Personality Correlates of Pain and Nociceptive Sensitivity: The Control Subscale of the Constraint Trait

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Measurement of Pain / Nociception

- **Pain**
  - **Pain Threshold**
  - **Pain Tolerance**
  - **Pain Variable**
    - **Pearson’s r**
    - **Semi Partial Correlation:** Controlling for Social Desirability (sr)

- **NFR**
  - **NFR Threshold**
  - **NFR Window Baseline**

Results: Correlation Analyses of Variables with Control

- **Pain Variable**
  - **Pearson’s r**
  - **Semi Partial Correlation:** Controlling for Social Desirability (sr)

Data Analysis

- **Pearson’s r** correlations were conducted to examine the relationship between Control and pain and nociceptive sensitivity variables.
- **Semi-partial correlations** (sr) were used to control for social desirability.
- The following table shows these correlations.

Conclusions

- **Results** show a significant positive correlations between Control and NFR threshold and pain tolerance.
- These associations remained even after controlling for social desirability, and a significant correlation with pain threshold emerged.
- These results suggest that persons who are reflective, cautious, careful, and planning (characteristics associated with higher Control scores) have a lower sensitivity to pain.
- This effect may be due to descending modulatory circuits because Control correlated with NFR threshold (a measure of spinal nociception).

Participants

- **68 Healthy Volunteers**
  - **Characteristics:** 27 Men, 41 Women; White non-Hispanic (78%), single (73%), and employed (79%); average age = 28.14 yrs (SD = 11.25).

Exclusion Criteria:

- < 18 years of age
- Current acute illness
- Cardiovascular, neurological, and/or circulatory problems
- Recent use of analgesic, antidepressant, anxiolytic, or antihypertensive medication
- Recent psychological trauma
- Specific phobias of snakes or spiders
- Chronic pain condition
- Raynaud’s disease

Procedure

- **Consent + Health Screening + Electrode application**
- **5 min rest:** Heart Rate Variability Recording
- **Emotional modulation of startle (data not relevant to present study)**
- **Pain/Nociceptive Sensitivity Assessment**
  - **NFR Threshold Assessment**
    - **NFR Threshold Rating:** Ratings of stimuli corresponding to NFR Threshold
  - **Pain:** Ascending series of 0.5 mA stimuli presented, threshold = first stimulus (in mA) rated ≥ 100 on rating scale
  - **Pain Tolerance:** Ascending series continued until pain rating of 100 achieved or maximum intensity (20 mA) reached
- **McGill Pain Questionnaire Administered (MPQ Sensory & MPQ Affective ratings)**
- **Emotional modulation of nociception (data not relevant to present study)**

Questionnaires

- **Multidimensional Personality Questionnaire short-form**
  - **Control subscale:** measures reverse of impulsivity
    - **Unlikely Virtues** subscale: measures social desirability
    - In a cross-validation sample the MPQ short-form was positively correlated with the original MPQ on the Constraint scale (.94)
  - **Internal consistency estimates** (Cronbach’s α) for the Control scale in the MPQ short-form was .74, and .83 in the original MPQ

- **McGill** pain questionnaire
  - **Administered after the pain tolerance phase of the assessment**
  - Used to assess subjective pain experience (sensory, affective, present pain index, VAS) of pain sensitivity testing

Introduction

- **Constraint** is a personality trait associated with harm avoidance, high moral standards, and level-headedness, and persons who score high on the Control subscale of Constraint are described as reflective, cautious, careful, and planning. This study assessed the influence of Control on behavioral (pain threshold, pain tolerance), physiological (NFR threshold), and subjective (pain ratings, McGill Pain Questionnaire) pain outcomes.

Objective

- To determine if Control relates to measures of pain and nociceptive sensitivity

Conclusions

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- These associations remained even after controlling for social desirability, and a significant correlation with pain threshold emerged.
- These results suggest that persons who are reflective, cautious, careful, and planning (characteristics associated with higher Control scores) have a lower sensitivity to pain.
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