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Research report

Cognitive and family correlates of current suicidal ideation in children with bipolar disorder

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ABSTRACT

Background: Suicidality among youth with bipolar disorder is an extreme, but largely unaddressed, public health problem. The current study examined the psychosocial characteristics differentiating youth with varying severities of suicidal ideation that may dictate targets for suicide prevention interventions.
Methods: Participants included 72 youth aged 7–13 (M=9.19, SD=1.61) with DSM-IV-TR bipolar I, II, or NOS and a parent/caregiver. Current suicidal ideation and correlates were assessed at intake, including: demographics and clinical factors (diagnosis, symptom severity, psychiatric comorbidity); child factors (cognitive risk and quality of life); and family factors (parenting stress, family cohesion, and family rigidity).
Results: Current ideation was prevalent in this young sample: 41% endorsed any ideation, and 31% endorsed active forms. Depression symptoms, quality of life, hopelessness, self-esteem, and family rigidity differentiated youth with increasing ideation severity. Separate logistic regressions examined all significant child- and family-level factors, controlling for demographic and clinical variables. Greater family rigidity and lower self-esteem remained significant predictors of current planful ideation. Diagnosis, index episode, comorbidity, and mania severity did not differentiate non-ideators from those with current ideation.
Limitations: Limitations include the small sample to examine low base-rate severe ideation, cross-sectional analyses and generalizability of findings beyond the outpatient clinical sample.
Conclusions: Findings underscore the importance of assessing and addressing suicidality in preadolescent youth with bipolar disorder, before youth progress to more severe suicidal behaviors. Results also highlight child self-esteem and family rigidity as key treatment targets to reduce suicide risk in pediatric bipolar disorder.

1. Introduction

Suicide in youth represents a significant public health concern, ranking as the third leading cause of death among children and adolescents in the United States (Center for Disease Control, 2005). An increased focus on suicide prevention efforts in recent years has not translated into reduced suicide rates among youth (Browne et al., 2005; Kessler et al., 2005), underscoring the need for research focused on suicide etiology. Children with pediatric bipolar disorder (PBD) are at extremely high risk for suicidal behavior, and constitute a key study population to inform prevention efforts. To guide the development of targeted suicide prevention interventions for this at-risk population, this study examined the associations between psychosocial factors and current suicidal ideation in children with PBD.

PBD is a refractory and debilitating illness that affects one to two percent of the population (Van Meter et al., 2011). Youth with PBD are characterized by episodic mood disturbance (i.e. elevated mood and/or significant irritability) and pronounced psychosocial impairment, including poor self-esteem and coping, family stress, and dysfunctional family patterns (Goldstein, 2009; West and Pavuluri, 2009). Despite continuing debate surrounding the complex PBD diagnosis, research has documented that PBD represents a discrete cluster of symptoms that can be validated by reliable assessment with stability over time (Akiskal, 1998; Geller et al., 2001), with temperamental characteristics and clinical manifestations that may differ from those with later adolescent- or adult-onset (Akiskal, 1995). The unique symptoms of PBD are associated with devastating consequences: PBD confers the highest risk for, and mortality from, suicide of all childhood disorders. Completed suicide rates for individuals with bipolar disorder are 15-times

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greater than the general population (Jamison, 2000), and early illness onset is associated with an increased risk of suicide attempts (Jolin et al., 2007). Moreover, up to 50% of youth with bipolar disorder attempt suicide by age 18 (Lewinsohn et al., 2003). Thus, the early identification and intervention of suicidal behavior in this population is essential to alter the morbid illness trajectory. Yet, despite incredible need and recognized public health significance, research on suicidality in PBD is still in its infancy.

Consistent with prevention science guidelines, prevention efforts should aim to identify and modify the psychosocial processes that precede or maintain suicidality in at-risk groups (Goldsmith et al., 2002). Variability in the presence and salience of risk factors across clinical populations and age groups may complicate attempts at targeted prevention. This is particularly true for children with PBD; core symptoms and psychosocial impairment are highly heterogeneous and vary across pediatric- versus later adolescent- or adult-onset bipolar disorder (Akiskal, 1995; Youngstrom, 2009), making it difficult to understand risk processes related to suicide.

Family and cognitive factors emerge in the broader suicide literature as compelling targets for further study given their relevance to the unique patterns of symptoms and impairment in PBD. Numerous studies highlight the link between family environment and youth suicide attempts, with greater family conflict and lower family support differentiating youth attempters from nonattempters (Brent et al., 1994; Gould et al., 1996). Such links may help explain the increased risk of suicide among youth with PBD, given the documented difficulties in parent stress, family communication and conflict that accompany this disorder (Goldstein et al., 2009b; Rucklidge, 2006). Indeed, two recent studies demonstrated that suicidal ideation in youth with PBD was associated with higher rates of stressful family events, mother-child conflict, and lower family adaptability (Algorta et al., 2011; Goldstein et al., 2009a). Thus, a greater understanding of the family characteristics of youth with PBD at greatest risk for suicidal behavior is warranted.

In addition, findings from the extant literature consistently support a link between cognitive vulnerability and suicide risk, including ineffective problem-solving and coping (Lewinsohn et al., 1996), low self-esteem, and hopelessness (Bridge et al., 2006). However, how such vulnerability may confer risk for suicide in pre-adolescents with PBD specifically has not been established. Risk may be particularly acute given the documented dysfunction in the brain structures involved in coping skills (e.g., reduced activation in the dorsolateral prefrontal cortex in concert with limbic over-activity) associated with PBD (Pavuluri et al., 2008; Pavuluri et al., 2010; Yurgelun-Todd et al., 2000), as well as the low self-esteem and hopelessness these youth report (Rucklidge, 2006).

Although increasing work has focused on youth suicide, gaps exist in our knowledge of risk factors in PBD, particularly the factors that are modifiable and hence can drive intervention efforts. To address this gap, the current study explored how the cognitive (self-esteem; coping; hopelessness) and family (parenting stress; family cohesion and rigidity) factors associated with the core characteristics of PBD may relate to suicidality, in addition to the demographic and clinical factors examined in past work (symptom severity, subtype of PBD, polarity of index episode, comorbidity). We focused on risk for varying severities of current ideation among pre-adolescents with PBD. Longitudinal data suggests significant relations between ideation and future attempts (Bridge et al., 2006), with nearly one-third of ideators later attempting suicide (Nock et al., 2008b), emphasizing the importance of ideation as an indicator of suicide risk and proximal target to study.

We build on existing studies by examining correlates of suicidal ideation in younger children with PBD, and by looking at finer gradations of ideation than previously examined. To our knowledge, only two studies have examined psychosocial risk for suicide in school-age children with PBD, but samples were primarily comprised of adolescents (mean age of 12, range 5–18 (Algorta et al., 2011; Goldstein et al., 2009a)). Identifying the factors specific to these younger ideators is necessary to address suicidality early in the continuum of morbidity – before youth progress to more severe behavior. Indeed, risk for suicide attempts is elevated in the year following ideation onset among younger ideators (Nock et al., 2008a), and youth with severe ideation specifically are estimated to have a 60% chance of attempting suicide within a year of ideation onset (Kessler et al., 1999). In addition, past studies focused solely on the presence of any ideation assessed via a single interview item (Algorta et al., 2011; Goldstein et al., 2009a) or collapsed lifetime and current ideators (Algorta et al., 2011). Thus, to characterize those at highest risk for suicidal behaviors, we investigated youth with varying intensities of suicidal ideation including passive, active, and severe thoughts with plan and intent as assessed via a comprehensive semi-structured interview for suicidality.

We hypothesized that current ideation would be associated with (1) child cognitive factors (low self-esteem, coping/problem-solving skills, and hopelessness) and lower perceived life quality; (2) family factors, including greater parenting stress and rigidity, and lower cohesion; and (3) clinical factors, including comorbidity and symptom severity. We expected that youth reporting more severe forms of ideation would be characterized by greater psychosocial impairment relative to those with passive or non-specific ideation.

2. Methods

2.1. Participants

Participants were children ($N=72$) diagnosed with a bipolar spectrum disorder recruited from a specialty mood disorders clinic in a large Midwestern urban academic medical center from 2010–2014. Children meeting DSM-IV-TR criteria for bipolar spectrum disorders (I, II, and not otherwise specified (NOS)) aged 7–13 were eligible to participate. Inclusion criteria included: stabilized on medication (defined as scores of ≤ 20 on the Young Mania Rating Scale (YMRS(Young et al., 1978)) and < 80 on the Children's Depression Rating Scale-Revised (CDRS(Poznanski et al., 1984)), parental consent, and youth assent. Exclusion criteria included: youth IQ < 70 (Kaufman Brief Intelligence Scale-Second Edition; KBIT-2(Kaufman and Kaufman, 2004)); active psychosis, active substance abuse or dependence, neurological, or other medical problems that significantly complicate psychiatric symptoms (Washington University Schedule for Affective Disorders and Schizophrenia; WASH-U-KSADS(Geller et al., 1996)); and primary caregiver severe depression or mania.

2.2. Procedures

Procedures were approved by the Institutional Review Board at the University of Illinois-Chicago. Eligibility was assessed by trained raters (licensed clinical psychologists and doctoral students). After obtaining informed consent, parents were interviewed using the Washington University Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS(Geller et al., 1996)), with portions of the Kiddie-SADS-Present and Lifetime Version (K-SADS-PL(Geller et al., 1996; Raison et al., 2006)) used to define mood episodes, with corroborating information from child-report. Diagnostic interviews were reviewed during study meetings for final determination. After confirmation of a bipolar spectrum disorder diagnosis and the administration of inclusion/exclusion measures, youth and parents completed a battery of measures