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Pain tolerance, pain sensitivity, and accessibility of aggression-related schemata in parents at-risk for child physical abuse

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ABSTRACT

This study examined whether parents with varying degrees of child physical abuse (CPA) risk differed in pain tolerance, pain sensitivity, and accessibility of aggression-related schemata. Participants included 91 (51 low CPA risk and 40 high CPA risk) general population parents. Participants were randomly assigned to complete either an easy or a difficult anagram task. Pain tolerance and pain sensitivity were assessed using a cold pressor task. Accessibility of aggression-related schemata was assessed at the outset of the data collection session and at the end of the session using a word completion task. Parents' self-reported negative affect was assessed three times over the course of the study: baseline, after the anagram task, and after the cold pressor task. As expected, high-risk (compared to low-risk) parents reported higher levels of negative affect at each time point. Moreover, after completing the difficult anagram task, high-risk (compared to low-risk) parents exhibited higher pain sensitivity during the cold pressor task. Following completion of the cold pressor task, high-risk (compared to low-risk) parents exhibited greater accessibility of aggression-related schemata. Collectively, these findings indicate that under certain conditions, high-risk parents experience a confluence of aggression-related risk factors (i.e., negative affect, pain sensitivity, and aggression-related information processes) that may predispose them to aggressive behavior.

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Introduction

The "joys" of parenting often include routine exposure to aversive events, such as loud prolonged crying, stinky diapers, soiled bedding/clothing, biting, and hair pulling. According to the cognitive-neoassociationistic model of aggression, such aversive events are believed to trigger negative affect, which in turn may activate ideas, memories, and physiological states that increase the likelihood of anger and aggression (Berkowitz, 1990, 2012). Indeed, considerable research supports the notion that exposure to painful, unpleasant events increases negative affect, accessibility of aggression-related schemata, and aggressive behavior (Berkowitz, 1993).

Yet, as the cognitive-neoassociationistic model points out, exposure to aversive events does not inevitably lead to anger and/or aggressive behavior. A number of factors (e.g., higher-order cognitive processes and/or self-regulation skills) also influence the expression of anger/aggression following exposure to an aversive event (Berkowitz, 1990). Thus, the

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cognitive-neoassociationistic model allows for the fact that there are individual difference variables that influence how aversive events are experienced and the degree to which such events increase accessibility of aggression-related schemata.

So why is it that some parents are able to manage aversive caregiving experiences without becoming aggressive, while other parents lash out at their children with anger and aggression? According to the social information processing (SIP) model of child physical abuse (CPA; Milner, 1993, 2000), aggression-related information structures (i.e., schemata) are more readily accessible among at-risk and abusive parents. Once activated (e.g., by exposure to an aversive event) these preexisting schemata influence other information processing components in a manner that further increases risk of aggression. More specifically, activation of aggression-related schemata may result in: (a) perceptual biases that favor aggression-relevant stimuli (Bargh & Pratto, 1986; Bargh & Thein, 1985), (b) encoding of ambiguous information in more negative terms (Crouch et al., 2010; Zelli, Huesmann, & Cervone, 1995), (c) hostile interpretations of ambiguous others (Farc, Crouch, Skowronski, & Milner, 2008), (d) greater feelings of hostility (Crouch, Skowronski, Milner, & Harris, 2008) and/or (e) increased aggressive behavior across situations (Carver, Ganellen, Froming, & Chambers, 1983; Crouch et al., 2008). Indeed, activation of aggression-related schemata may automatically trigger aggressive behavioral responses, even in the absence of intervening influences from other interpretive processes (Dijksterhuis & Bargh, 2001).

Thus, according to the cognitive-neoassociationistic model and the SIP model of CPA, aversive experiences (e.g., a painful bite) would be especially likely to elicit aggression-related thoughts among high-risk parents given that their aggression-related schemata are highly accessible. To test this possibility, the present study assessed the accessibility of aggression-related words before and after exposure to an aversive event (i.e., placing one hand in painfully cold water) among parents with a range of CPA risk. Based on the research reviewed above, it was predicted that accessibility of aggression-related words would be greater for high CPA risk parents, compared to low CPA risk parents, and that this difference would be greatest after exposure to an aversive event.

In addition to experiencing greater accessibility of aggression-related schemata following an aversive event, it may be the case that high-risk parents exhibit greater discomfort and lower pain tolerance when exposed to aversive events. Several studies provide evidence indicating that high-risk, compared to low-risk, mothers display greater physiological arousal (i.e., heart rate, skin conductance) in response to a variety of stressors (e.g., cold pressor task, a stressful film; e.g., Casanova, Domanic, McCanne, & Milner, 1992). Moreover, McElroy and Rodriguez (2008) reported that parents at higher risk for CPA tended to quit an aversive task (i.e., an unsolvable maze) sooner than low CPA risk parents. Based on these findings, we predicted that high-risk, compared to low-risk, parents would report higher pain sensitivity (i.e., rate a painful task as more painful) and exhibit lower pain tolerance (i.e., withdraw from a painful task sooner) when exposed to a physical stressor (i.e., cold pressor task).

Of course, aversive caregiving events do not occur in a vacuum. Indeed, ecological and transactional models of child maltreatment emphasize the need to consider how various types of risk factors combine to influence parenting behavior (e.g., Belsky, 1980; Cicchetti & Rizley, 1981). For example, the presence of other types of stressors (e.g., problems in adult relationships, challenges at work) may further potentiate pain sensitivity, pain tolerance, and/or accessibility of aggression-related schemata during challenging moments in parenting. Although all parents have "bad days," it is noteworthy that high CPA risk parents exhibit higher levels of interpersonal sensitivity (Wiehe, 2003) and they may experience social stressors (e.g., negative remarks by others) as particularly aversive (Crouch et al., in press). Thus, social stressors (e.g., receiving negative feedback about one's performance) may compromise one's ability to cope with subsequent aversive events (e.g., exposure to painfully cold water), leading to especially low levels of pain tolerance, higher pain sensitivity, and increased accessibility of aggression-related schemata among high CPA risk parents.

In summary, the present study examined whether parents with varying degrees of CPA risk differed in pain tolerance, pain sensitivity, and accessibility of aggression-related schemata. More specifically, parents were exposed to two potentially aversive events (a social stressor and a painful task). The social stressor involved solving a series of anagrams under time pressure. Half of the participants received difficult anagrams and were led to believe that they had performed poorly on this task, whereas the remaining participants were given easy anagrams and were led to believe that they had performed well on the task. The anagram task was followed by a task designed to induce pain (i.e., the cold pressor task). The cold pressor task involved immersing the nondominant hand up to the wrist in a tub of cold water (i.e., 1 to 2 °C) and leaving it immersed until it was too uncomfortable to continue. Participants were asked to provide verbal pain ratings every 15 s during the cold pressor task. The length of time the participant left their hand in the water served as an index of pain tolerance, and pain ratings were used as an index of pain sensitivity. To examine changes in accessibility of aggression-related schemata, participants were asked to complete a word completion task before the anagram task and after completion of the cold pressor task. The proportion of word completions that were classified as aggressive words served as an index of accessibility of aggression-related schemata. We hypothesized that:

Hypothesis 1. Compared to low CPA risk parents, high CPA risk parents would evince lower levels of pain tolerance during the cold pressor task, and this difference would be greatest when the cold pressor task was preceded by the difficult anagram task.

Hypothesis 2. Compared to low CPA risk parents, high CPA risk parents would evince higher levels of pain ratings during the cold pressor task, and this difference would be greatest when the cold pressor task was preceded by the difficult anagram task.