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Personality disorders in offspring of mothers with mood disorders: Results from a longitudinal family study

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ABSTRACT

Offspring of mothers with mood disorders are known to be at risk for a range of adverse outcomes, but the prevalence of personality disorders (PDs) in this group is unknown. The goal of this study was to assess risk of PD diagnoses and symptoms in offspring of mothers with and without mood disorders, and to explore contributing factors to this risk. This longitudinal study assessed PDs and symptoms of PDs in offspring of mothers with bipolar disorder (O-BD), major depression (O-MDD), and no psychiatric diagnosis (O-WELL) in mid-adolescence and in early adulthood. O-BD were more likely to develop a Cluster B PD than O-MDD or O-WELL in adolescence, and more likely to develop a Cluster B PD then O-WELL in early adulthood. Dimensional analyses revealed that O-BD had elevated symptoms in PDs across all PD clusters at mid-adolescence and young adulthood. O-MDD showed elevated symptoms of antisocial PD at both time points, and of obsessive-compulsive PD at young adulthood. Offspring of mothers with mood disorders, especially O-BD, are at increased risk for PD diagnoses and symptoms in mid-adolescence and early adulthood. Contributing factors to risk of PD symptoms in at-risk offspring are discussed.

1. Introduction

Mood disorders, such as bipolar disorder and major depressive disorder (MDD), represent a serious health problem for individuals, their families and society. Offspring of depressed mothers provide a group in which both rearing and biological risk factors are present, substantially increasing the risk for psychopathology. Studies of offspring of parents with bipolar disorder (O-BD) and offspring of parents with major depressive disorder (O-MDD) have demonstrated elevated risk for a broad range of problems, including a higher incidence of bipolar disorder and MDD in comparison to offspring of well parents (O-WELL), a higher incidence of other psychiatric disorders, and functional impairment including poor social and academic functioning (Birmaher et al., 2009; Bruder-Costello et al., 2007; Egeland et al., 2012; Mesman et al., 2013; Rasic et al., 2014; Weissman et al., 2006; Zahn-Waxler et al., 1988). Elevated risk for psychopathology in offspring of parents with mood disorders could include personality disorders (PDs). High rates of co-morbidity between mood disorders and PDs are often reported (Brieger et al., 2003) and patients with these conditions often have overlapping family histories (Akiskal et al., 1985b; Weller et al., 1994) and mood disorders (Bienvenu et al., 2011) are heritable. However, the prevalence of PDs in offspring of parents with mood disorder has not been fully examined.

Several cross-sectional studies have identified patterns in offspring of parents with mood disorders on constructs relevant to personality development. Offspring of parents with mood disorders are often characterized by difficult temperaments (reviewed by Chang et al. (2003)). In comparison to low-risk children, O-BD have exhibited behavioral disinhibition, including hyperthymic personality, novelty-seeking, and extroversion (Hirshfeld-Becker et al., 2003); greater dysregulation as measured by the Child Behavior Checklist (CBCL) (Diler et al., 2011); and increased activity levels and decreased task orientation (Singh et al., 2008). Additionally, a difficult temperament is more likely in O-MDD compared to O-WELL (Bruder-Costello et al., 2007).

Research has also demonstrated strong links between temperamental risk factors in offspring and offspring psychopathology. In recent reports from a longitudinal study of O-BD, high emotionality predicted psychopathology and mood disorder in O-BD (Doucette et al., 2013) and both high emotionality and shyness

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predicted the development of anxiety disorders in O-BD, which subsequently increased the risk of mood disorders (Duffy et al., 2013). Another study suggested that certain offspring personality traits (neuroticism, extraversion and psychoticism) are associated with offspring mood disorders but not with parent mood disorders (Rothen et al., 2009). However, other research suggests that among parents with mood disorders, parent personality traits could play a role in the development of their offspring. Research examining O-BD and O-WELL showed that high levels of parental neuroticism and low agreeableness predicted poor interpersonal functioning of the offspring during late adolescence-early adulthood, and this relationship was especially strong among the O-BD (Ostiguy et al., 2012). Overall, these studies indicate that offspring of parents with mood disorders develop problematic personality traits, which could be early characteristics of PD psychopathology.

Longitudinal work is promising for explaining how personality functioning unfolds across development. Earlier results from the present longitudinal study showed that in childhood, O-BD had heightened distress and preoccupation with conflicts, difficulty maintaining friendly social interactions, and trouble modulating hostile impulses (Zahn-Waxler et al., 1984). Later work on this sample suggested differential patterns for how problems unfold over time, such that for O-MDD, early self-regulatory deficits cascade into internalizing problems, but these early deficits cascade into thought problems for O-BD (Klimes-Dougan et al., 2010). However, no longitudinal studies have yet specifically examined how maternal mood disorder diagnosis impacts the risk of PDs in these offspring.

The goal of the present study was to measure PD psychopathology in O-BD, O-MDD, and O-WELL. In this longitudinal study, we examined PDs at two assessment points, in late adolescence and in early adulthood. Considering the possibility of low base rates for full-threshold PD outcomes in the offspring, as well as the increasing emphasis on the importance of dimensional approaches in PD research (Krueger, 2013), we used both categorical and dimensional approaches in our analyses. For the categorical approach, we aggregated PDs across PD clusters A, B and C; for the dimensional analyses, we examined symptom levels of all 10 DSM-IV PDs. We predicted that offspring of mothers with mood disorders would have greater PD psychopathology than O-WELL at both time points. In particular, based on prior work showing the most severe developmental deviance by adolescence and young adulthood (Klimes-Dougan et al., 2010) in O-BD, we predicted that this group would show the most PD psychopathology. We further assessed whether maternal mood disorder diagnosis would predict PD outcomes over and above the impact of a range of other relevant factors such as maternal PD, maternal substance use disorders, maternal global assessment of functioning (GAF), family stress, and the presence of a mood disorder in the offspring. A secondary goal was to assess within-individual continuity of PD symptoms across the T4 and T5 assessments. We predicted moderate levels of continuity in PD symptoms across time.

2. Methods

2.1. Sample

This study is based on archival data from a longitudinal investigation of O-BD, O-MDD and O-WELL. Recruitment and ongoing assessments took place between 1979 and 2003. All mothers were the biological mothers and the primary caregivers for the offspring. Additional study details can be found in the previous publications from this project (Zahn-Waxler et al., 1988). The families in this study were seen five times during the offspring's development, starting from early childhood extending through young adulthood. The first four assessments were about 3 years apart (T1, T2, T3, and T4) and the final assessment was about 7 years later (T5). During these five visits, comprehensive assessments were conducted on parents' and children's psychiatric status, children's psychosocial functioning, and families' functioning. Here we report on the subset of offspring who completed personality assessment at either or both of the T4 (mid-adolescence) and T5 (early adulthood) assessments.

Of the 126 families meeting the initial criteria for participation in the longitudinal study, 114 families were considered eligible for this study at the time of the T3 assessments (e.g., families whose mother retained a diagnosis of minor depression were initially included in the recruitment efforts but ruled out as eligible for participation after T3). Of these, 98 eligible families participated through T3, and 91 families participated in the T4 and/or the T5 visit. Based on the initial sample, families with lower Socioeconomic scale (SES) and with male young adult offspring had greater attrition. Included in this study were 146 offspring participants at T4 and 136 offspring participants at T5; 115 offspring participated in both the T4 and T5 assessments.

2.2. Parental diagnostic assessment

At recruitment (T1), mothers were administered the Schedule for Affective Disorders and Schizophrenia: Lifetime Version (SADS-L) (Spitzer et al., 1978). The interviews were conducted by a psychiatric nurse who had been trained by a staff member of the New York Psychiatric Institute ($\kappa = 1.0$). Families were eligible if mothers met the Research Diagnostic Criteria for bipolar disorder (I or II) or MDD or if they were without past or current psychiatric disorder; their offspring were correspondingly grouped to O-BD, O-MDD and O-WELL. If the mother was eligible, the SADS-L interview was also administered to the father. The number and percentages of fathers that had at least one psychiatric diagnosis are summarized across offspring groups in Table 1. For the well families, both parents had to be without current or past psychiatric disorders. From the initial diagnostic interview, clinicians rated the mothers on the global assessment scale (GAS) (Endicott et al., 1976). The average GAS score for the depressed mothers was 43.22 (S.D. = 19.77) at a level of "serious symptomatology or impairment in functioning that most clinicians would think obviously requires treatment or attention" (Endicott et al., 1976, p. 176).

Six years into the study, mothers were re-diagnosed using the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer et al., 1990) and the Interval SADS. Nine mothers' diagnoses were changed (seven of which changed in the type of depression manifest from minor depression to MDD or from MDD to bipolar disorder). The diagnosis used in this study is the mother's adjusted "lifetime" diagnosis. Fathers were also re-diagnosed using the Interval SADS. As shown in Table 1, two-thirds of the fathers of the O-MDD adolescents had at least one psychiatric disorder (mood disorder, anxiety disorder, and/or substance abuse disorder). Changes in offspring grouping were based exclusively on changes in maternal diagnosis. Finally, information about stress in the family, including health problems, family conflicts, financial issues, loss of significant people, and marital discord, was collected using the Brown–Harris schedule for assessing family function (Brown and Harris, 1978).

Mothers' personality assessment was conducted at T3 using the Personality disorders examination Personality disorders examination (PDE) (Loranger, 1988). This is a semi-structured clinical interview for diagnosing PDs consisting of 126 questions assessing DSM-II-R criteria rated on a 3-point scale. The same clinician who administered the SADS at T3 administered the PDE. This measure has been compared with the SCID-II and with consensus diagnosis and has shown moderate agreement using categorical measures and strong agreement using dimensional measures (Spitzer, 1983). Reliability for the PDE in this study was based on a second clinician rating for 20% of the cases that were audio recorded. The results yielded an average interclass correlation of 0.90 for the individual disorder dimensional scores.

2.3. Offspring PD assessment as adolescents (T4) and young adults (T5)

We used different tools to identify PDs in adolescence (T4) and early adulthood (T5) in order to ensure that the assessments were developmentally appropriate. At T4, the Schedule for Nonadaptive and Adaptive Personality-Youth Version (SNAP-Y) was administered. The SNAP-Y (Clark, 1993) was originally developed to assess psychopathology in terms of the underlying trait dimensions that span normal through pathological personality characteristics; it also has scales to assess PD criteria from the Diagnostic and Statistical Manual (DSM-III-R) (Melley et al., 2002). The Youth Version is a 375-item self-report instrument. For each item, respondents decide how well it describes them and mark "true" if the statement is true or mostly true for them and "false" if it is false or mostly false for them. The three higher-order core personality traits and the 12 lower-order personality dimensions were derived by factor analysis. Normative data are based on a sample of 381 adolescents ages 12–18 years. The instrument demonstrates good structural and external validity as well as retest reliability (Linde et al., 2013). The scales used in the present work are derived from the existing DSM-III-R criteria, and this assessment included categorical assignments ("diagnosis present") as well as *T*-scores for symptom levels for the following PDs: paranoid, schizoid and schizotypal (Cluster A); antisocial, borderline, histrionic and narcissistic (Cluster B); avoidant, dependent and obsessive-compulsive (Cluster C).

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