

A Perspective-Taking Manipulation Leads to Greater Empathy and Less Pain During the Cold Pressor Task

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Abstract: The objectives of this study were to demonstrate that empathy and validation could be increased in an observing partner who received a brief perspective-taking manipulation, resulting in less pain severity and greater pain tolerance in their partner, who experienced experimental pain. In addition, we examined the correlations between perceived empathy/validation and behavioral ratings of validation and invalidation. In 126 pain-free romantic couples, 1 partner was randomly assigned to complete the cold pressor task while the other observed. The couples were randomly assigned to a) a perspective-taking group in which observing partners were privately instructed to take the perspective of the pain participant; or b) a control group in which observing partners received only a description of the task. Compared with the control group, pain participants in the perspective-taking group reported that observing partners had been more validating during the task and they also reported significantly lower pain severity. In addition, pain participants' reports of their partners' validation and observing partners' self-reported empathic feelings were significantly related to lower pain severity over time. The results provide support that perspective taking may induce empathic feelings, in addition to perceptions of validation, which in turn promotes emotion regulation during pain.

Perspective: *The experimental evidence in this study suggests that empathic feelings can be induced in significant others with simple instructions, and this manipulation leads to less pain in their partners undergoing a painful task. The results suggest that perspective taking, empathy, and validation should be further investigated as pain intervention targets.*

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Key words: Couples, pain, empathy, validation, perspective taking, cold pressor.

K rahé et al²⁴ have made a compelling case for more research on the social modulation of pain. One potential interpersonal process that may affect pain is empathy, a sense of knowing the experience of another person.¹⁷ Emotional validation, which is a behavioral attempt to convey empathy as well as understanding and acceptance of another person's experience,¹⁵ has been identified as a construct that may contribute to health and well-being in people with pain.^{1,17} Researchers have begun to examine the determinants and effects of empathy and validation with an eye

toward developing interventions for people with pain as well as their loved ones.^{7,8,11,19} However, the hypothesis that empathy and validation might lead to less pain has not been fully tested. In fact, the operant model makes the opposite prediction—that empathy and validation of pain may reinforce pain behaviors, leading to an increase in pain and behavioral avoidance.^{14,45} The purpose of this study is to determine whether empathic feelings and validation can be systematically increased to result in less pain and improved tolerance during a painful task, thus supporting the further investigation of empathy and validation as intervention targets.

In the literature on close relationships, empathy and validation are thought to contribute to intimacy^{28,40,44} and promote emotion regulation during distress.¹⁵ There is empirical support for the benefits of validation on marital satisfaction, mood, and pain.^{3,6,7,13,32,46} Researchers have begun to explore methods of manipulating empathy and validation to improve health and well-being. In a recent study, partners of people with chronic pain received training on validation for 45 minutes, which included instructions on how to

Received March 6, 2015; Revised July 27, 2015; Accepted August 11, 2015.
Research funding was provided by the Wayne State University Graduate School and Psychology Department. To our knowledge, we have no relationships, financial or otherwise, that would produce a conflict of interest.

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<http://dx.doi.org/10.1016/j.jpain.2015.08.006>

validate and addressed potential barriers.¹¹ In a subsequent discussion with the person with pain, partners demonstrated significantly more validation and less invalidation than control couples who had a discussion. Empathic feelings and validation behaviors may also be enhanced by directing others to take the perspective of the person with pain. In social psychological research, a brief paragraph (eg, 50 words) that instructs participants to imagine how the other person feels¹ has been shown to increase empathic feelings, other-oriented distress, and altruistic motivation and behaviors.² This strategy has also been used in the context of empathy for physical pain.^{20,26} This is a promising method to promote empathy and validation in the context of pain.

The current multi-method experimental study was designed to test the extent to which a perspective-taking instruction compared with no instruction would result in both greater felt empathy among observing partners and greater perceived validation among participants undergoing a painful experience (ie, the cold pressor task). The manipulation was also expected to result in lower pain and greater pain tolerance in the person in pain, possibly due to the emotion regulation benefits of validation and empathy. In addition, greater empathy and validation were expected to be associated with less pain during the task. Thus, this study offers an opportunity to contrast the operant model¹⁴ with intimacy process models of pain.⁹ The correlations between perceived validation rated by the person in pain, felt empathy reported by observing partners, and external ratings of the observing partners' validation and invalidation behaviors were also examined; these analyses were secondary given that this is the first time a behavioral coding system has been used to assess romantic partner validation in an acute pain study. Portions of this study were presented at the 2013 American Pain Society Annual Scientific Meeting.³¹

Methods

Participants

The participants were 126 romantic couples, consisting of 126 undergraduate psychology students at a large Midwestern university and their romantic partners. Couples were eligible if they both denied chronic pain, blood circulation problems, and diabetes. The person who completed the cold pressor pain task is henceforth referred to as the "pain participant," and the other participant is referred to as the "observing partner." With respect to demographics, women comprised 52% ($n = 65$) of the pain participants and 50% ($n = 63$) of the observing partners. The pain participants self-reported their ethnicity as follows: approximately 42% ($n = 53$) White; 26% ($n = 33$) African American; 12% ($n = 15$) Arab; 6% ($n = 8$) Hispanic/Latino; 6% ($n = 8$) Asian; and 7% ($n = 9$) as Other. The distribution was generally similar for observing partners (White 39%, $n = 49$; African American 29%, $n = 36$; 13% Arab, $n = 16$; Asian 7%, $n = 9$; Hispanic/Latino 2%, $n = 2$; Other 11%, $n = 14$). The mean age of the pain participants was 22.19 years ($SD = 5.51$ years),

similar to the mean age of the observing partners (mean = 22.06 years, $SD = 5.70$ years). On average, the pain participants and observing partners had completed some college (mean = 14.26 years, $SD = 1.59$ years; mean = 14.37 years, $SD = 1.54$ years, respectively). Relationship duration was highly variable, and ranged from 1 month to 14 years, with an average of 25.41 months ($SD = 25.21$ months) and a median of 21 months. Two of the couples (1.6%) were in same-sex relationships.

Procedure

This study was approved by the university's institutional review board. Participants were recruited via the Psychology Department's online research participation system (SONA Systems), which described the study as investigating how couples cope with acute stress. Couples came into the laboratory for a 1-hour session. Each partner completed a consent form. At the start of the study, couples were randomized to either the perspective-taking group or the control group, and participants within couples were randomized to be either the pain participant or the observing partner using an online randomizing tool (www.randomizer.org), which simultaneously randomized couples and participants. The participants did not know that there were separate perspective-taking and control groups until they were debriefed at the end of the study.

Fig 1 depicts the procedure followed by the pain participants and observing partners. Each person was given a private room to complete an assessment of demographic characteristics and baseline perspective taking and empathy. The last page of the survey packet had written instructions specific to each participant, including an explanation of who would be completing the cold pressor task and who would be the observing partner; this was the time at which participants were made aware of the within-couple randomization status.

Control Group Instructions and Perspective-Taking Manipulation

The instructions to the observing partners varied by experimental group. In the control group, the instructions to the observing partner simply described the task: "Soon, your partner will do the cold water task. You may interact with your partner as much or as little as you like. Your partner will put his or her hand into a bin of very cold water, 6°C, which is equivalent to 43°F. While this task may cause some pain, it is temporary and will end shortly after he or she removes his or her hand from the bin. Please wait for additional instructions from the experimenter." In the perspective-taking group, the instructions to the observing partner included the instructions given to the control partners, with 1 additional paragraph, the perspective-taking manipulation (similar to instructions used by Batson et al¹ with the addition of instructions used by Lamm et al in a pain empathy study,²⁷ adapted for romantic partners): "During the task, please try to imagine how your partner feels about what is happening. Concentrate on how your partner feels while doing the painful cold water task and

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