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A Longitudinal Study of Family Functioning in Offspring of Parents Diagnosed With Bipolar Disorder

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Objective: To compare the longitudinal course of family functioning in offspring of parents with bipolar disorder (BD), offspring of parents with non-BD psychopathology, and offspring of healthy control (HC) parents.

Method: Offspring of parents with BD (256 parents and 481 offspring), parents without BD (82 parents and 162 offspring), and HC parents (88 parents and 175 offspring) 7 to 18 years of age at intake, from the Bipolar Offspring Study (BIOS), were followed for an average of 4.3 years. Family functioning was evaluated using the child- and parent-reported Family Adaptability and Cohesion Scale–II and the Conflict Behavior Questionnaire. The data were analyzed using multivariate multilevel regression, generalized linear estimating equation models, and path analysis.

Results: Families of parents with BD and parents with non-BD psychopathology showed lower cohesion and adaptability and higher conflict compared with HC families. There were no significant differences in cohesion and adaptability between families of parents with psychopathology. The effect of parental psychopathology on family functioning was mediated by parental psychosocial functioning and, to a lesser extent, offspring disorders. In all 3 groups, parent-reported family conflict was significantly higher than child-reported conflict. Across groups, family cohesion decreased over follow-up, whereas conflict increased.

Conclusion: Any parental psychopathology predicted family impairment. These results were influenced by the offspring's age and were mediated by parental psychosocial functioning and, to a lesser degree, by offspring psychopathology. These findings emphasize the need to routinely assess family functioning in addition to psychopathology and provide appropriate interventions to parents and offspring.

Key words: bipolar disorder, family functioning, family conflict, longitudinal study

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Bipolar disorder (BD) is a recurrent illness that affects 1% to 3% of youth and is associated with significant negative psychosocial consequences and increased risk for legal problems, substance abuse, and suicidal behaviors.[1,2] The family environment plays a critical role throughout development—as a risk and a protective factor[3]—and family distress can exacerbate and result from BD symptoms.[4] The study of family functioning in youth at high familial risk for BD is crucial to inform assessment and preventive interventions for these populations.[5]

To our knowledge, there are 16 studies in youth with BD and 6 studies in youth with parents with BD; most were cross-sectional and assessed family functioning from the perspective of the parent or the offspring. The studies that focused on families of youth with BD mostly found higher levels of conflict and expressed emotion (critical, hostile, or emotionally overinvolved attitudes) and lower cohesion (emotional bonding) and adaptability (the family's ability to modify its structure, relationships, and rules in response to circumstances) compared with healthy controls (HCs).[6,7] However, extant studies did not find differences in family functioning between youth with BD and youth with non-BD psychopathology (eg, major depression or behavioral disorders),[8] raising the question of whether families of youth with BD are characterized by distinct patterns of family impairment or whether such impairment is associated with psychopathology more generally.

To date, only 3 studies evaluated family functioning longitudinally in youth with BD.[9-11] These studies showed poorer mood outcome over 2 years in youth whose families reported higher conflict at baseline.[9,11] Youth with BD in families with high levels of expressed emotion demonstrated greater mood improvement in Family Focused Therapy than those with high levels of expressed emotion who

received a comparison intervention.[10] In one of these studies, cohesion, adaptability, and conflict were significantly correlated with depression scores in adolescents with BD.[11]

Six cross-sectional studies focused on the family functioning of parents with BD (Table S1, available online). Most reported higher conflict and lower cohesion in families with a parent with BD, particularly when the offspring also had psychopathology.[12] No studies compared the family functioning of parents with BD with parents with non-BD psychopathology.

Research on family functioning in adults with BD indicates that worse family functioning is associated with more past suicide attempts[13]; manic episodes are temporally associated with poorer family functioning than depressive episodes[14]; and improvement in mood symptoms is correlated with better family functioning.[15] In sum, longitudinal studies in adults show that family functioning is associated with clinical course, predicting severity and relapse risk.[16-18]

Limitations in the studies conducted to date include that they were largely cross-sectional and included small samples, did not always include control groups, or included only control groups of HC subjects. Few evaluated the ratings of parents and youth regarding family functioning and did not always consider the effects of confounding variables (eg, parents' psychopathology, socioeconomic status [SES]). Longitudinal studies were of brief duration, in the context of treatment studies, and rarely blind to child and parental diagnosis.

The Pittsburgh Bipolar Offspring Study (BIOS) is an ongoing longitudinal study, currently in its 17th year, of offspring of parents with BD (n = 388) and community controls (n = 250). Our prior publications showed that offspring of parents with BP are at high risk to develop unipolar depression, anxiety disorders, behavior problems, suicidal ideation, substance abuse, and early-onset BD spectrum disorders.[2,19] The goal of the present study was to longitudinally compare family functioning among the offspring of parents with BD, offspring of parents with non-BD psychopathology, and offspring of HC parents. All measures were assessed separately from the perspective of offspring and parent.

First, we hypothesized that families of parents with BD, particularly those in which the offspring have psychopathology, would show higher conflict, lower cohesion, and lower adaptability than HC parents (hypothesis 1). Second, because we believe that these family functioning indices reflect global familial impairment associated with parental psychopathology, we expected that families with a parent with BD and families with a parent with non-BD psychopathology would have impaired family functioning compared with the HC group but would not differ from one another (hypothesis 2). Third, we hypothesized that psychosocial functioning and presence of psychopathology in offspring and parents would predict family functioning (hypothesis 3). Fourth, given that epidemiologic studies indicate family conflict tends to increase and family cohesion tends to decrease throughout adolescent development,[20,21] we hypothesized that levels of these variables would change over follow-up (hypothesis 4).

METHOD

The methods used in the BIOS are described in detail in prior publications.[2] Briefly, the BIOS recruited 481 offspring of 256 parents with *DSM-IV* BD type I or II and 337 offspring of 170 community HC parents. For the present analyses, we examined 2 subgroups of the control group: offspring (n = 162) of parents (n = 82) with non-BD psychopathology and offspring (n = 175) of psychiatrically HC parents (n = 88). Offspring enrolled at 7 to 18 years of age were included in these analyses. Subjects were assessed every 2.1 years on average and had a median of 3.0 assessments with 4.3 years of follow-up. The overall retention rate for the study through the last follow-up assessment included in these analyses was 94%. Parents with BD were recruited through advertisements (53%), adult BD research studies (31%), and outpatient clinics (16%). Control parents were ascertained by random-digit dialing and were group matched for age, sex, and neighborhood to the parents with BD.

Parents and offspring consented for their participation. Exclusion criteria for parents included current or lifetime diagnoses of schizophrenia or intellectual disability; mood disorders secondary to substance abuse; medical conditions that interfered with study participation; and living more than 200 miles from Pittsburgh. Exclusion criteria for the control group were the same, with the additional criterion that neither biological parent had BD or a first-degree relative with BD. All offspring 7 to 18 years of age of each eligible parent were included unless they were deemed unable to complete the assessments (eg, intellectual disability).

Instruments

Parents and participating biological co-parents (34%) were assessed by direct interview using the Structured Clinical Interview for *DSM-IV*.[22] The psychiatric history of nonparticipating co-parents was obtained from the participating parent using the Family-History Research Diagnostic Criteria.[23]

To establish the child's diagnosis at baseline and follow-up visits, parents and offspring were interviewed using the Schedule for Affective Disorders and Schizophrenia for