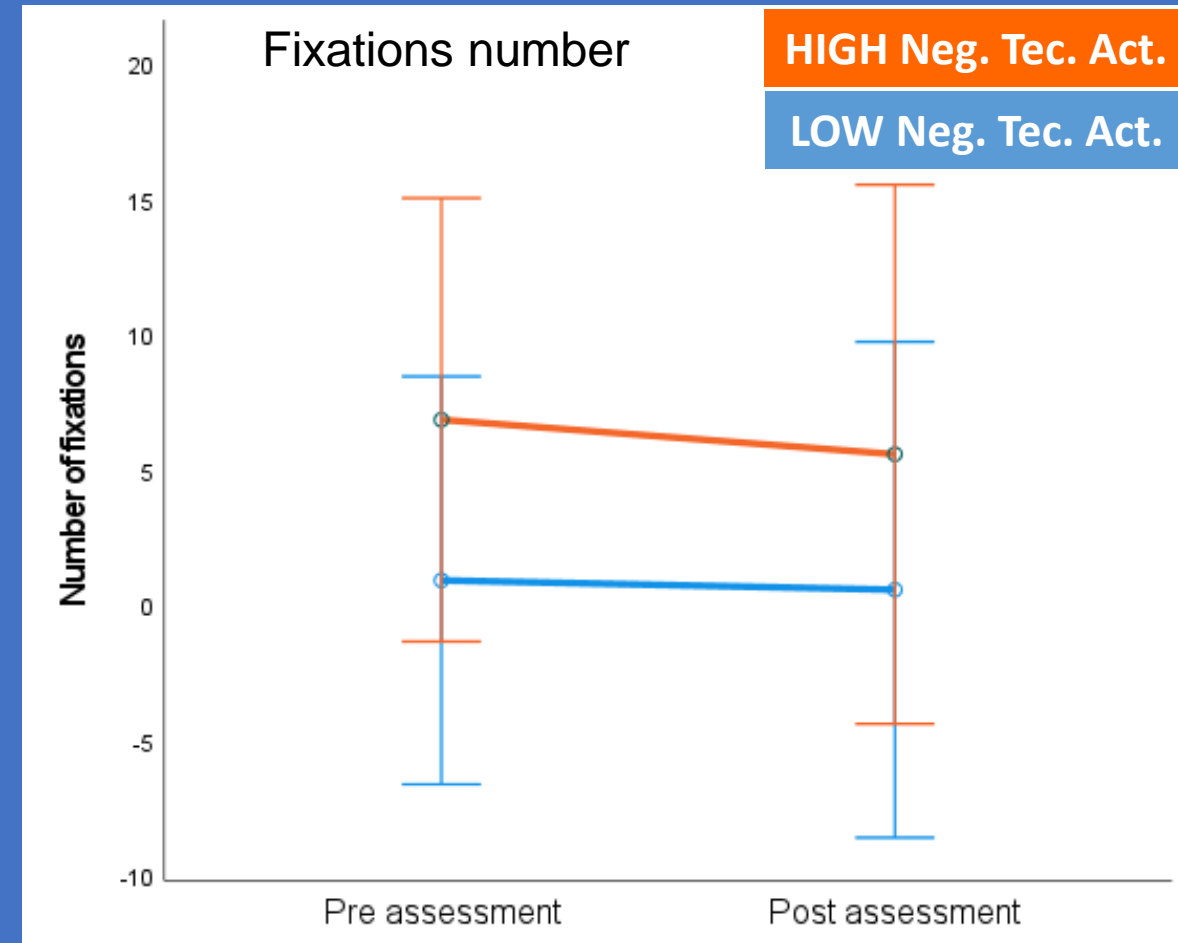
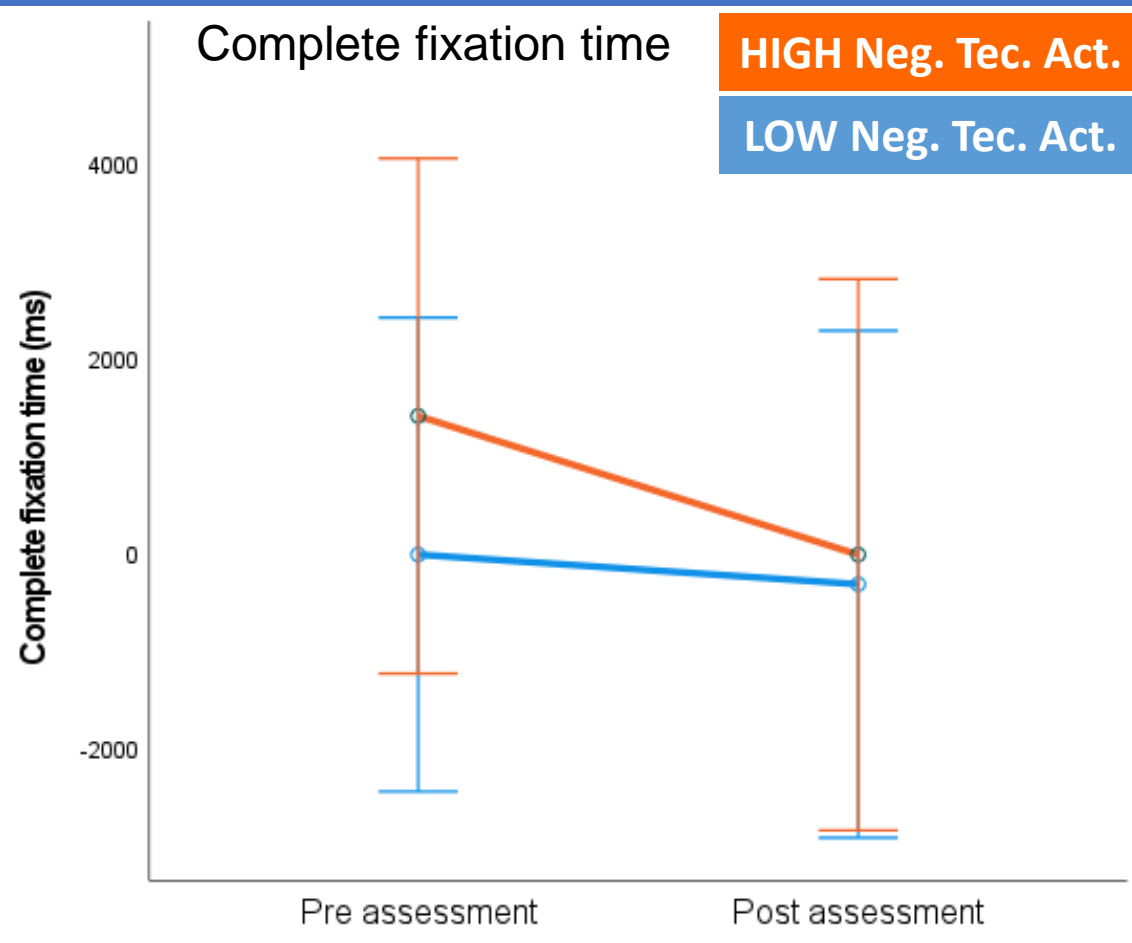
NO statistically significant
group*time interaction
or main effects
($p > 0.05$)

Results: Attentional bias measures

positive outcome → the participant had been looking more at the weight-related body parts
negative outcome → the participant had been looking more at the no weight-related body parts

NO statistically significant group*time interaction or main effects ($p > 0.05$)

NO statistically significant group*time interaction or main effects ($p > 0.05$)



Preliminary conclusions

***Technologies attitude
may play a critical role in the anxiety felt during
an attentional bias modification task
using virtual reality and eye tracking
in a non-clinical sample***

Future research

A greater understanding of the impact of technology attitude on the efficacy of technology-based interventions

Identification of others significant factors of human-virtual reality systems interaction

Acknowledgments

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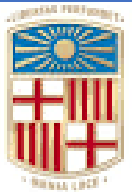
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Thank you!

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