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The child behavior checklist broad-band scales predict subsequent psychopathology: A 5-year follow-up

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Abstract

Objective: To evaluate the utility of the Child Behavior Check list (CBCL) for identifying children of parents with panic disorder or major depression at high-risk for future psychopathology.
Methods: Baseline Internalizing and Externalizing CBCL T-scores were used to predict subsequent depressive, anxiety, and disruptive behavior disorders at a 5-year follow-up in children of parents with panic disorder, major depression, or neither disorder.
Results: The Internalizing scale predicted subsequent agoraphobia, generalized anxiety disorder, separation anxiety disorder, and social phobia. In contrast, the Externalizing scale predicted subsequent disruptive behavior disorders and major depression.
Conclusions: The convergence of these results with previous findings based on structured diagnostic interviews suggests that the CBCL broad-band scales can inexpensively and efficiently help identify children at high risk for future psychopathology within a population of children already at risk by virtue of parental psychopathology.

Keywords: Child behavior; High-risk; Longitudinal studies; Depression

In a series of cross-sectional (Biederman, Rosenbaum, Bolduc, Faraone, & Hirshfeld, 1991) and longitudinal studies (Biederman, Petty, Faraone, Henin, Hirshfeld-Becker, Pollack, & 2006; Biederman, Petty, Hirshfeld-Becker, Henin, Faraone, & Dang, 2006) of children at high and low risk for panic disorder and major depression, our group documented a divergent pattern of risk for psychopathology in children at risk. These studies documented a divergent pattern of risk in which parental panic disorder selectively increased the risk for anxiety disorders in the offspring while parental major depression selectively increased the risk for major depression and disruptive behavior disorders in the offspring.

Although these longitudinal findings clarified and extended previous cross-sectional studies providing support for the transmission of disorders from parents to their high risk offspring (Biederman et al., 1991; Biederman et al., 2001; Biederman et al., 2004; Crowe, Noyes, Pauls, & Slymen, 1983; Faraone & Biederman, 1997; Goldstein et al., 1994; Hettema, Prescott, & Kendler, 2001; Noyes et al., 1986; Weissman, Leckman, Merikangas, Gammon, & Prusoff, 1984), these studies

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relied upon structured diagnostic interviews, a very time intensive and expensive methodology. Thus, simpler and more cost effective approaches to identifying offspring at high risk for psychopathology are needed.

One such approach is the Child Behavior Checklist (CBCL). The CBCL is a paper and pencil instrument with excellent psychometric properties. Good convergence between structured interview-derived diagnostic categories and syndrome-congruent CBCL scales has been well documented (Biederman et al., 1993; Biederman et al., 1995; Biederman, Monuteaux, Kendrick, Klein, & Faraone, 2005; Chen, Faraone, Biederman, & Tsuang, 1994; Edelbrock & Costello, 1988; Faraone, Althoff, Hudziak, Monuteaux, & Biederman, 2005; Geller, Warner, Williams, & Zimerman, 1998; Geller et al., 2006; Kazdin & Heidish, 1984). Findings from Koot and Verhulst (1992) and Verhulst, Koot, and Van der Ende (1994) showed that Internalizing and Externalizing problems predicted referral to mental health services in 4- and 6-year follow-ups of a population-based sample, respectively. Kroes et al. (2002) found that Externalizing problems predicted ADHD, conduct disorders, and elimination disorders while Internalizing problems predicted mood and anxiety disorders 1.5 years later in 5–6-year-old children from the general population. Mesman and Koot (2001) showed that Internalizing problems were predictive of at least one DSM-IV anxiety or affective disorder 8 years later and Externalizing problems were predictive of at least one disruptive behavior disorder 8 years later.

Because the CBCL contains broad-band Internalizing and Externalizing scales that largely correspond to mood and anxiety disorders and disruptive behavior disorders, respectively, they can be particularly suitable for the investigation of whether they can predict divergent patterns of risk from early childhood to adolescent years in children at risk. That is, broad behavioral conditions in early childhood may be predictors of later, more specific psychopathology. If effective in predicting psychopathological outcomes, the CBCL would be an inexpensive method for identifying at-risk children in need of preventative or early intervention strategies.

In this prospective analysis, we evaluated the use of the Internalizing and Externalizing broad-band scales of the CBCL for identifying children at risk for mood, anxiety, and disruptive behavior disorders. We sought to expand on the existing longitudinal literature by using outcomes of major depression and individual anxiety disorders rather than the previously studied larger categories of mood, anxiety, or Internalizing disorders. Based on the literature, we hypothesized that the Internalizing scale would identify children at risk for mood and anxiety disorders and the Externalizing scale would identify children at risk for disruptive behavior disorders.

1. Methods

1.1. Subjects

As previously described (Biederman, Petty, Hirshfeld-Becker, et al., 2006), parents with panic disorder and major depression were recruited from clinical referrals and advertising in the local media. Comparison parents were recruited through advertisements to hospital personnel and in community newspapers. Control proband selection was guided by contemporary epidemiologic methodology, which dictates that the sampling of controls should be drawn from the exposure distribution of the source population that gave rise to the cases (Miettinen, 1985). Comparison parents were free of major anxiety disorders or mood disorders. Parents with PD and/or MD were selected on the basis of having been treated for these disorders. There were no constraints on treatment in offspring. For this analysis, we used children with CBCL data at baseline that had psychiatric assessments at follow-up ($N = 248$). Offspring of PD + MD parents ($N = 107$) came from 70 families, offspring of PD parents ($N = 17$) from 11 families, offspring of MD parents ($N = 46$) from 29 families, and offspring of controls ($N = 78$) from 40 families. Both parents were assessed in all families. The institutional review board at Massachusetts General Hospital approved this study protocol. All parents signed written consent and children assented to study procedures.

1.2. Follow-up assessment procedures

Data were collected at two time points. The first was the baseline assessment, conducted when the sample was originally recruited, between 1993 and 1998. The second was conducted approximately 5 years later, between 1999 and 2004. Because some families were easier to reach at follow-up than others, there was variability in the follow-up period (mean = 4.8 years, S.D. = 1.5).

Psychiatric assessments of the children at baseline relied on the DSM-III-R criteria and were previously described (Biederman et al., 2001). Assessments at follow-up were based on the DSM-IV Schedule of affective disorders and schizophrenia for school-aged