

Developmental Trajectories of Irritability and Bidirectional Associations With Maternal Depression

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Objective: Irritability is a dimensional trait in typical development and a common presenting symptom in many psychiatric disorders, including depression. However, little is known about the developmental trajectory of irritability or how child irritability interacts with maternal depression. The present study identifies classes of irritability trajectories from toddlerhood to middle childhood; characterizes maternal depression and other family, social environment, and child variables within each irritability trajectory class; and, as a more exploratory analysis, examines bidirectional associations between maternal depression and child irritability. **Method:** A total of 4,898 families from the Fragile Families and Child Wellbeing Study reported on irritability symptoms at ages 3, 5, and 9 years, assessed with items from the Child Behavior Checklist. Parental major depressive episode was assessed using the Composite International Diagnostic Interview–Short Form at child ages 1, 3, 5, and 9 years. **Results:** A latent class growth analysis identified 5 irritability classes: low decreasing; moderate decreasing; high steady; initially very high, then decreasing; and high increasing. Children with more severe irritability trajectories are more likely to have mothers with recurrent depression, and, with the exception of the most severe (high increasing irritability) class, were more likely to have mothers who were exposed to violence. Moreover, paternal depression and alcohol abuse, as well as maternal drug and alcohol abuse, were also risk factors for membership in the more severe irritability classes. A latent auto-regressive cross-lag model showed that child irritability at ages 3 and 5 years is associated with increased mother depression at ages 5 and 9, respectively. Conversely, mother depression at child ages 1 and 3 years is associated with increased child irritability at 3 and 5. **Conclusion:** Irritability development across toddlerhood and middle childhood has 5 main trajectory types, which differ on maternal depression recurrence and exposure to violence. Maternal depression and child irritability influence each other bidirectionally, particularly early in development. Understanding irritability development and its bidirectional relationship with maternal depression and association with violence exposure may help identify intervention targets. *J. Am. Acad. Child Adolesc. Psychiatry*, 2014; 53(11):1191–1205. **Key Words:** irritability, depression, parent, childhood, violence

Irritability is a dimensional trait in typically developing youth¹ as well as a very common presenting symptom in young people with psychiatric disorders. Despite this, little is known about irritability's developmental trajectory or how it varies across individuals. Also, emerging data suggest that social environmental and family factors such as trauma (e.g., exposure to violence)² and particularly maternal depression^{3,4}

may be associated with child irritability. Although clinicians have observed a vicious cycle between child irritability and maternal depression, little empirical work has been done to address the potential impact of child irritability on maternal depression.

Irritability is related to other concepts whose associations with maternal depression have been examined, including child temperament, personality, and psychopathology. For example, a review by Beardslee *et al.*⁵ documented the detrimental effects of maternal depression on the development of child depression and internalizing



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and externalizing disorders, which often include irritability components. In addition, Bongers *et al.*⁶ traced developmental trajectories of aggression and opposition, which are related to irritability. However, because key differences exist between the conceptualization of irritability and these related constructs, for the purposes of this article, irritability is narrowly defined, with a focus on emotional, not “acting out” or behavioral aspects.⁷

Using a person-centered approach to categorize heterogeneity in intraindividual trajectories and to identify developmental pathways for irritability would inform the assessment and management of children presenting with this symptom. To our knowledge, only 1 study has identified irritability trajectory classes. Caprara *et al.*⁸ found that irritability development in adolescence through adulthood could follow 1 of 4 trajectories: low stable, medium declining, medium stable, or high stable. However, little is known about how irritability develops from toddlerhood to the middle childhood years or what social environmental, family, or child characteristics are associated with different trajectories of irritability.

Examination of the developmental trajectories of irritability should be informed by data indicating associations between child irritability and maternal depression, among other factors. For example, children of parents with a lifetime history of depression are at high risk for exhibiting irritability in early childhood.⁴ In addition, mothers with more severe trajectories of depressive symptoms have children with worse internalizing and externalizing problems, both psychopathology dimensions related to irritability.⁹ Moreover, children whose parents have a history of both recurrent depression and a recent depressive episode exhibit significantly more depressive symptoms than children whose parents' depression is farther in the past.¹⁰ Thus, timing and recurrence may be aspects of maternal depression that are relevant to child irritability. In these studies, however, researchers have largely focused on the unidirectional influence of maternal depression on child outcomes. Nevertheless, the relationship between maternal depression and child irritability may be characterized by bidirectional influences that interact over time,¹¹ mirroring other parent-child interactions (e.g., parent hostility and child depression¹²). Little is known, however, about how child irritability interacts with maternal

depression, and such knowledge could have important treatment implications.

To address these gaps in the literature, the present study pursued 3 objectives: (1) use of a person-centered approach to identify classes of individuals based on irritability development from toddlerhood to middle childhood; (2) characterization of these irritability trajectory classes in terms of maternal depression and other family, social environment, and child characteristics; and (3) as a more exploratory analysis, determination of the extent to which the relationship between maternal depression and child irritability is bidirectional.

METHOD

Participants

Data were from the Fragile Families and Child Wellbeing Study,¹³ which follows a large, population-based cohort of predominantly low-income children born in 18 large cities in the United States between 1998 and 2000. The sample was recruited by approaching families after the child's birth at hospitals in major urban centers with populations of more than 200,000. Births of children to unmarried parents were oversampled. The overarching goal of the Fragile Families and Child Wellbeing Study is to examine the role of the social and family environment on child development. The present study used data from mother (primary caregiver) in-home and telephone interviews at child ages 1, 3, 5, and 9 years unless otherwise noted. Of the 4,898 families recruited at the child's birth, 4,712 (96.2%) completed the irritability or maternal major depressive episode measures for at least 1 time point.

Measures

Irritability. Irritability symptoms were assessed using the Child Behavior Checklist (CBCL). The CBCL/2-3 (Toddler) version¹⁴ was collected at age 3 years, the CBCL/4-18¹⁵ at age 5 (the current school-age version at the time), and the CBCL/6-18¹⁶ (the most recent version) at age 9. Three items from the CBCL (“temper tantrums or hot temper,” “stubborn, sullen or irritable,” and “sudden changes in mood or feelings”) were used to create the irritability variables for ages 5 and 9 (Cronbach's $\alpha = 0.70$ and 0.73 , respectively). These items have previously been identified as comprising an irritability factor.¹⁷ A fourth item (“easily frustrated”) was also included for age 3 years; this item is strongly related to irritability conceptually but is available only in the CBCL/2-3 version administered at age 3. A 1-factor confirmatory factor analysis for the 4 items comprising irritability at age 3 showed excellent fit (root mean square error of approximation [RMSEA] = 0.037 , comparative fit index [CFI] = 0.996 , Tucker-Lewis index [TLI] = 0.989) and internal reliability

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