

Family Characteristics, Expressed Emotion, and Attention-Deficit/Hyperactivity Disorder

To the Editor:

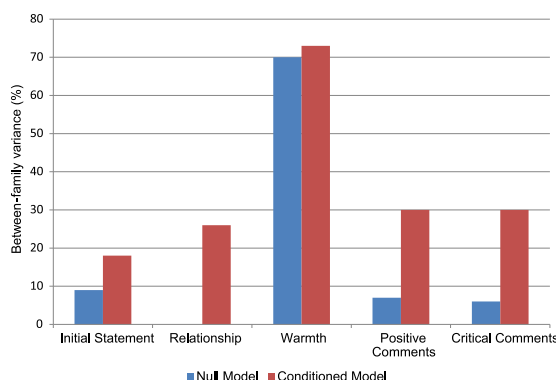
Understanding what determines the high levels of negative parental expressed emotion (EE) experienced by children with attention-deficit/hyperactivity disorder (ADHD) is important because it could help to target treatments more effectively.¹ Based on a range of different sorts of data, it has come to be assumed that these patterns of critical and hostile parental expressions are due largely to the troublesome behavior of children with ADHD provoking a response from parents rather than being driven by characteristics of the parents or the families more generally.¹⁻⁵

In 2011, we published some analyses in an article titled "Disentangling Child and Family Influences on Maternal Expressed Emotion toward Children with Attention-Deficit/Hyperactivity Disorder" in the *Journal*,⁶ which provided additional support for this position. These analyses were based on a set of multilevel models of the role family and child effects have on maternal EE using a sample of children with a clinical diagnosis of ADHD and their siblings without ADHD. Overall, the conclusion reached from the results of these analyses was that maternal EE was largely determined by variations in child symptoms (especially in relation to oppositional and conduct problems rather than ADHD) within families rather than differences between families (except in the case of the EE component warmth). From a clinical angle, this suggested to us that modifying how parents and families respond to the difficult behavior of their children with ADHD (e.g., through parent training) may be important for the psychological well-being of the family as a whole, although it may be less effective at changing the difficult behavior itself (because this drove rather than was driven by negative maternal EE).

Recently, we conducted some additional analyses with the same dataset to investigate the multilevel structure further. The results of these additional analyses painted a somewhat different picture because family and parent-related characteristics seemed to be more important as drivers of negative maternal EE than first appeared to be the case. In our original analyses, we adopted

a commonly used approach to multilevel modeling in which the initial step involved running a null model wherein specific child and family predictors were excluded and from which the overall influence of differences between children within the same family (child-specific/within-family effects) and differences between families (between-family/shared family effects) on maternal EE was estimated. This initial step revealed that there were no significant between-family effects on all but one maternal EE component (warmth), and as a consequence we did not pursue these between-family effects any further. The alternative approach we took in our further investigations differed in one important respect. That is, we estimated the overall shared family effects after first conditioning on ADHD diagnostic status (i.e., we added ADHD diagnostic status in the initial step of the model instead of excluding all child-specific and family predictors at this stage). This seemed important because of the overlap between ADHD and sibling status in the data used (all probands had a clinical diagnosis of ADHD and their siblings did not; a more technical description of the analytical approach can be found in Supplement 1, available online). When we conditioned on ADHD diagnostic status, the initial model demonstrated that significant proportions of the variance in negative maternal EE were accounted for by child and family effects, with the variance accounted for by shared family effects being 18% for initial statement, 26% for relationship, 30% for positive comments, and 30% for critical comments (Figure 1). The license we now had to explore family effects at subsequent steps of the analyses

FIGURE 1 A comparison of the between-family variance in the null model with the between-family variance in the initial step of the conditioned model.



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highlighted the role of sibling pair average oppositional and conduct problems in the family and maternal depression as important drivers of negative emotional expressions toward the child with ADHD and the sibling (for a more detailed account of the specific predictors, see [Table S1](#), available online). In the final step of the model in our further investigations, when all child and family predictor variables were included in the model, although in general child effects still dominated for these EE components, the variances accounted for by shared family effects were 14% for initial statement, 11% for relationship, 31% for positive comments, and 20% for critical comments. Although the previous approach assumed that there were no family effects for these EE components, the alternative conditioned model demonstrated that after controlling for ADHD diagnostic status first and then including all specific child and family characteristics, family does play a role in driving negative maternal EE. We thought this difference in results important, especially given from a clinical perspective, this highlights the value of interventions targeting broader family/sibling characteristics and parental mental health in the management of ADHD.

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