

DOES SOCIAL STATUS MATTER WHEN IT COMES TO LEARNING PAIN FROM OTHERS? A STUDY ON OBSERVATIONAL LEARNING IN INDUCING PLACEBO ANALGESIA

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AIM OF INVESTIGATION

This study aimed at:

- ✓ Establishing whether the social status of a model affects the magnitude of placebo analgesia induced by observational learning

METHODS

Participants

- ✓ 60 volunteers (55% women, mean age = 23.38 ± 1.46, range = 19-34 years)
- ✓ Exclusion criteria: (1) age below 18 and over 35, (2) previous participation in a pain study, (3) pain complaints, (4) presence or history of any neurological, respiratory, circulatory, musculoskeletal and/or psychiatric disorders, (5) being a student or a graduate in psychology

Stimuli

- ✓ Electrocutaneous stimuli: square pulses with a duration of 200 μs, delivered to the volar surface of the nondominant forearm. Apparatus: Constant Current High Voltage Stimulator (Digitimer, Welwyn Garden City, England, model DS7AH)
- ✓ Color stimuli: blue and orange lights presented in full-screen mode on a computer screen (17", resolution 1280 x 1024) facing the subject at a distance of approximately 50 cm

Measures

- ✓ Pain intensity measured on an 11-point numeric rating scales (NRS), ranged from 0 = 'no pain' to 10 = 'the most pain that is tolerable'
- ✓ Empathy measured by Interpersonal Reactivity Index (Davis, 1980)
- ✓ Perceived social status of the model measured by 1) four adjectives from ACL list (Gough & Heilbrun, 2012): *respectful, wealthy, educated, influential* combined into one scale and 2) direct question about social status of the model (the SR item)

Design and procedures

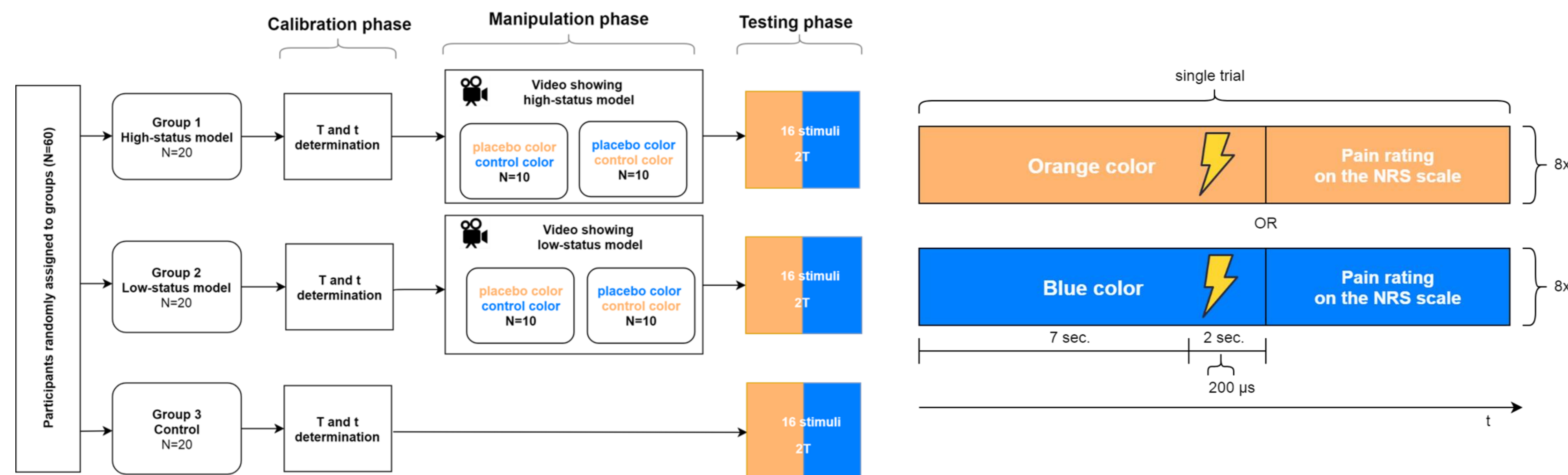


Fig. 1. Study design.

Fig. 2. Details of the study design (a single trial).

Randomization phase: Participants were randomly assigned to one of the three groups: high-status model, low-status model, control.

Calibration phase: Two ascending series of stimuli were delivered in steps of 1 mA, starting from 0 mA to determine tactile sensation threshold (t) and pain threshold (T). The intensity of pain stimulus used in the study was set at 2T mA.

Manipulation phase:

- ✓ In both experimental groups participants watched a video presenting a male model (57 years old). The model was presented either as a professor (high-status model condition) or a janitor (low-status model condition) of the university. The video consisted of two parts: 1) a short interview in which the model responded to questions related to his work (during watching, the participants could notice the social status of the model) 2) a presentation of that model undergoing the same experimental procedure that the participant was asked to take part in later

Manipulation phase:

- ✓ In the latter part of the video, the model rated verbally 8 electrocutaneous stimuli delivered to his forearm as more painful (ratings from 6 to 8 on the NRS scale) and 8 electrocutaneous stimuli as less painful (1-3 on the NRS scale). Half of the participants watched the video with the model's higher ratings for stimuli preceded by blue color (control stimuli) and lower ratings for stimuli preceded by orange color (placebo stimuli), and the other half watched the video with the model's higher ratings for stimuli preceded by orange color (control stimuli) and lower ratings for stimuli preceded by blue color (placebo stimuli)

Testing phase:

- ✓ Control stimuli (2T mA) preceded by 8 orange color stimuli and 8 blue color stimuli were presented in a pseudorandom sequence. Pain was rated all the 16 times. Fig. 2. depicts the design of a single trial
- ✓ The NRS for pain intensity rating was shown immediately after the electrocutaneous stimulus was applied

RESULTS

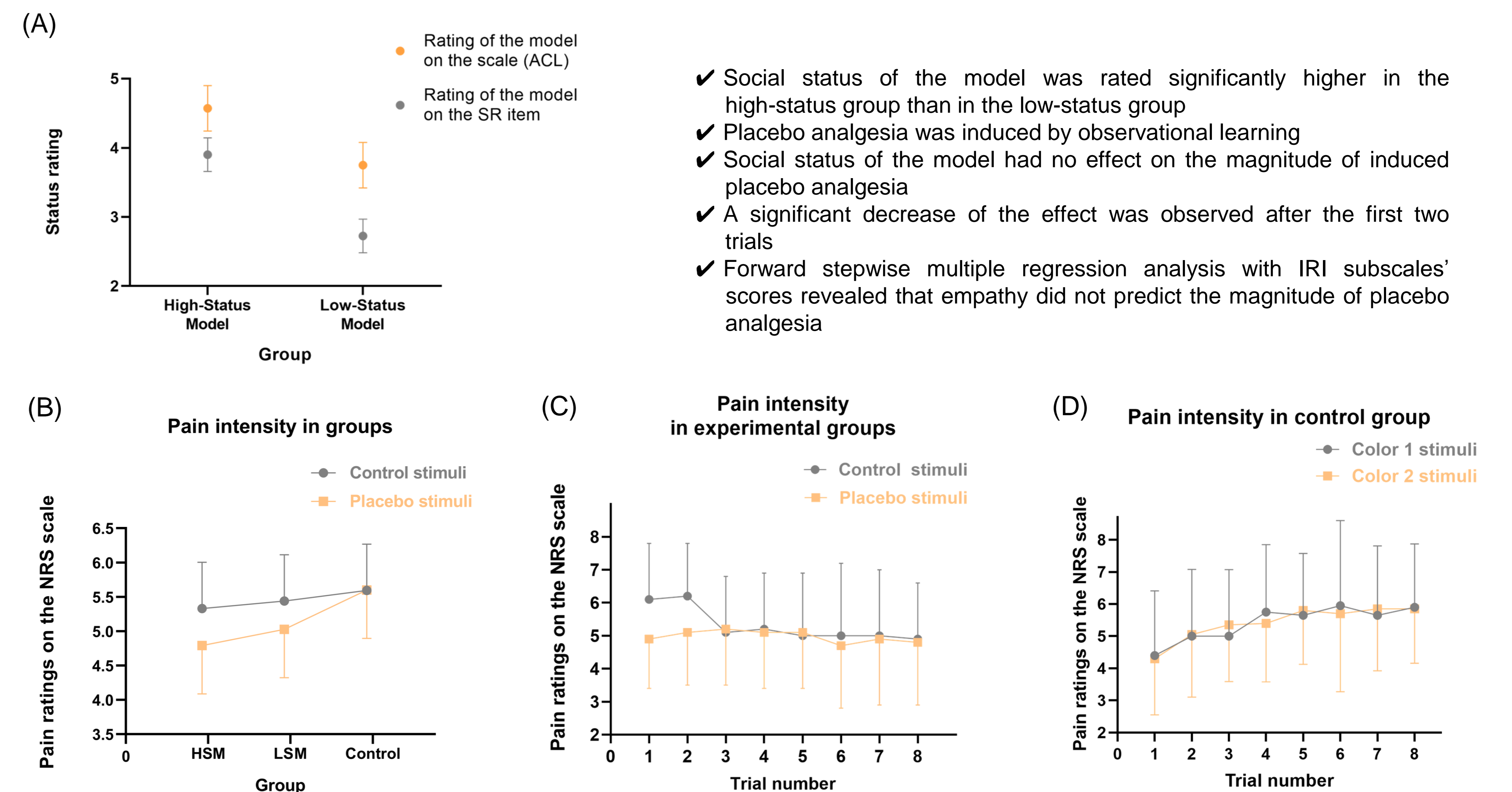


Fig. 3. The means of (A) status rating of the model, (B) pain intensity for control and placebo stimuli, (C) trial by trial pain intensity ratings for control and placebo stimuli in both experimental groups, and (D) trial by trial pain intensity ratings for color 1 stimuli (randomly selected blue or orange) and for color 2 stimuli (the colors were counterbalanced)

CONCLUSIONS

- ✓ No difference was found between the magnitude of placebo analgesia induced by observing a high-status model and a low-status model
- ✓ Social status of a model seems to have no impact on the magnitude of placebo analgesia induced by observational learning, and this may be due to the fact that from the perspective of struggle for survival, any information about such an aversive and threatening experience as pain might be valuable regardless of the source it comes from

ADDITIONAL INFORMATION

- ✓ The authors are supported by the National Science Centre in Poland within grant no. 2014/14/E/HS6/00415
- ✓ The study protocol was approved by the Research Ethics Committee at the Institute of Psychology of Jagiellonian University, Kraków, Poland.
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