

The Impact of Parenting on Emotion Regulation During Childhood and Adolescence

Amanda S. Morris,¹ Michael M. Criss,¹ Jennifer S. Silk,² and Benjamin J. Houlberg³

¹Oklahoma State University, ²University of Pittsburgh, and ³Fuller Graduate School of Psychology

ABSTRACT—*Regulating emotions well is critical for promoting social and emotional health among children and adolescents. Parents play a prominent role in how children develop emotion regulation. In 2007, Morris et al. proposed a tripartite model suggesting that parents influence children's emotion regulation through three mechanisms: children's observation of parents' emotion regulation, emotion-related parenting practices, and the emotional climate of the family. Over the past decade, we have conducted many studies that support this model, which we summarize here along with other research related to parenting and emotion regulation. We also discuss recent research on the effects of parenting on the neural circuitry involved in emotion regulation and highlight potential directions for research. Finally, we suggest how this research can aid prevention and intervention efforts to help families.*

KEYWORDS—*emotion regulation; parenting; child and adolescent development*

Children's ability to regulate emotions effectively is a developmental skill essential for maintaining successful relationships with peers and family, academic success, and mental health

Amanda S. Morris and Michael M. Criss, Oklahoma State University; Jennifer S. Silk, University of Pittsburgh; Benjamin J. Houlberg, Fuller Theological Seminary.

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Correspondence concerning this article should be addressed to Amanda S. Morris, Department of Human Development and Family Science, Oklahoma State University, Main Hall 2104, Tulsa, OK 74106; e-mail: amanda.morris@okstate.edu.

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(1, 2). One of the most influential forces in the development of emotion regulation is children's parents (3–5). In 2007, Morris et al. (6) published a tripartite model on the impact of the family on children's emotion regulation and adjustment. According to the model, parents influence children's emotion regulation through three mechanisms: children's observation of parents' emotion regulation (e.g., modeling, social referencing, emotion contagion), emotion-related parenting practices (e.g., emotion coaching, reactions to emotions), and the emotional climate of the family (e.g., attachment, parenting style, emotional expressivity, family relationships). Guided by this conceptual framework, we and others have examined the influence of parenting on emotion regulation. Our work has focused on low-income, minority children and families because families living in poverty are at heightened risk for problems such as dropping out of school, depression, anxiety, and antisocial behavior (7). Because emotion regulation is an essential developmental task, improving emotion regulation is a leverage point for intervention and prevention programs.

In this article, we begin by defining emotion regulation and by describing how it is typically measured in studies of children and adolescents. In the next two sections, we discuss research on the effects of parenting on children's emotion regulation, highlighting the parent–child relationship and parenting practices associated with emotion regulation. We end with a discussion of recent research on the effects of parenting on the neural circuitry involved in emotion regulation, and highlight directions for research as well as for prevention and intervention programs.

DEFINING AND MEASURING EMOTION REGULATION

Guided by the work of Thompson (8) and Eisenberg and Morris (2), we define emotion regulation as the process of modulating the occurrence, duration, and intensity of internal states of feeling (both positive and negative) and emotion-related physiological processes. Emotion regulation is often a dyadic process



involving both internal and external components that occur in the context of the parent–child relationship (9). The *internal* components refer to neurobiological processes and cognitive strategies children use to manage their emotions, such as shifting attention, cognitive reframing, and arousal modulation (2). However, because children, and to some extent adolescents, do not always have the neurobiological and cognitive capacities necessary to regulate their emotions on their own (10), they often depend on *external* resources, such as parents, to help them.

Researchers assess emotion regulation using several methods, including observation, reports by self and others, and physiological indicators. For example, observational research often focuses on coding expressed affect (11) and emotion-regulation strategies during tasks involving social interaction (12, 13). Researchers also assess perceptions of emotionality and regulation using questionnaires (14) and Ecological Momentary Assessment (EMA), an ecologically valid way to gather data on affect and behavior through signaling devices such as cell phones (15, 16). Another approach to assessment is measuring physiological indicators such as vagal tone, heart rate variability, and neurobiological responses to emotional stimuli (17, 18).

THE PARENT–CHILD RELATIONSHIP AND EMOTION REGULATION

The emotional climate of the family is reflected in family relationships, the parent–child relationship, parenting styles, the attachment relationship, and emotionality in the home (6). A secure parent–child relationship helps children feel supported and emotionally safe (e.g., free to express emotions) and is a prerequisite for regulating emotions effectively (19). Emotional climates in which children feel closeness and warmth help them express their emotions more comfortably (20). Furthermore, maternal emotion and cognitive regulation are associated with involved and responsive parents (21), who are more likely to recognize their children’s emotional cues and respond supportively (4). In addition to warmth and support, positive parenting is often accompanied by clear rules and limits that help children know what to expect regarding emotional expression in the home (authoritative parenting; see 4 for a review). This helps children express emotions in socially acceptable ways (e.g., “anger is okay, but hitting is not”), and increases emotional security because children know what to expect (22).

Across many studies, our work has demonstrated consistently that emotional support is associated with more effective emotion regulation. For example, in a study of children from military families (23), youth’s perceptions of both mothers’ and fathers’ support were associated with more effective self-regulation (examined as effortful control), and maternal support was associated with fewer conduct problems and emotional symptoms (e.g., internalizing or symptoms of depression and anxiety). Similarly, in another study (24), the quality of the relationship between parent and child (e.g., acceptance, warmth) was positively related to

emotion regulation. And in a study of adolescents exposed to frequent neighborhood violence (20), adolescents’ perceptions of family adaptability and cohesion were associated with anger regulation through parental support, suggesting that cohesive and supportive families promote more effective emotion regulation in high-risk environments (see also 11).

Research also suggests that children may have difficulty regulating their emotions when parents are overly harsh, controlling, or permissive (4). Overly harsh parents often use psychological control (i.e., intrusive control in which parents attempt to manipulate children’s behavior and psychological development) to encourage children to conform to their own desires, which compromises children’s need for autonomy (25). For example, in a study of adolescents from primarily low-income families, parents’ psychological control was associated with greater internalizing and externalizing problems through its effects on adolescents’ anger regulation (26). These findings are consistent with a study (27) in which adolescent anger mediated the link between discipline that was harsh and inconsistent and adolescents’ health.

Studies such as these suggest that one way negative parenting affects children is through its effects on children’s emotion regulation (see 6 for a review). Research also suggests that parenting can have a greater effect on emotion regulation and adjustment for some children. In a study of preschool children, psychological control was more strongly related to internalizing and externalizing problems among children who had high levels of negative emotionality, suggesting that negative parenting may be more harmful for children who have difficulty regulating emotions (25).

Children’s emotion regulation is also affected by how emotions are expressed in the home and in dyadic relationships. Specifically, we have explored the link between parents’ negative and positive affect, and children’s emotion and physiological regulation. For example, using observers’ ratings of young children’s emotions during free play and teaching tasks, parents’ high levels of positive affect (i.e., warmth, smiling) and low levels of negative affect (i.e., anger) were related to positive affect in children (28). Moreover, parents’ anger was positively and significantly related to children’s expression of anger.

These findings are consistent with those of a study (18) that examined respiratory sinus arrhythmia (RSA), an indicator of parasympathetic functioning and cardiac vagal regulation. Parents’ anger (assessed during a discussion between parents and their teenagers that was related to conflict) was associated with lower RSA in their adolescents. Parents’ positive affect was also associated with greater RSA in their adolescents. In other words, adolescents had more optimal cardiac vagal regulation when their parents had high levels of positive affect and low levels of anger during a discussion on conflict. Moreover, in studies using EMA to assess emotion, adolescents generally rated their emotions as more positive and less negative when they interacted with their parents than when they were alone (29).

PARENTING PRACTICES AND EMOTION REGULATION

In addition to examining the parent–child relationship, many studies have focused on emotion-related parenting practices, specific parenting behaviors that teach children about emotions and emotion regulation in response to children’s emotional expressions. Our research has been influenced by the work of Gottman, Katz, and Hooven (30), who proposed that parents who coach their children on emotions—by solving problems, labeling emotions, and comforting children—facilitate successful emotion regulation. This contrasts with parents who dismiss emotions—by ignoring, denigrating, and punishing children for expressing emotions (30). Children and adolescents of parents who coach their children on emotions regulate their emotions more successfully than parents who do not. In a study of adolescents (11), youth who said their parents coached them on dealing with anger and sadness were more successful at regulating their own anger and sadness. These findings are consistent with another study (30) in which parents’ emotion coaching was significantly and positively related to children’s emotion regulation and vagal tone. Moreover, in other research, negative parenting practices such as invalidating feelings are related to low levels of emotion regulation (31).

Another study (32) asked adolescents to report on negative events or problems they experienced and to indicate whether any individuals (parents, peers) helped them deal with their emotions related to the negative event or problem. Both depressed and healthy adolescents reported that their parents helped them manage their emotions in about half the negative events they encountered. This suggests that adolescents rely on their parents for guidance and assistance in regulating emotions through the teenage years.

In contrast to the emotion-coaching factors measured in studies of adolescents, research with younger children (i.e., preschool, early elementary) often focuses on specific strategies of emotion socialization. For example, during a task that elicited disappointment (e.g., a child gets a broken toy when expecting a prize), coders rated three emotion-regulation strategies: attention focusing (e.g., shifting attention away from what is causing the negative emotion), comforting (e.g., physical affection, positive verbalizations), and cognitive reframing (e.g., changing how a situation is interpreted so it is no longer perceived negatively). In cross-sectional and longitudinal analyses using this paradigm, parents’ attention refocusing was associated with less sadness and anger and less externalizing behavior in children (12, 13).

Emotion-regulation strategies in which both child and parent participate actively can also be helpful. For example, joint attention refocusing and joint cognitive reframing were significantly related to less expression of sadness and anger during current and subsequent intervals of the disappointment task (13). Children’s ability to internalize emotion-regulation strategies may be more successful in the context of active learning with a parent.

This is consistent with the concept of joint regulation (33), the idea that children (especially those ages 1–5 years) often depend on their primary caregiver to assist them in regulating emotions and behavior.

PARENTING AND NEUROBIOLOGICAL CIRCUITRY INVOLVED IN EMOTION REGULATION

Researchers have begun to investigate how parenting influences the development and functioning of the neural circuits that underlie emotional reactivity and regulation. Although most studies of contextual influences on the brain have focused on children exposed to early and extreme environmental conditions such as maltreatment or neglect (34), we have been interested in how brain function during childhood and adolescence varies in association with a more typical range of social experiences, such as parents’ warmth and negativity. Several recent studies from our lab and others suggest that variations in parenting, both concurrently and earlier in childhood, are associated with the activation of brain networks that support the experience and regulation of emotions during adolescence.

In terms of structural brain development, in one study (35), parenting characterized by warmth in early adolescence was associated with a pattern of presumably adaptive structural changes in youth’s limbic–striatal brain regions over the next 4 years. In terms of functional brain activity, in another study (36), more maternal warmth during early adolescence predicted greater activation of the striatum during anticipation of rewards in late adolescence for boys at risk for depression. And in a recent study by our group (37), when mothers expressed more negative affect toward their adolescents during a discussion involving conflict, these youth responded less to simulated peer acceptance on the Chatroom Interact Task (a task in which participants are chosen or rejected for a simulated online discussion) across regions of the brain involved in responding to reward (including the amygdala, left anterior insula, subgenual anterior cingulate, and left nucleus accumbens). These findings suggest that exposure to negative parenting may dampen adolescents’ responsiveness to social rewards, even in interactions with other social partners such as peers. This could negatively influence developmental trajectories during adolescence given the critical importance of peers and social interactions during this period (38).

Recently, we examined how the adolescent brain responds to emotional feedback from parents. One study (39) examined healthy brain activation during neuroimaging while adolescents listened to audio clips of their mothers criticizing them and discussing neutral topics such as the weather. When listening to critical comments, activity increased in subcortical–limbic regions, but decreased in regions of the brain that serve cognitive control of emotion, such as the dorsolateral prefrontal cortex and the caudal anterior cingulate cortex. These findings suggest that maternal criticism is processed as emotionally

salient during adolescence, and that typically developing adolescents fail to recruit cognitive control networks to help them regulate emotion when listening to critical comments from their mothers.

In that study (39), maternal warmth was associated with reduced activation to maternal criticism in key regions of the brain involved in self-referential processing, such as the temporoparietal junction and posterior cingulate cortex. This suggests that youth may process criticism as less personally salient in the context of a warm parent–child relationship. Using a similar task with adolescent girls, in another study (17), symptoms of anxiety and depression were associated with a blunted response in the left amygdala to maternal criticism and praise, and an increased response in the right amygdala to criticism. These lateralization findings are interesting given that the right amygdala is thought to be sensitive to negative stimuli (40). Furthermore, response in the right amygdala to maternal feedback was related to the maternal oxytocin receptor (OXTR) genotype, with activity in the right amygdala altered most strongly among adolescents whose mothers had the OXTR AA/AG allele, a genotype associated with less sensitive parenting (41). Overall, these findings highlight potential alterations in the functioning of brain regions that support emotional reactivity and regulation in response to both positive and negative feedback from parents.

CONCLUSION AND NEXT STEPS

Our work and the research of others document the influence of parenting on children’s and adolescents’ emotion regulation. Specifically, research indicates that parents’ emotional support, positive affect, emotion coaching, and use of joint strategies are all associated with more effective emotion regulation in children. In contrast, parents’ psychological control, permissiveness, expressed anger, and criticism are associated with difficulties in emotion regulation in children. Moreover, emotion regulation is one way parenting affects children’s adjustment, and parenting may be particularly influential among children who are emotionally reactive. In addition, adolescents report more positive affect when they are with their parents than when they are alone, and adolescents report that their parents help them regulate emotions, indicating that parents maintain their influence on emotion regulation throughout adolescence.

Our work goes further by demonstrating that parenting is related to children’s physiological and neural responses to emotional stimuli. These findings begin to suggest possible neurobiological mechanisms through which parenting influences children’s emotional reactivity and regulation. These results converge with evidence from studies of animals that document the influence of maternal caregiving on the developing brain early in life through processes such as experience-dependent synaptogenesis and later pruning of synapses (see 32). Other research in animals and humans shows that early

caregiving influences the development of the stress-response systems, such as the hypothalamic pituitary axis, which play an important role in helping children mount responses to emotional challenges (see 42). Recent theory also suggests that children may differ in their susceptibility to the influences of parenting (and other environmental influences) as a function of genetic risk and other endophenotypic factors (43). However, researchers need to demonstrate specific effects of parenting on emotional reactivity and regulation using designs that provide for more effective causal inference, such as parenting interventions that measure children’s emotional reactivity and regulation before and after intervention and that use multi-method approaches.

Since Morris et al.’s (6) theoretical model, the field has expanded to include other factors in the broader context of childrearing that likely shape the development of emotion regulation (11, 44). For example, parents’ self-regulation has been identified as an important predictor of emotion regulation directly (e.g., observational learning) and indirectly (e.g., shaping the family environment). Parents’ characteristics and decisions may lead them to select or create environments that, in turn, influence their children’s emotion regulation (45). Similarly, broader contextual factors such as neighborhood violence influence families’ emotional climate and children’s emotion regulation (11).

We have not found many developmental differences in our work, although most of our studies have been cross-sectional. Nonetheless, much research indicates that parent–infant attachment sets the foundation for emotion regulation in infancy and toddlerhood, and that socialization changes as a function of age (see 2, 19). In addition, some research indicates possible sex differences in the links among family factors, emotion regulation, and expression (44), and certain emotion-socialization efforts may be more salient for boys than for girls and within different dyads (i.e., mother–daughter vs. father–daughter). Moreover, research is limited on the role of fathers in emotion regulation, an important area to study.

The findings we have presented can help practitioners working with parents and families. Intervention and prevention efforts can be aimed at the three primary ways parents affect emotion regulation (e.g., modeling/observation, specific parenting practices related to emotion, and families’ emotional climate). For example, programs can focus on enhancing emotion-regulation skills in parents and teaching parents emotion-coaching techniques (e.g., *Tuning into Kids*). Most standard parenting programs (i.e., *Triple P*, *Incredible Years*, *Strengthening Families*) include a focus on warmth and responsiveness, as well as on setting limits. Such programs inherently enhance the emotional climate of the family, build stronger parent–child relationships, and likely result in more optimal emotion regulation. We believe all families can benefit from such programs, and that families living in poverty and at risk for mental health problems may benefit the most.

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