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Creativity in familial bipolar disorder ☆

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Abstract

Studies have demonstrated relationships between creativity and bipolar disorder (BD) in individuals, and suggested familial transmission of both creativity and BD. However, to date, there have been no studies specifically examining creativity in offspring of bipolar parents and clarifying mechanisms of intergenerational transmission of creativity. We compared creativity in bipolar parents and their offspring with BD and bipolar offspring with attention-deficit/hyperactivity disorder (ADHD) with healthy control adults and their children. 40 adults with BD, 20 bipolar offspring with BD, 20 bipolar offspring with ADHD, and 18 healthy control parents and their healthy control children completed the Barron–Welsh Art Scale (BWAS), an objective measure of creativity. Adults with BD compared to controls scored significantly (120%) higher on the BWAS Dislike subscale, and non-significantly (32%) higher on the BWAS Total scale. Mean BWAS Dislike subscale scores were also significantly higher in offspring with BD (107% higher) and offspring with ADHD (91% higher) than in healthy control children. Compared to healthy control children, offspring with BD had 67% higher and offspring with ADHD had 40% higher BWAS Total scores, but these differences failed to reach statistical significance when adjusted for age. In the bipolar offspring with BD, BWAS Total scores were negatively correlated with duration of illness. The results of this study support an association between BD and creativity and contribute to a better understanding of possible mechanisms of transmission of creativity in families with genetic susceptibility for BD. This is the first study to show that children with and at high risk for BD have higher creativity than healthy control children. The finding in children and in adults was related to an enhanced ability to experience and express dislike of simple and symmetric images. This could reflect increased access to negative affect, which could yield both benefits with respect to providing affective energy for creative achievement, but also yield liabilities with respect to quality of interpersonal relationships or susceptibility to depression.

Keywords: Creativity; Bipolar disorder; Mood disorders

1. Introduction

Many eminently creative individuals have been retrospectively diagnosed with mood disorders, suggesting relationships between creativity and affective disorders. Jamison (1989) described several research paradigms used to study relationships between mood disorders and creativity. A common approach uses historical and biographical studies to provide anecdotal evidence for high rates of affective illness in eminently creative individuals, suggesting artists and writers may have a 2–3-fold more psychosis, mood disorders and suicide compared to people in less creative professions (Ludwig, 1992, 1994, 1995; Jamison, 1993; Post, 1994, 1996; Schildkraut et al., 1994).

Another approach involves assessing living artists and writers. For instance, in a sample of 30 writers, 80% were found to have had an episode of affective

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illness at some time in their lives (Andreasen, 1987). Also, a higher incidence of mania and hypomania was found in writers (43%) compared to a control group (10%). First-degree relatives of writers also reported higher rates of psychopathology, especially major depressive disorder, as well as higher levels of creativity (20%) compared with the relatives of controls (8%). Furthermore, another study reported that 38% of a group of 47 British prizewinning writers were diagnosed with affective disorders (Jamison, 1989).

Yet another approach examines relationships between creativity and affective illness by measuring creativity in patients with mood psychopathology. Richards and colleagues (1988) examined "everyday creativity" using the Lifetime Creativity Scale (LCS), which assesses creative accomplishments based on vocational and avocational activities. Richards reported that adults with cyclothymia and first-degree relatives of patients with bipolar disorder (BD), but not patients with BD themselves, had significantly higher LCS scores compared to controls. This study is notable in having examined creativity in a general clinical sample by using a standardized measure rather than identifying creativity by eminence.

Another psychometric scale that has been used to study creativity is the Barron–Welsh Art Scale (BWAS) (Barron and Welsh, 1952; Barron, 1963). The scoring of this instrument is based on "like" and "dislike" responses to figures of varying complexity and symmetry compared to preferences of creative individuals. Although there is some controversy regarding the exact type of creativity assessed by this measure (Ridley, 1977a,b, 1979), due to its perceptual preference this test may be viewed as a measure of enhanced perceptual creativity (Santosa et al., 1999) or ability to experience and mobilize negative affect (Strong and Ketter, 2002; Strong et al., 2003). Santosa and colleagues (Santosa et al., 1999) compared BWAS scores and various measures of temperament in euthymic adults with BD, euthymic adults with unipolar depression, healthy controls, and creative controls recruited from graduate programs in fine arts, creative writing, and product design. Patients with BD and creative controls scored similarly and significantly higher than healthy controls and unipolar depressed adults on the BWAS Total score, with these differences being driven by particularly robust increases in BWAS Dislike subscale scores, reporting a greater dislike of symmetrical and simple figures than the controls.

The aforementioned research suggests relationships between creativity and affective illness, specifically BD. However, definitions of and metrics used to assess noneminent creativity remain controversial, adding to the complexity of studying this phenomenon. Nevertheless, the question of whether or not BD is linked to creativity may be better addressed by studying noneminent creativity in patients with BD rather than eminently creative individuals, as such an approach should yield more generalizable findings relevant to common clinical populations.

Although there is substantial evidence of an association between creativity and BD, the nature of this relationship remains to be established. It is possible that creativity and BD have important genetic components that are transmitted together intergenerationally. However, while familial aggregation and genetic transmission of BD has been well established and demonstrated through family, twin, and adoption studies (for review see Faraone et al., 2003), there only have been limited studies investigating whether creativity is genetically transmitted along with BD. For example, Coryell and colleagues found enhanced educational and occupational achievement in first-degree relatives of patients with BD compared to controls (Coryell et al., 1989). Further, to our knowledge there have been no published genetic studies of creativity in non-BD samples. One hypothesis is that BD "causes" creativity, and that hypomania or mania fuels creative activity. However, BD and creativity could be independently transmitted from parents to children. In addition, it is possible that the genes for BD and creativity are linked and co-segregate through generations, accounting for their co-occurrence in people with BD. Other factors such as family environment might modulate this putative familial co-transmission of creativity and BD.

To clarify the interplay between BD and creativity, it may be helpful to study creativity in patients before their onset of BD, as this would address whether or not hypomania or mania is necessary to be creative. Bipolar offspring are at high-risk for the development of BD and other psychopathology, including behavioral and anxiety disorders (e.g., attention-deficit/hyperactivity disorder (ADHD), oppositional defiant disorder, generalized anxiety disorder) (Todd et al., 1996; Chang et al., 2000; DelBello and Geller, 2001; Wals et al., 2001; Chang et al., 2003a,b). A meta-analysis (Lapalme et al., 1997) reported that bipolar offspring compared with children of healthy parents were at 4-fold greater risk of having a mood disorder and at 2.7 times higher risk of developing any psychiatric disorder. Further, the incidence of bipolar spectrum disorders, such as bipolar I, bipolar II, and cyclothymia, varies between 14% and 50% in this population (Chang et al., 2003a,b). It is unclear which of these high-risk children will eventually develop BD, but several investigators have reported on putative prodromal symptoms of BD in bipolar offspring. ADHD in children of bipolar parents could be an early sign of a later BD (Faraone et al., 1997a,b; Chang et al., 2003a,b). Also, high rates of behavior and attention problems were found to be predictive of the development of affective disorders in bipolar offspring (Carlson and Weintraub, 1993). Thus,