Putting Theory to the Test: Modeling a Multidimensional, Developmentally-Based Approach to Preschool Disruptive Behavior

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Objective: There is increasing emphasis on dimensional conceptualizations of psychopathology, but empirical evidence of their utility is just emerging. In particular, although a range of multidimensional models have been proposed, the relative fit of competing models has rarely been tested. Furthermore, developmental considerations have received scant attention. In this study, we tested a developmentally based, four-dimensional model of disruptive behavior theorized to represent the defining features of disruptive behavior at preschool age: Temper Loss, Noncompliance, Aggression, and Low Concern for Others. **Method:** Model testing was conducted in two independent samples of preschoolers: Clinically Enriched Sample (n = 336) and Epidemiologic Sample (n = 532). The tau-equivalent confirmatory factor analyses were used to test the fit of the Developmental Model relative to three leading competing models (*DSM* opositional defiant disorder (ODD)/conduct disorder (CD) Model, "Callous" Model, and an "Irritable/Headstrong/Hurtful" Model). Reliability of the four dimensions was also tested. Validity of the dimensions was tested by predicting multi-informant, multi-method ratings of disruptive behavior and impairment, and incremental utility relative to *DSM* symptoms. **Results:** In both samples, the Developmental Model demonstrated a superior fit compared with the competing models within the full sample, and across key demographic subgroups. Validity was also demonstrated, including incremental utility relative to *DSM-IV* disruptive behavior symptoms. **Conclusions:** Critical next steps for achieving scientific consensus about the optimal dimensional model of disruptive behavior and its clinical application are discussed. J. Am. Acad. Child Adolesc. Psychiatry, 2012;51(6): 593–604. **Key Words:** disruptive behavior, developmental psychopathology, dimensional, early childhood, preschool behavior problems

Dimensional approaches to psychopathology are an important complement to categorical classification systems.[1-3] Categorical approaches have clinical utility but they necessarily reduce the complexity and heterogeneity of clinical phenomenology. Dimensional approaches are less parsimonious but have the advantage of identifying clinical patterns along a continuum of severity. This may be particularly useful in early childhood because emergent psychopathology may be milder, and distinctions from normative misbehaviors may best be captured as points along a dimension. Furthermore, multidimensional approaches parse complex clinical phenotypes into distinct, component dimensions and allow consideration of their pattern as clinical profiles. This enables identification of unique etiology and course, and provides critical information for targeted prevention.

The goal of this study was to advance our understanding of the phenotype of disruptive behavior in early childhood, one of the most common and earliest emerging developmental psychopathologies.[4-6] We do so by testing a developmentally based, multidimensional model in which core dimensions of disruptive behavior

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are conceptualized in terms of deviations from normative developmental processes in the regulation of emotion and behavior, and in which behaviors are assessed in developmentally meaningful terms.

A number of studies have "parsed" the heterogeneity of disruptive behavior using categorical, subtype and dimensional approaches. Of course, the most commonly accepted approach is the *DSM* categorical distinction between Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). (This may not be a meaningful distinction at preschool age: psychometric evidence suggests a single disruptive behavior disorder [DBD] syndrome at this age[7].) Seminal work by Frick and others has provided strong empirical support for a callous/unemotional subtype of CD, including differentiation within early onset patterns.[8-10] Most recently, Stringaris et al. have applied a multidimensional approach to ODD and have demonstrated differential predictive utility of Irritable, Headstrong, and Hurtful dimensions, a pattern replicated by others.[11-15]

We are keenly aware that proliferation of models and labels can be vexing and confusing for the field. Thus, we introduce an alternative model here with some reluctance. Our rationale for doing so is that prior work has typically lacked a developmental conceptualization. Whereas the proposed four-dimensional model draws heavily on prior work, its developmental framework is designed to characterize symptoms in a manner that can be meaningfully applied to young children, foster normative–atypical distinctions during this developmental period, and ultimately be linked to underlying developmental processes that go awry in disruptive behavior. This approach reflects a core theoretical principle of the developmental psychopathology framework, i.e., disorder is viewed in terms of developmental deviation.[16,17] The other organizing theoretical principle that undergirds this model is that clinical heterogeneity is important for characterizing meaningful phenotypic variation and differential etiologic pathways.[18]

Within our developmentally based model, we theorize the four defining dimensions of DBDs as: (1) Temper Loss; (2) Noncompliance; (3) Aggression; and; (4) Low Concern for Others. Figure 1 provides a heuristic of this model illustrating the theorized developmental underpinnings of the dimensions and exemplars of their normative and clinical manifestations.[19-22]

The Temper Loss dimension reflects problems in regulation of overt anger, including both temper tantrums and angry mood. The regulation of negative emotion is a core developmental task of early childhood and reflects the capacity to modulate the intensity and temporal features of emotional arousal in a goal-oriented manner.[23-25] Whereas temper tantrums and transient irritability are common responses to frustration in early childhood, frequent, intense tantrums and pervasive negative mood are associated with clinically significant problems at preschool age.[26-28]

The Noncompliance dimension reflects resistance to, and failure to comply with, rules and social norms. Internalization of rules is a central developmental task of early childhood, including the capacity to shift behavior in response to environmental demands and to inhibit behavior in response to both internal and external controls.[19-22] Whereas noncompliance is a normatively expectable expression of autonomy at preschool age, its normative manifestations are goal-directed, flexible, and tempered by a desire to please others.[20,21] In contrast, clinical manifestations are characterized by recalcitrant defiance and deliberate rule-breaking.[29]

The Aggression dimension reflects a tendency to respond aggressively in a variety of situations. Aggression emerges in the first year of life as a natural way of expressing anger and continues to be normative as a response to frustration and peer conflict throughout early childhood. Atypical forms include high frequency, hostile, and proactive aggression, which is distinguishable from normative aggression by 18 months of age.[30]

The Low Concern for Others dimension reflects pervasive disregard of others' needs and feelings. This dimension draws on extensive work on callousness in older youth[31] but is conceptualized in terms of disruptions in the early development of empathy and conscience formation. While "self-centered" behavior is expectable in young children to some extent, concern over others' distress and expressions of guilt when causing harm or displeasure to others are evident in the first years of life.[22,32-34] Atypical forms of Low Concern are hypothesized as intentionally causing others distress and purposeful provocativeness.