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DISTORTED BODY IMAGE CAUSED BY EXPERIMENTALLY INDUCED ACUTE PAIN

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CONCLUSIONS

The **perceptual dimension of body image**, assessed via Fremantle Questionnaire **is distorted during acute pain**, but pain and detection thresholds remain intact.

AIMS

It is hypothesized that **acute pain** itself, will induce **changes in the body image** and will **mimic the alterations observed in clinical populations.**

Q1: Does the noxious stimulus itself lead to body image alteration?

Q2: Is the pain intensity related to body image distortion and pain sensitivity?

BACKGROUND

Recently published data demonstrated that patients with pain had altered body perception, however, it remained unclear which factors and how these contributed to such a perceptual distortion (Sunderman et al., 2020, Longo 2022).

This project is the first experimental trial aiming to induce body image changes in an experimental setting using noxious stimulation.

METHODS

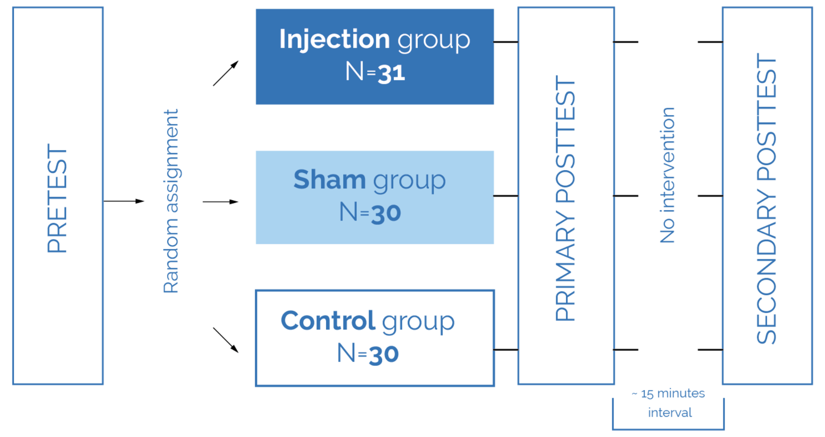
PRIMARY outcome:

I) **Body image**: (FREBAQ)
Fremantle Back Awareness Questionnaire (Wand et al., 2016)

II) **Detection threshold**: (DT)
(Parhizgar & Ekhtiari, 2010)

III) **Pain threshold**: (PT)
(Parhizgar & Ekhtiari, 2010)

III) **Pain intensity assessment**: (VAS score)
(0-100) (Bijur et al., 2001)



This experiment was designed as a between – and within–subjects' comparison.

Healthy subjects (n=90) were randomly assigned to one of three groups: pain induced by a (real) hypertonic saline injection, pain induced by a sham injection (without piercing the skin), and a control group with no intervention.

Both the real and sham injections were performed in the lower back by a physician.

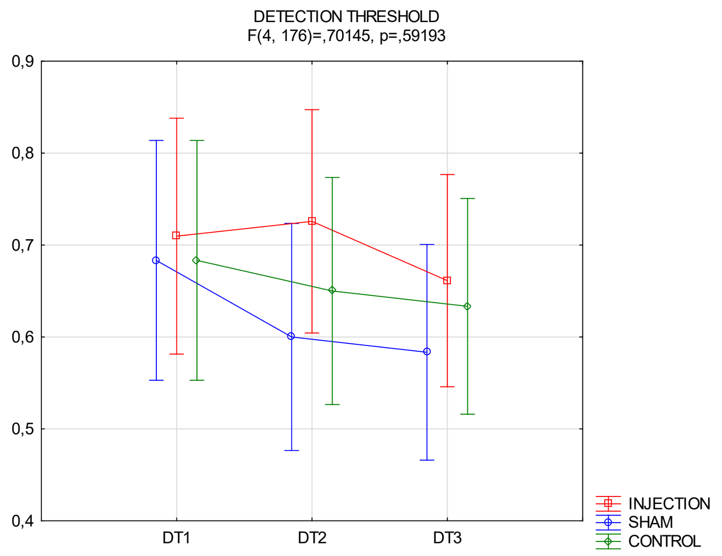
Subjects assessed their body image and detection and pain thresholds three times - just before the experimental manipulation (pain induction), during acute pain and after the pain had subsided.

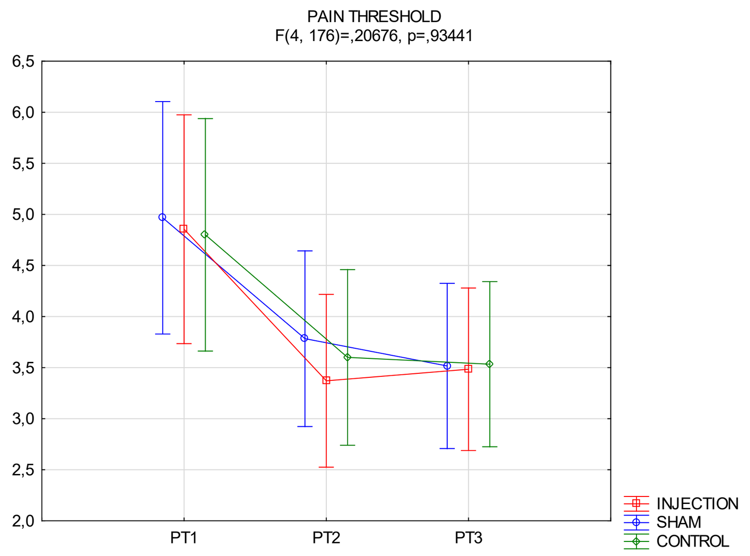
The study protocol was pre-registered prior to data collection: https://osf.io/vhxtg.
Ethics comitte aproval was obtained: 3/2022
(Academy of Physical Education in Katowice [Poland]).

RESULTS

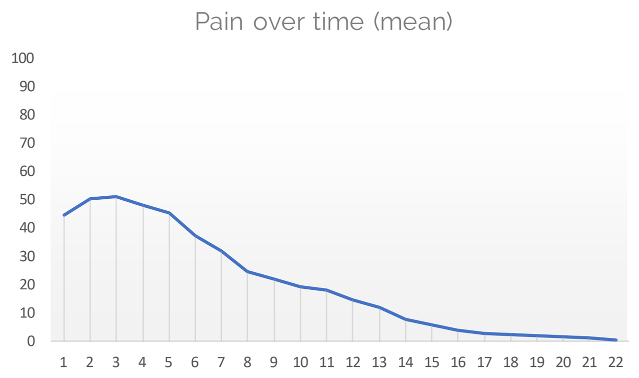
Pain sensitivity assessed via electrical pain threshold **did not differ** significantly between groups F(4,176)=0,206, p=0,93.

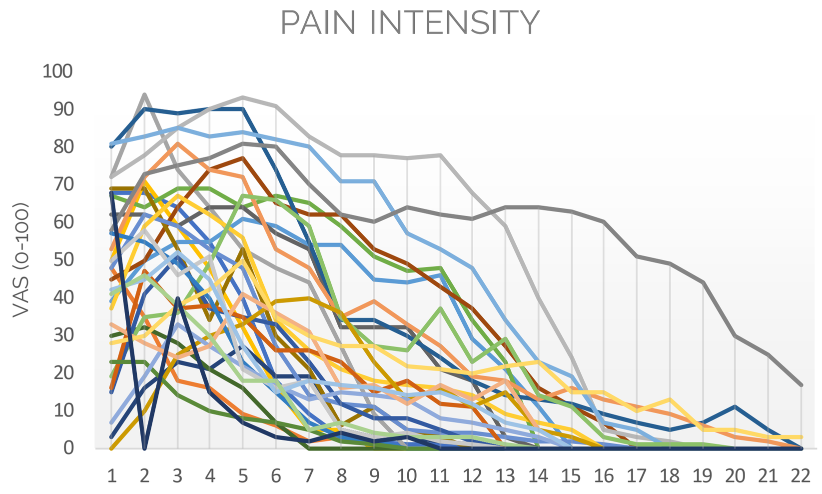
Detection sensitivity assessed via electrical detection threshold **did not differ** significantly between groups F(4,176)=0,701, p=0,59.





The mean pain score evoked by hypertonic saline injection was **20/100.**
The highest pain intensity was observed after 5 minutes: 48/100; after 10 minutes the pain intensity was rated 38/100; after 15 minutes: 29/100; and after 20 minutes: 22/100.
Pain subsided after 25 minutes.

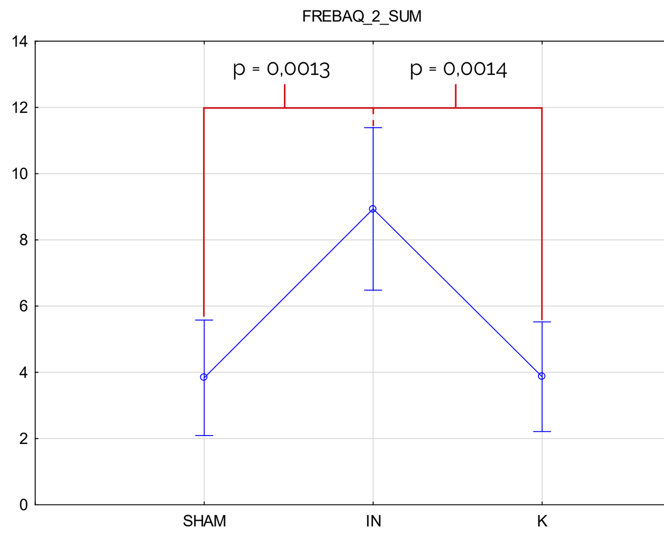


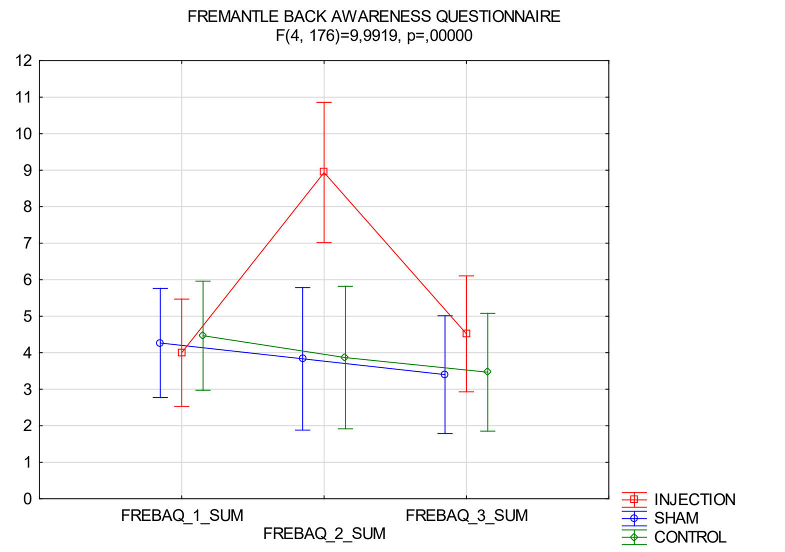


RESULTS

Body image assessed via Fremantle Back Awareness Questionnaire, revealed significant difference in **body image alteration** in the **injection group** F(4,176)=9,991, p<0,001.

Post-hoc analysis confirmed observed differences the injection group compared to sham and control groups.





Experienced **pain** was positively correlated with **body image distortion** in primary posttest (**r=0,39**, p<0,001).

The mean **pain** intensity (**r=-,04**, p=0,01) in the injection group was correlated with **pain threshold.**

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COI STATEMENT

The authors have no conflicts of interest to declare.
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