Pain catastrophizing and experimental pain in Native Americans

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Introduction

Pain catastrophizing is a cognitive-emotional coping strategy associated with enhanced pain. Unfortunately, little work has been done to examine catastrophizing and its relationship to pain within ethnically diverse individuals, including Native Americans. We have found that Native Americans have damped pain responses in pain and laboratory tests, but it is unclear whether this is related to individual differences in pain catastrophizing. To address this issue, the present study examined pain catastrophizing and its relationship to pain within diverse individuals, such as ischemic sensory and affective pain ratings.

Objectives

To examine pain catastrophizing in Native Americans relative to a white, non-Hispanic control group.

Participants

- Healthy white, non-Hispanic (N = 20) & Native American (N = 22) control group.

Experimental Procedure

- Conceived isometric power - Pain Catastrophizing Questionnaire (PCS)
- Ischeamic Pain Threshold/Tolerance Testing:
  - Participants completed a set of hand exercises to increase energy demand in the forearm muscles.
  - Blood pressure cuff inflated to 150 mm/Hg.
  - 15 sec. of arm elevation for exsanguination.
  - EMG signals were measured.
  - Muscle activity was measured.
  - Pain threshold was defined as the time (in sec.) when participant rated ischemic pain as painful (rating = 100).

- Electric Pain Threshold/Tolerance:
  - NFR: Threshold was defined as the stimulus intensity (mA) that reliably elicited the reflex.

- Ischamia Pain Threshold/Tolerance:
  - Threshold was defined as the time (in sec.) when participant rated ischemic pain as painful (rating = 50).
  - Pain was rated continuously.

Results: Pain Catastrophizing and Pain Outcomes

- State and trait catastrophizing were positively correlated with affective ratings of electric and ischemic stimuli.
- State catastrophizing was also positively correlated with retrospective reports of pain in Native Americans.

Conclusions

- In sum, these findings confirm prior research indicating that state catastrophizing is a better predictor of pain than trait catastrophizing.
- Catastrophizing is more strongly related to retrospective reports of pain (e.g., affective ratings) than other measures (e.g., pain threshold).
- These findings also suggest there may be ethnic differences in the relationship between catastrophizing and pain in Native Americans.

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