Dispositional optimism is not associated with conditioned pain modulation of electric pain
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Introduction
Dispositional optimism refers to a general belief in positive future outcomes. Conditioned pain modulation (CPM) is a way to examine endogenous pain inhibition and involves the use of a painful stimulus to inhibit pain at another body site. Past research has looked at the impact of a cold pressor paradigm on pressure pain thresholds in healthy individuals. The past study further examined the effect of CPM and its relationship to dispositional optimism. The results of this past study indicated that individuals who reported greater dispositional optimism had enhanced CPM.

Objective
To determine whether dispositional optimism is related to conditioned pain modulation

Participants
- Healthy Participants: N = 28
  - Participant Characteristics: Male (62.1%), White, non-Hispanic (94.5%), average age = 32 years (SD=13.6)
- Exclusion Criteria:
  - <18 yrs of age
  - Cardiovascular, neurological, circulatory problems
  - Chronic pain condition (e.g., back pain)
  - Recent use of anagetic medication
  - Current use of, anxiolytic, antidepressant, and/or antihypertensive medication

Procedure
- Participants signed informed consent
- Participants completed the Life Orientation Test--Revised questionnaire
- Electrode applied to the ankle of all participants
- Participants underwent CPM and CPM Sham experimental procedures
  - Electric stimulations were delivered to the sural nerve before, during and after placing hand in water

Life Orientation Test--Revised
- The LOT-R assesses generalized positive outcome expectancies
- The LOT-R consists of ten items (6 self report items plus 4 filler items)
- 3 negatively worded items (eg, "I hardly ever expect things to go my way"), 3 positively worded items (eg, "I'm always optimistic about my future")
- Each rated on a 5-point scale ranging from 0 (strongly disagree) to 4 (strongly agree)
- Higher scores indicate higher optimism

Methods: CPM and CPM Sham

3 phases of CPM Sham
- Pre CPM Sham: 5 stimulations delivered and rated (2 minute break)
- Conditioning: 5 stimulations delivered and rated while participants placed their non dominant hand in painfully cold water [10°C] (5 minute break)
- Post CPM: 5 stimulations delivered and rated

3 phases of CPM Sham
- Pre CPM Sham: 5 stimulations delivered and rated (2 minute break)
- CPM Sham: 5 stimulations delivered and rated while participants placed their non dominant hand in non-painfully warm water [26°C] (5 minute break)
- Post CPM Sham: 5 stimulations delivered and rated

Results

- A significant interaction of CPM Phase x Test was found (p=.002)
- This indicated pain ratings were lower during the cold pressor task and sham than before or after it, but that pain ratings were decreased to a greater degree by the cold pressor than the sham

Data Analysis
- Prior to analyses, a median split was used to divide participants into high and low optimism groups

Conclusion
- These results provide further evidence for the utilization and efficacy of CPM.
- These preliminary data also suggest that optimism does not affect the degree of CPM-related inhibition of electric pain.

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