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Research paper

Psychopathology profiles of acutely suicidal adolescents: Associations with post-discharge suicide attempts and rehospitalization

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ABSTRACT

Background: Suicidal adolescents are heterogeneous, which can pose difficulties in predicting suicidal behavior. The Youth Self-Report (YSR) psychopathology profiles predict the future onset of psychopathology and suicide-related outcomes. The present study examined the prevalence and correlates of YSR psychopathology profiles among suicidal adolescents and prospective associations with post-discharge rates of suicide attempts and psychiatric rehospitalization.

Methods: Participants were acutely suicidal, psychiatrically hospitalized adolescents (N=433 at baseline; n=355 at follow-up) who were enrolled in a psychosocial intervention trial during hospitalization. Psychopathology profiles were assessed at baseline. Suicide attempts and rehospitalization were assessed for up to 12 months following discharge.

Results: Latent profile analysis identified four psychopathology profiles: subclinical, primarily internalizing, and moderately and severely dysregulated. At baseline, profiles differed by history of non-suicidal self-injury (NSSI) and multiple suicide attempts (MA) as well as severity of suicide ideation, hopelessness, depressive symptoms, anxiety symptoms, substance abuse, and functional impairment. The dysregulation profiles predicted suicide attempts within 3 months post-discharge. The internalizing profile predicted suicide attempts and rehospitalization at 3 and 12 months.

Limitations: This study's participants were enrolled in a randomized trial and were predominantly female, which limit generalizability. Additionally, only a history of NSSI was assessed.

Conclusions: The dysregulation profile was overrepresented among suicidal youth and associated with impairment in several domains as well as suicide attempts shortly after discharge. Adolescents with a severe internalizing profile also reported adverse outcomes throughout the study period. Psychopathology profiles warrant further examination in terms of their potential predictive validity in relation to suicide-related outcomes.

1. Background

Suicidal adolescents present for mental health treatment with substantial demographic and clinical heterogeneity, which challenges the development of efficacious treatments and preventative interventions (Asarnow and Miranda, 2014; Brent et al., 2013). Limited resources for mental health services necessitate efficient triage decisions for these youth regarding level of care and appropriately personalized follow-up care (Troister et al., 2008). Above and beyond accumulative burden, understanding how multiple risk factors interact and co-occur may aid in the prediction of more imminent suicide-related outcomes (Asarnow and Miranda, 2014; Nock, 2010; Pena et al., 2012).

There are several obstacles in the prediction and prevention of adolescent suicidal behavior, the leading predictor of suicide. One challenge is that although adolescent suicide risk is one of the most common mental health emergencies, actual suicide attempts and mortality have relatively low prevalence rates within the general population (Hawton et al., 2012). As a result, most indices of suicide risk are overly sensitive, resulting in many false positives. Assessment of suicidal thoughts and behaviors only moderately bolsters prediction of future suicidal behaviors, and some measures in this area have predictive validity for some but not all suicidal youth (Ribeiro et al., 2016). For instance, the Suicide Ideation Questionnaire-Jr. (SIQ-Jr.) has shown one-year predictive validity for suicide attempts among psychiatrically hospitalized girls only (King et al., 2014).

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In contrast, a substantial body of research indicates that assessment of multiple domains of impairment aids in characterizing risk for future suicidal behavior. For example, a recent study of adolescents in a general emergency department screened for suicide ideation/attempt, depressive symptoms, and alcohol/substance abuse found that youth endorsing all domains were most likely to engage in suicidal behavior two months later (King et al., 2015). Impairment due to alcohol/substance abuse may be a marker of a developmental trajectory with pervasive externalizing, disinhibited behavior and captures a group of individuals who are likely to engage in harmful mood-dependent behaviors (Zucker et al., 2011). Thus, assessing the co-occurrence of mental health concerns appears to be a promising approach to the prediction of suicidal behavior (Diamond et al., 2010; Wintersteen et al., 2007).

Comorbid internalizing and externalizing symptoms have long been recognized as being particularly relevant to suicidal behavior (Nock et al., 2016). Nationally representative studies indicate that some patterns of comorbidity are differentially associated with suicide-related outcomes among adolescents and adults (Nock et al., 2013, 2008). Internalizing disorders such as mood disorders predict suicidal thoughts but their co-occurrence with externalizing disorders also significantly elevates the probability of future impulsive and suicidal behavior as well as eventual suicide (Brezo et al., 2011; Brook et al., 2015; Kim et al., 2012; Seguin et al., 2014). Individuals affected by comorbid conditions may be at relatively higher risk due in part to an "acquired capacity" for engaging in suicidal behavior through a history of behavioral disinhibition (Van Orden et al., 2010) and experiencing severe agitation (Bentley et al., 2016; Rogers et al., 2016). This constellation of symptoms could lead to a faster transition from suicidal ideation to suicidal behavior (May and Klonsky, 2016; Nock et al., 2016). Advancing our understanding patterns of comorbidity bears substantial importance for the study of suicidal behavior.

One potentially informative comorbid internalizing/externalizing phenotype is the "dysregulation profile," characterized by simultaneously elevated scores on the Anxious/Depressed, Attention Problems, and Aggressive Behavior subscales of the Youth Self-Report (YSR) and Child Behavior Checklist (CBCL).[1] This YSR and CBCL symptom profile has been proposed as a marker of psychopathology as it prospectively predicts the future onset of anxious, mood, disruptive behavior, substance use, and personality disorders as well as suicide-related outcomes, i.e. suicidal ideation, suicide attempts, and psychiatric hospitalization (Althoff et al., 2010a, 2010b; Bellani et al., 2012; De Caluwé et al., 2013; Holtmann et al., 2011). The dysregulation profile may reflect an early-onset limited capacity to cope with aversive affective, cognitive, and behavioral states and risk for more chronic impairment (Beauchaine et al., 2009; Sharp and Fonagy, 2015). Youth who have been psychiatrically hospitalized are at high risk for suicide-related outcomes within months of discharge, and the dysregulation profile could differentiate youth who have relatively higher risk. However, no study to date has examined whether the dysregulation profile or other YSR symptom profiles (e.g. a primarily internalizing or externalizing profile) would aid in predicting recurrent risk.

Previous studies of the dysregulation profile have largely been conducted with community or outpatient clinical samples in which the prevalence and severity of suicide risk is relatively low to moderate (Bellani et al., 2012). As a result, it is unknown whether the dysregulation profile uniquely and specifically predicts suicide-related outcomes or whether it is simply sensitive enough to distinguish between youth in the community with and without psychopathology. Further research is needed to determine whether YSR symptom profiles are prospectively associated with suicide-related outcomes (e.g. suicide attempts and psychiatric hospitalization) among clinically high-risk adolescents. Although the YSR and CBCL are often administered as part of standard clinical practice, to our knowledge no study to date has prospectively examined YSR psychopathology profiles among suicidal youth receiving inpatient services. Such a study could have implications for the individual tailoring of safety planning and post-discharge treatment linkage for youth who experiencing an especially pernicious trajectory of psychopathology and concomitantly long-term mental health care needs. Moreover, the YSR may also be informative in identifying other patterns of psychopathology that predict post-hospitalization outcomes (e.g. pronounced internalizing or externalizing patterns).

The aims of the present study are to (1) examine the prevalence and clinical correlates of YSR symptom profiles among acutely suicidal adolescents at the time of psychiatric hospitalization, and (2) compare profiles in post-discharge rates of suicide attempts and psychiatric rehospitalization. Based on prior research (Bellani et al., 2012; Olino et al., 2012) we hypothesized that at least three YSR profiles will emerge: dysregulated, primarily internalizing, and primarily externalizing. Further, we hypothesized that the dysregulated youth will report more acute psychopathology at baseline and will be more likely to attempt suicide and to be rehospitalized after discharge.

2. Methods

2.1. Participants

This study's sample included 433 suicidal adolescents at baseline (310 females, 123 males; 96.7% of overall sample) and 355 adolescents at follow-up (79.2% of overall sample), ages 13–17 years (M=15.6 years, SD=1.3). Participants were primarily White (85.9%), Black (7.6%), American Indian (2.3%), Asian American (1.2%), and Other (3.0%). Annual income for families ranged from less than $15,000 (5%) to more than $100,000 per year (16%), with the median income in the range of $40,000 - $59,000 per year. Participants with and without data at each time point did not differ on gender, age, race, use of public assistance, or intervention group. Parents and adolescents, respectively, provided informed consent and assent to IRB-approved study protocols.

2.2. Measures

Suicide attempts were assessed using items from the NIMH Diagnostic Interview Schedule (DISC; "Have you tried to kill yourself?"; Shaffer et al., 1998). Follow-up assessments of suicide attempts were conducted at 6 weeks, 3 months, 6 months, and 12 months. The period at each follow-up assessment was intended to capture data since the previous interview and was adjusted to cover any missed assessments. For example, the interviewer prefaced the prompt with "Since the last time we talked to you, which was in [month]."

The Suicidal Ideation Questionnaire—Junior (SIQ-JR; Reynolds and Mazza, 1999) is a 15-item self-report measure that assesses a range of suicidal thoughts on a 7-point time-referential scale ranging from "I never had this thought" to "almost every day". It has excellent test-retest reliability and was predictive of suicidal thoughts and attempts 6 months post-hospitalization in an adolescent inpatient sample. In this sample, the SIQ-JR had an internal consistency of .92.

Baseline history of non-suicidal self-injury (NSSI) was assessed using an item from the Schedule for Affective Disorders and Schizophrenia for School-Aged Children—Present and Lifetime Versions (K-SADS-PL; Kaufman et al., 1997). NSSI was defined as report of "self-mutilation, or other acts done without intent of killing himself."

The Youth Self Report (YSR; Achenbach, 1991) is a 119-item

[1] We discuss comorbid internalizing and externalizing disorder symptoms broadly as well as particular patterns of comorbidity. For consistency with prior literature, our use of the term "dysregulated" refers specifically to the co-occurrence of elevated scores on the Anxious/Depressed, Attention Problems, and Aggressive Behavior subscales of the Youth Self-Report (YSR) and Child Behavior Checklist (CBCL).