Do emotion regulation difficulties explain the association between executive functions and child physical abuse risk?

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ARTICLE INFO

Keywords:
Child Abuse Potential Inventory
Working memory
Inhibition/switching
Emotion regulation
Parenting

ABSTRACT

This study examined the associations between executive functioning problems, emotion regulation difficulties, and risk for perpetrating child physical abuse (CPA). It was hypothesized that: (a) poor executive functions (i.e., working memory problems and inhibition/switching problems) would be associated with higher levels of emotion regulation difficulties and CPA risk; (b) emotion regulation difficulties would be positively associated with CPA risk; and (c) emotion regulation difficulties would partially explain the association between executive functions (i.e., working memory problems and inhibition/switching problems) and CPA risk. To examine these predictions, a sample of 133 general population parents (31% fathers) completed self-report measures of CPA risk, emotion regulation difficulties, working memory problems, and a performance-based measure of inhibition/switching skills. Results revealed that executive functioning problems were linked with emotion regulation difficulties, which in turn were associated with CPA risk. Moreover, emotion regulation difficulties explained the relationship between executive functions (working memory, inhibition/switching) and CPA risk. The final model accounted for 41% of the variance in CPA risk. Although additional research is needed, the present findings suggest that enhancing parents’ executive functioning and teaching them effective emotion regulation skills may be important targets for CPA prevention efforts.

1. Introduction

According to Wildeman et al. (2014), cumulative prevalence estimates suggest that over 10% of children in the U.S. will be the subject of a confirmed case of maltreatment by age 18. Unfortunately, confirmed cases of child maltreatment represent only the tip of the iceberg, as most cases of child abuse and neglect go undetected by authorities (Gilbert et al., 2009). Among confirmed child maltreatment cases nearly 20% of cases involve child physical abuse (CPA), which is defined as any action taken by an adult that results in nonaccidental injury to a child. Given that CPA is most often perpetrated by the victim’s parent(s) (U.S. Administration for Children & Families, 2018), parental risk factors for CPA have been the subject of considerable research designed to inform prevention and intervention practices (for a review see Stith et al., 2009).

Of the various models that attempt to explain the occurrence of CPA (for a review see Milner & Crouch, 1999a, 1999b), cognitive/information processing models have received considerable attention (Azar, Reitz, & Goslin, 2008; Bugental & Johnston, 2000; Milner, 1993; Milner, 2000). According to Milner’s Social Information Processing (SIP) model of child physical abuse, physically abusive parents have risk potentiating, pre-existing schemata that influence the way they process (i.e., perceive, interpret, evaluate) and
respond to situations involving children (Milner, 1993, 2000). In keeping with the SIP model, research indicates that physically abusive/high-risk parents, compared to non-abusive/low-risk parents, (a) form more negative/less positive representations of children (e.g., McCarthy, Wagner, Basham, & Jones, 2016), (b) attribute more hostile intent to misbehaving children (e.g., Irwin, Skowronska, Crouch, Milner, & Zengel, 2014), (c) are less likely to adjust responses when mitigating information is present (e.g., De Paúl, Asla, Pérez-Albéniz, & De Cádiz, 2006; Irwin et al., 2014), and (d) exhibit more negative/aggressive parenting behavior (e.g., Dolz, Cerezo, & Milner, 1997; Lahey, Conger, Atkeson, & Treiber, 1984; Rodriguez, 2010).

In addition to the emphasis on risk-potentiating information processes, Milner (2000) noted that affective states (e.g., depression, anger) may influence the various stages of the SIP model (e.g., interpretations, attributions, response selection). Indeed, the interplay between information processing activities and negative affective states is generally considered to be bi-directional (Berkowitz, 1990; Segal, Williams, & Teasdale, 2002). For example, cognitive processes (such as negative evaluations, hostile intent attributions, and low perceived control) may increase negative affective states—such as annoyance, anger, and distress (e.g., Slep & O’Leary, 1998; for a review see Beck, 1999). Alternatively, negative affect may prime patterns of negative evaluations/interpretations of events. For example, Pidgeon and Sanders (2012) found that parents who reported clinically elevated levels of anger (compared to parents without clinically elevated anger) rated children’s negative behaviors and ambiguous behaviors as more stable, intentional, and blameworthy, and they reported engaging in higher levels of harsh/coercive parenting practices.

Relatively, research suggests that negative affect is often a precursor to harsh/coercive parenting behavior (e.g., Ateah & Durrant, 2005; Holden, Coleman, & Schmidt, 1995). For example, Ateah and Durrant (2005) surveyed a sample of mothers regarding their use of physical punishment during the past two weeks and found that maternal anger was a significant predictor of use of physical discipline (even after controlling for parental belief in the value of corporal punishment and perceptions of the seriousness/intent of the child’s misbehavior). Moreover, at-risk and abusive parents, compared to low-risk, nonabusive parents, tend to obtain higher scores on measures of dispositional negative affect (e.g., anger, Francis & Wolfe, 2008; depression and hostility, Mammen, Kolko, & Pilkonis, 2002; stress, Rodriguez & Green, 1997). Collectively, these findings suggest that at-risk and abusive parents may have difficulty regulating their affective states; however, only limited research has examined the role of emotion regulation in CPA risk.

1.1. Emotion regulation

Emotion regulation has been broadly defined as any internal or external process involved in initiating, maintaining and modulating the occurrence, intensity and expression of emotions (Thompson, 1994). Gross (1998) proposed that effective emotion regulation allows one to control when, where, and how one experiences or expresses emotions. According to Gratz and Roemer (2004), emotion regulation requires a number of interrelated skills, including (a) awareness – and acceptance – of one’s emotional experiences, (b) the ability to control impulsive behaviors in order to behave in a manner that is consistent with one’s goals, and (c) the ability to flexibly switch emotion regulation strategies as situational demands change.

In the general aggression literature, emotion regulation skills have been linked with aggressive behavior (for a review see Robertson, Daffern, & Bucks, 2012). In the parenting literature, emotion regulation difficulties tend to be associated with lower levels of sensitive/warm parenting behaviors and higher levels of harsh parenting behaviors (e.g., for reviews see Bridgett, Burt, Edwards, & Deater-Deckard, 2015; Crandall, Deater-Deckard, & Riley, 2015; Rutherford, Wallace, Laurent, & Mayes, 2015); however, few studies have examined emotion regulation skills in relation to child physical abuse risk. In a recent study, Espinosa, Ruglass, Dambreville, and Shevorykin (2017) found that alexithymia (i.e., difficulty identifying and expressing emotional states) was a significant predictor of CPA risk. Moreover, Smith, Cross, Winkler, Jovanovic, and Bradley (2014) found that self-reported emotion regulation difficulties and negative affect explained the association between retrospective reports of childhood abuse (i.e., physical, sexual, or emotional abuse) and child physical abuse potential. In their review of the literature examining the role of emotion regulation in parenting, Rutherford et al. (2015) concluded that emotion regulation plays an important role in effective parenting, and they posited that parental emotion regulation abilities depend, at least to some degree, on executive functioning skills.

1.2. Executive functions

Executive functions are a collection of higher-order cognitive processes (e.g., working memory, inhibition/switching) that support cognitive, emotional, and behavioral regulation (Hofman, Schmeichel, & Baddeley, 2012; Miyake et al., 2000). For example, working memory allows information to be temporarily stored, updated, and manipulated; abilities which support cognitive processing, emotion regulation, and goal-directed behavior (Baddeley, 1998). Inhibition/switching involves controlling impulses and/or resisting overlearned/automated responses, allowing one to flexibly switch the focus of thoughts/emotions/behaviors. Inhibition/switching skills are thought to play a role in regulating emotional expression (Carlson & Wang, 2007), particularly expression of negative affect (Bridgett, Oddi, Laake, Murdock, & Bachmann, 2013). According to Rutherford et al. (2015), parents with poor executive functioning (e.g., working memory problems, inhibition/switching problems) may have difficulty regulating their emotions and may struggle to plan, evaluate and modulate their parenting behavior.

Indeed, a growing literature supports the notion that executive functions influence how parents respond to children. For example, Deater-Deckard, Sewell, Petrill, and Thompson (2010) examined mothers’ working memory, verbal skills, and spatial abilities, and also observed each mother in separate interactions with two of her children. Results revealed that differences between siblings in observed challenging behaviors (i.e., oppositional behaviors and distractibility) were predictive of differences in the mother’s negativity during the parent-child interactions; however, this effect was apparent only among mothers with low working memory. This pattern of results was interpreted as suggesting that mothers’ “reactive negativity” to challenging child behaviors was apparent only
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