Published in final edited form as:

J Clin Child Adolesc Psychol. 2014 ; 43(1): 51–62. doi:10.1080/15374416.2013.843463.

Suicidal Ideation in Anxiety-Disordered Youth: Identifying Predictors of Risk

Kelly A. O'Neil Rodriguez, Ph.D. and Philip C. Kendall, Ph.D.

Temple University

Philip C. Kendall: pkendall@temple.edu

Abstract

Objective—Evidence is mixed regarding an *independent association* between anxiety and suicidality. Beyond associations with demographic factors and depression, do anxiety disorders increase risk for suicidality in youth? Given that not all anxiety-disordered youth experience suicidal ideation, potential predictors of risk also require investigation.

Method—The present study examined (a) the independent relationship between anxiety and suicidal ideation and (b) emotion dysregulation and distress intolerance as predictors of risk for suicidal ideation in a sample of anxiety-disordered youth aged 7–17 ($N = 86$, $M = 11.5$). Youth and their parents reported on suicidality, emotion dysregulation, and distress intolerance. Distress tolerance was also measured by a computerized behavioral task.

Results—Results support an independent relationship between anxiety symptomatology and youth-reported suicidal ideation, controlling for depressive symptoms. Youth self-report of emotion dysregulation and distress intolerance predicted higher levels of suicidal ideation in univariate analyses. In a multivariate analysis including all significant predictors, only anxiety symptomatology uniquely predicted suicidal ideation.

Conclusions—Results provide recommendations for the assessment and treatment of suicidality in anxiety-disordered youth. Suggestions for future research investigating the relationship between anxiety and suicidal ideation are offered.

Keywords

anxiety disorders; suicidal ideation; children; adolescents

Anxiety disorders and suicidality (ideation, plans, attempts, and completed suicide) are both major public health issues in youth: anxiety disorders are among the most common childhood psychological disorders (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003) and suicide is among the leading causes of death in children and adolescents (Hoyert & Xu, 2012). There is ongoing debate regarding an *independent association* between anxiety and suicidality. Beyond associations with demographic factors and depression, do anxiety disorders increase risk for suicidality in youth?

Evidence from epidemiological and community studies is mixed regarding an independent association between anxiety disorders and suicidality in youth, with some studies supporting an independent association beyond demographic factors and depression (e.g., Boden, Fergusson, & Horwood, 2007; Gould et al., 1998) and the findings of other studies failing to

support an independent relationship (e.g., Esposito & Clum, 2002; Foley, Goldston, Costello, & Angold, 2006). Findings from several studies of hospitalized adolescents demonstrate support for an independent association between anxiety and suicidality (e.g., Ghaziuddin, King, Naylor, & Ghaziuddin, 2000; Goldston et al., 2009). However, other findings from treatment-referred samples do not support an independent relationship between anxiety and suicidality (Greene, Chorpita, & Austin, 2009; Strauss et al., 2000). Findings from the limited number of studies of suicidality in samples of anxiety-disordered youth seeking outpatient treatment for their anxiety support an independent association between anxiety and suicidal ideation beyond depression and various demographic and clinical factors (Carter, Silverman, Allen, & Ham, 2008; O'Neil, Puleo, Benjamin, Podell, & Kendall, 2012) and indicate that rates of suicidal ideation in treatment-seeking anxious youth are as high as 41% (O'Neil et al., 2012.). However, most investigations of suicidality in anxiety-disordered youth are limited by reliance on a single-item measure of suicidal ideation. Both previous studies of suicidality in anxiety-disordered youth seeking outpatient treatment for their anxiety (Carter et al., 2008; O'Neil et al., 2012) used the suicidal ideation item on the Children's Depression Inventory as the sole measure of suicidality. Thus, the relationship between anxiety disorders and suicidality in treatment-seeking youth warrants further exploration in studies using comprehensive and continuous measures of suicidality.

Research regarding the relationship between anxiety and suicidality in youth needs to examine possible explanations for the discrepant findings to date. Sample differences may contribute to the inconsistency in findings; for example, there is variability in anxiety severity and the treatment setting across studies, ranging from community samples to psychiatrically hospitalized youth. The relationship between anxiety and suicidality may also vary by subtype of anxiety, explaining some of the inconsistent findings to date. For example, several studies that failed to find support for an independent association between anxiety and suicidality (Esposito & Clum, 2002; Greene et al., 2009) examined this relationship using only generalized anxiety severity or symptomatology, whereas many studies that support the association utilized the range of anxiety disorders or broader anxiety symptom measures (Carter et al., 2008; Ghaziuddin, et al., 2000; Gould et al., 1998, O'Neil et al., 2012). The possibility that specific anxiety disorders have different relationships to suicidal ideation warrants investigation.

Another possible explanation for the discrepant findings may be that anxiety has different relationships with the specific components of the broad spectrum of suicidality (e.g., suicidal ideation versus suicide attempts) and previous research regarding anxiety and suicidality has not always considered these components separately. Given the inconsistent findings regarding anxiety and general suicidality, perhaps anxiety disorders are specifically predictive of the suicidal ideation or desire component of suicidality (rather than the capability to engage in suicidal behavior). Given this possibility, the present study examined the suicidal ideation component of suicidality. It may be that the constant high level of anxiety experienced by youth with an untreated anxiety disorder leads to a perceived hopelessness about the possibility of relief from this anxiety, and then consideration of suicide as an avenue for relief from their symptoms. This path may represent a link between anxiety and suicidal ideation that can occur independently of depression.

However, despite high rates of suicidal ideation in anxiety-disordered youth, the majority do not endorse suicidal ideation (O'Neil et al., 2012). Rather, there may be other predictors of suicidal ideation in anxiety-disordered youth, such as emotion dysregulation or distress intolerance. Youth who have greater difficulty modulating and tolerating negative emotions may more likely to think about suicide as a method to escape or find relief from their distress. Both emotion dysregulation and distress intolerance have demonstrated or theorized associations with both anxiety and suicidality in youth.

Emotion regulation has been defined as the extrinsic and intrinsic processes that monitor, evaluate, and modify emotional reactions in terms of intensity and length (Thompson, 1994). Emotion dysregulation has been associated with child psychopathology, generally (Cicchetti, Ackerman, & Izard, 1995; Keenan, 2000), and anxiety and depression, specifically. Findings of studies from community samples of youth support the link between emotion dysregulation and internalizing symptoms (e.g., Garber, Braafladt, & Weiss, 1995; Zeman, Shipman, & Suveg, 2002). Anxiety-disordered youth show poorer understanding of hiding emotional expressions and the notion that one can change his/her emotions (Southam-Gerow & Kendall, 2000). These youth also display more dysregulation in their expression of worry, sadness, and anger and less adaptive emotion coping than youth without anxiety disorders (Suveg & Zeman, 2004). Evidence indicates that difficulties in emotion regulation are associated with suicidality in youth. Emotion dysregulation predicted suicidality (ideation, plans, and attempts) in youth with major depressive disorder (Tamas et al., 2007) and was related to suicidal behavior among hospitalized adolescents (Zlotnick, Donaldson, Spirito, & Pearlstein, 1997). The demonstrated relationships to both anxiety and suicidality encourage the investigation of emotion dysregulation as a predictor of suicidal ideation in anxiety-disordered youth.

Distress tolerance can be defined as the ability to experience and withstand emotional distress (Simons & Gaher, 2005). Although distress tolerance has not been frequently studied in anxiety-disordered youth, low distress tolerance was related to internalizing symptoms for females in a sample of children recruited from the community (Daughters et al., 2009). In young adult samples, low distress tolerance has been associated with anxiety symptoms (Keough, Riccardi, Timpano, Mitchell, & Schmidt, 2010), worry (Huang, Szabo, & Han, 2009), hoarding (Timpano, Buckner, Richey, Murphy, & Schmidt, 2009), and depression (Ellis, Fischer, & Beevers, 2010). There is little research available regarding the relationship between distress tolerance and suicidality, despite the frequent theoretical connection made between distress tolerance and suicidality or self-harm behavior (e.g., Klonsky, 2007; Linehan, 1993). However, there is evidence that adolescent self-injurers show lower distress tolerance than non-injurers (Nock & Mendes, 2008) and that low distress tolerance is correlated with suicidal ideation in young adults (Anestis, Bagge, Tulle, & Joiner, 2011).

The present study examined (a) the independent relationship between anxiety and suicidal ideation among treatment-seeking youth, controlling for depressive symptoms and (b) emotion dysregulation and distress intolerance as potential predictors of suicidal ideation in anxiety-disordered youth. This study builds upon prior research by examining suicidality in treatment-seeking youth with principal anxiety disorders with a continuous measure and multiple informants. Emotion dysregulation and distress intolerance were examined as potential predictors of suicidal ideation in anxiety-disordered youth using youth-report and parent-report, as well as a behavioral indicator of distress tolerance. It was hypothesized that more severe youth-reported anxiety symptomatology would predict higher levels of youth-reported suicidal ideation and the presence of parent-reported suicidality, controlling for youth-reported depressive symptomatology. It was also hypothesized that greater emotion dysregulation as measured by youth- and parent-report and lower distress tolerance as measured by youth- and parent-report and a behavioral task would predict higher levels of youth-reported suicidal ideation and the presence of parent-reported suicidality in anxiety-disordered youth. A secondary hypothesis was that emotion dysregulation and distress tolerance will be uniquely associated with youth-reported suicidal ideation, controlling for anxiety and depressive symptomatology. Given the lack of previous research on these factors, no *a priori* hypotheses were made regarding the relative contribution of each factor in predicting suicidal ideation.

Method

Participants

Youth referred to an urban university-based outpatient specialty clinic regarding concerns about anxiety were invited to participate. Youth were included in the study if they (a) were aged 7-17 years at the time of the assessment, (b) met DSM-IV diagnostic criteria for an anxiety disorder (Separation Anxiety Disorder (SAD), Generalized Anxiety Disorder (GAD), Social Phobia (SoP), Specific Phobia (SP), Obsessive Compulsive Disorder (OCD), Panic Disorder (PD), or Anxiety Disorder- Not Otherwise Specified (AD-NOS), and (c) read/spoke English and had at least one English-speaking parent. Youth were excluded from the study if they were diagnosed with a principal disorder other than an anxiety disorder but were not excluded on the basis of non-principal comorbidities in order to increase external validity of the study.

Participants were 86 youth aged 7-17 ($M = 11.50$, $SD = 3.09$) and their parents (82 mothers and 4 fathers). Of the 86 participating youth, 52.3% were male; 84.9% were Caucasian, 4.7% were Hispanic, 3.5% were African-American, 3.5% were Asian-American, and 3.5% declined to self-identify race/ethnicity. Total household income was reported as \$0-19,999 (8.8%), \$20,000-39,999 (10.1%), \$40,000-59,999 (16.3%), \$60,000-79,999 (20.0%), and over \$80,000 (45.0%). Principal diagnoses were as follows: 39.5% met criteria for a principal diagnosis of GAD, 27.9% for SocP, 12.8% for SP, 11.6% for SAD, 3.5% for OCD, 3.5% for PD, and 1.2 % for AD-NOS. Diagnoses were based on structured interviews administered separately to youth and their parents. Composite diagnoses were determined using the “or” rule: if either parent(s) or child endorsed criteria the clinician deemed consistent with a diagnosis (i.e., warranting a clinical severity rating (CSR) of 4 or greater on the Anxiety Disorders Interview Schedule for Children (ADIS-IV-C/P), the diagnosis was assigned. The diagnosis with the highest composite CSR rating was considered to be the principal diagnosis. Of the 86 anxiety-disordered youth, 69 (80.2%) met criteria for a comorbid anxiety disorder, 13 (15.1%) met criteria for a current depressive disorder (MDD or dysthymic disorder), 20 (23.3%) met criteria for attention deficit hyperactivity disorder (ADHD), and 7 (8.1%) met criteria for oppositional defiant disorder (ODD).

Measures

Assessments included a semi-structured diagnostic interview, self- and parent-report, and a behavioral measure of distress tolerance. The ADIS-IV-C/P assessed for anxiety disorders and comorbid conditions. Participants and their parents completed measures of anxious and depressive symptoms, emotion regulation, distress tolerance, and suicidality. Participants completed a computerized behavioral task to assess distress tolerance and a measure of negative affect before and after the task (manipulation check).

Clinician Administered Measures

Anxiety Disorders Interview Schedule for Children (ADIS-IV-C/P; Silverman & Albano, 1996)—The ADIS-IV-C/P is a semi-structured interview for diagnosing DSM-IV anxiety disorders in youth. The ADIS-IV-C/P can also be used to assess comorbid conditions, including depressive disorders and externalizing disorders. It has been found to have excellent test-retest reliability (Silverman, Saavedra, & Pina, 2001). Good to excellent inter-rater reliability has been reported for the ADIS-IV-C/P for both anxiety disorders and comorbid conditions such as depressive disorders and externalizing disorders (Lyneham, Abbott, & Rapee, 2007). There is also support for the concurrent validity of the ADIS-IV-C/P (Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Diagnosticians provide a Clinical Severity Rating (CSR) on a 9-point scale (0-8) with a minimum rating of 4 required for a diagnosis. In the present study, the ADIS-IV-C/P was administered separately to

parents and child by advanced graduate students trained to reliability (Cohen's Kappa at or above .85). ADIS-IV-C/P diagnosticians completed didactic training, viewing of live ADIS-IV-C/P administrations by reliable interviewers, and the administration of ADIS-IV-C/P interviews in the presence of a senior interviewer. To meet criteria, diagnostics of the training diagnostician had to match those of the senior interviewer on at least three out of four consecutive administrations.

Children's Global Assessment Scale (CGAS; Shaffer et al., 1983)—The CGAS is a clinician-rated measure of youth's level of global functioning. The clinician rates impairment on a 1-100 scale using anchor points and behavioral descriptions. High test-retest reliability, inter-rater reliability, and discriminant validity have been demonstrated for the CGAS (Shaffer et al., 1983).

Child Self-report Measures

Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997)—The MASC is a 39-item self-report measure of children's anxiety symptoms. Children report how they have been thinking, feeling, or acting over the last two weeks on a scale of 0 to 3 (0= *never* and 3= *often*). The MASC has been found to have excellent internal consistency, test-retest reliability (March et al., 1997) and strong convergent validity with other self-report measures of anxiety symptoms and diagnoses (Villabo, Gere, Torgersen, March, & Kendall, 2012). In the present study, internal consistency (Cronbach's α) for the MASC was .91.

Children's Depression Inventory (CDI; Kovacs, 1981, 1992)—The CDI is a 27-item self-report measure of children's depressive symptoms. Each item consists of three statements that are scored in increasing severity from 0 to 2. Total scores range from 0 to 54. Internal consistency and moderate test retest reliability have been reported (Saylor, Finch, Spirito, & Bennett, 1984). The CDI has been found to have good predictive and discriminant validity as it predicts depressive disorders and differentiates depressive disorders from other disorders (Timbremont, Braet, & Dreessen, 2004). In the present study, internal consistency (Cronbach's α) for the CDI was .81.

Suicidal Ideation Questionnaire- Junior (SIQ-JR; Reynolds, 1988)—The SIQ-JR is a 15-item self-report measure of youth's suicidal ideation. Youth rank each statement on a scale of 0 to 6 (0= *I never had this thought* and 6= *everyday*). Scores from each item are summed to create a total score which reflects the overall severity of suicidal ideation. The SIQ-JR has excellent test-retest reliability (Reynolds & Mazza, 1999), internal consistency (Reynolds, 1988; Reynolds & Mazza, 1999), and strong convergent validity with other measures of suicidality and suicide attempts (Reynolds, 1992; Reynolds & Mazza, 1999). Normative data are available for the SIQ-JR. Though the SIQ-JR was developed for use with early adolescents, it has been used successfully with younger children (e.g., Greene et al., 2009; Reynolds & Mazza, 1999). In the present study, internal consistency (Cronbach's α) for the SIQ-JR was .87.

Children's Emotion Management Scales (CEMS; Zeman, Shipman, & Penza-Clyve, 2001; Zeman, Cassano, Suveg, & Shipman, 2010)—The CEMS scales assess children's self-report of sadness, anger, and worry emotion regulation. Youth rank the frequency of their use of various emotion regulation strategies on a scale of 1 to 3 (1= *hardly ever* and 3= *often*). Each emotion scale has three subscales: Inhibition (suppression of emotional expression), Dysregulated Expression (culturally inappropriate expression of negative emotions), and Emotion Regulation Coping (healthy regulation of negative emotions through constructive control). The CEMS have demonstrated acceptable reliability

and convergent validity with other measures of emotion regulation (Zeman et al., 2001; Zeman et al., 2010). The Dysregulated Expression subscale for self-report of sadness, anger, and worry emotion regulation was used in the current study. Internal consistency (Cronbach's α) for this subscale was .72.

Distress Tolerance Scale (DTS, Simons & Gaher, 2005)—The DTS is a 15-item self-report measure of an individual's experience of and tolerance for negative emotions (e.g., “Feeling distressed or upset is unbearable to me.”) Although the DTS was developed for use with adults, with the author's permission (personal communication, 2011), the language of several items was adapted for use with children (e.g., “tolerate” was also defined as “put up with”). Youth rated each statement on a scale from 1 to 5 (1= *Strongly agree* and 5= *Strongly disagree*). High scores on the DTS indicate high distress tolerance. Good internal consistency and reliability have been reported for the DTS, as well as good convergent and discriminant validity with measures of positive and negative affectivity (Simon & Gaher, 2005). In the present study, internal consistency (Cronbach's α) for the DTS youth report was .89. Youth report on the DTS was significantly negatively related to the CEMS youth report of emotion dysregulation, providing some initial evidence for convergent validity of the adapted measure.

Behavioral Task

Behavioral Indicator of Resiliency to Distress (BIRD; Lejuez, Daughters, Danielson, & Ruggiero, 2006)—The BIRD is a computerized distress tolerance task based on similar adult tasks. The child uses the computer mouse to quickly respond to visual stimuli. If the child is successful, a point is earned and the computer makes a pleasant sound (bird chirping). If the child is unsuccessful, no point is earned and the computer makes a loud and unpleasant noise. The BIRD has three levels. The first level lasts three minutes and is used to index skill level. The second, more challenging level lasts five minutes. The final level is very challenging and can last up to five minutes. There is an escape option during the entirety of the final level. The participant is told that they can quit the game at any time, but that their prize is dependent on their performance on the task. Distress tolerance is operationalized (on a continuum) as the length of time the child persists on the final level or categorically as whether or not the child quit the final level before the end of the five minutes. Scores on the first two levels can be used to control for the effects of skill on persistence on the final level. The BIRD has been used previously in early adolescent samples and distress tolerance as measured by the BIRD has been found to be associated with internalizing symptoms in a community sample of youth (Daughters et al., 2009).

Positive and Negative Affectivity Scale for Children (PANAS-C; Laurent et al., 1999)—A 10-item version of the PANAS-C was administered before the first level and after the second level of the BIRD as a manipulation check for change in negative emotion. The PANAS-C is a self-report measure of the degree to which children feel various positive and negative emotions. Children rate items on a scale from 1 to 5 (1= *very slightly or not at all* and 5= *extremely*). There is both a positive (PA) and negative affect (NA) subscale. The PANAS-C has demonstrated strong reliability (Laurent et al., 1999). The PANAS-C has also shown convergent validity through positive correlations of the NA subscale and measures of anxiety and depression and negative correlations of the PA subscale and a measure of depression (Laurent et al., 1999).

Parent-report Measures

Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001)—The CBCL is a 112-item parent-completed measure of child behavioral problems and social competencies. Items are rated on a scale of 0 to 2 (0= *not true*, 1= *sometimes true*, 2= *very true or often*

true). These ratings generate a *T* score to compare the child's functioning to same sex and same age peers. Good validity, internal consistency, and test-retest reliability have been reported for the CBCL (Achenbach & Rescorla, 2001). Two questions on the CBCL assess parent report of their child's suicidal talk and behavior (i.e., "Deliberately harms self or attempts suicide," "Talks about killing self").

Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997)—The ERC is a 24-item parent-completed measure of children's emotion management strategies. Items are rated on a 4-point Likert scale. The ERC has two subscales: Emotion Regulation (appropriate emotional expression and emotional self-awareness), and Lability/Negativity (lability and dysregulated negative affect). Adequate reliability and convergent validity with other measures of emotion regulation have been reported for the ERC (Shields & Cicchetti, 1997). The Lability/Negativity subscale was used in the present study. Internal consistency (Cronbach's α) for this subscale was .79.

Distress Tolerance Scale (DTS, Simons & Gaher, 2005)—Parents completed a parent version of the DTS, created for this study with permission from the author (personal communication, 2011). Parents rated their child's experience of negative emotions (e.g., "My child can tolerate being distressed or upset as well as most children.") Parents rated each statement on a scale from 1 to 5 (1 = *Strongly agree* and 5 = *Strongly disagree*). High scores on the DTS indicate high distress tolerance. In the present study, internal consistency (Cronbach's α) for the DTS parent report was .88.

Procedure

All data were obtained prior to the onset of treatment. The procedure consisted of a diagnostic interview, youth-report and parent-report forms, and a computerized behavioral task. Prior to participation, parents provided consent and youth provided assent. Diagnostic interviews were administered separately to parents and child. Following the interview, youth and their parent(s) completed self-report forms. Finally, youth completed the behavioral task of distress tolerance. Youth completed the self-report manipulation check for negative affect before and after the distress tolerance task. Youth were de-briefed following the behavioral task and allowed to choose a small prize for participation. Youth and parent assessment instruments were reviewed for suicide risk prior to the family's departure from the clinic. Parents were informed of any suicidality endorsed by their child. A more detailed suicide risk assessment was conducted for children endorsing suicidal intent, plans, or behaviors (rather than ideation).

Data Analytic Plan

Demographic factors (e.g., age, gender, family SES) and participant characteristics (principal diagnosis, level of global functioning) were examined by suicidal ideation status (operationalized as a zero or non-zero score on the SIQ-JR) using t-tests and chi-square tests. The relationship of these factors to total score on the SIQ-JR was also examined using t-tests and linear regression. Any factors that were significantly associated with suicidal ideation in the sample were included as covariates in subsequent analyses.

A hierarchical multiple regression examined the independent relationship between youth-reported anxiety symptomatology (total score on the MASC) and suicidal ideation (total score on the SIQ-JR). Depressive symptomatology (total score on the CDI) was entered in Step 1 of the regression to control for its contribution to the association. A logistic regression analysis tested the hypothesis that anxiety symptomatology predicts presence of suicidal talk and behavior on parent report (score > 0 on CBCL suicidality items), after controlling for depressive symptomatology.

A series of linear and logistic regression analyses tested whether more severe scores on the various measures of emotion dysregulation and distress tolerance predicted higher levels of self-reported suicidal ideation and the presence of parent-reported suicidality, after controlling for depressive symptomatology. In the case of the behavioral distress tolerance task, skill level on the task was also controlled in each regression. The secondary hypothesis regarding the unique contributions of emotion dysregulation and distress intolerance in predicting suicidal ideation in anxiety-disordered youth was tested with a hierarchical multiple regression analysis, controlling for anxiety symptomatology and depressive symptomatology. Only the variables significantly correlated with suicidal ideation in the univariate analyses were included in the multiple regression analysis.

Results

Preliminary Analyses

None of the demographic factors (age, gender, race, or family SES) or general clinical characteristics (principal diagnosis, level of global functioning) was significantly associated with youth self-report of suicidal ideation either when suicidal ideation was examined continuously or categorically (Table 1) or with parent report of suicidality. Thus, none of these factors were included as covariates in subsequent analyses. Rates of comorbid depressive disorders were also not significantly associated with youth self-report of suicidal ideation. Higher levels of youth-reported depressive symptomatology on the CDI significantly predicted youth self-report of suicidal ideation both when examined continuously, $B = .46, p < .001$, and categorically, $t(84) = 2.51, p = .01$, and also predicted parent-report of suicidality, $t(84) = 2.53, p = .01$. Thus, depressive symptomatology was included as a covariate in subsequent analyses.

Rates and Severity of Suicidal Ideation

With regards to youth self-report of suicidality, scores on the SIQ-JR ranged from 0 to 49 ($M = 5.29, SD = 8.53$).¹ Of the 86 participating youth, 50 youth (58.1%) reported some level of suicidal ideation (a non-zero total score on the SIQ-JR). Only 2 (2.3%) youth had a total score on the SIQ-JR above the clinical cut-off (total score > 31). Only 9 (10.5%) youth had any level of suicidal talk or behavior according to parent report (a non-zero score on the CBCL suicidality items). During the assessment, no youth reported current suicidal behavior.

Relationships among Predictor Variables

To ensure that assumptions of multiple and logistic regression were met, the predictor variables were examined for multicollinearity. Tolerance statistics below .1, VIF statistics above 10, and Pearson's correlations above .8 may indicate problems with multicollinearity (Fields, 2005). An examination of the Tolerance and VIF statistics and Pearson's correlations indicated that there was not multicollinearity among predictor variables (Table 2).

Independent Relationship between Anxiety and Suicidal Ideation

Anxiety symptomatology as reported by youth on the MASC independently predicted youth-reported suicidal ideation on the SIQ-JR, above and beyond the relationship accounted for by depressive symptomatology, $\beta = .42, p < .001$ (Table 3). Anxiety symptomatology was

¹Given concerns about the non-normal distribution of the SIQ scores, all analyses involving SIQ scores were also conducted using a categorical approach (SIQ score of zero or non-zero) in logistic regression, as well as using a log transformation of the SIQ scores in multiple regression. There were no differences in the significance of any reported findings using these alternate analytic approaches. Thus, multiple regression analyses using non-transformed SIQ scores are presented for ease of interpretation.

not significantly associated with suicidal talk or behavior on parent report (score > 0 on CBCL suicidality items) after controlling for depressive symptomatology (Table 4).

Emotion Regulation and Suicidal Ideation

Youth-reported suicidal ideation—More severe emotion dysregulation as reported by youth on the CEMS significantly predicted higher levels of youth-reported suicidal ideation, after controlling for depressive symptomatology, $\beta = .29, p = .02$. Parent report of emotion dysregulation on the ERC was not predictive of youth-reported suicidal ideation, controlling for depressive symptomatology.

Parent-reported suicidal ideation—More severe emotion dysregulation as reported by youth on the CEMS did not predict the presence of parent-reported suicidality after controlling for depressive symptomatology. More severe emotion dysregulation (lability/negativity) as reported by parents on the ERC did not predict the presence of parent-reported suicidality after controlling for depressive symptomatology.

Distress Tolerance and Suicidal Ideation

Behavioral indicator of distress tolerance—Youth persisted on the BIRD for an average of 163.4 seconds ($SD = 107.5$). Of the 75 youth who completed the BIRD task, 66 (76.7%) quit the task before the five minute time limit. However, youth did not report a significant increase in negative affect during the first two levels of the task as measured by the PANAS-C, indicating that youth did not find the task psychologically stressful according to their own report.

Youth-reported suicidal ideation—Youth self-report of distress tolerance significantly predicted youth self-report of suicidal ideation, such that lower levels of distress tolerance on the DTS predicted higher scores on the SIQ-JR, controlling for depressive symptomatology, $\beta = -.29, p = .009$. Parent-report of distress tolerance on the DTS was not significantly predictive of youth self-report of suicidal ideation, controlling for depressive symptomatology. Duration of persistence on the behavioral distress tolerance task, controlling for skill level on the task and depressive symptomatology, was not predictive of higher levels of youth-reported suicidal ideation. Similarly, distress tolerance classification (low or high, operationalized as terminated the task or persisted for the duration of the task), controlling for skill level on the task and depressive symptomatology, was unrelated to youth-reported suicidal ideation.

Parent-reported suicidal ideation—Youth self-report of distress tolerance on the DTS was not predictive of parent report of suicidality, controlling for depressive symptomatology. Parent report of distress tolerance on the DTS was also unrelated to parent report of suicidality, controlling for depressive symptomatology. Duration of persistence on the distress tolerance task, controlling for skill level on the task and depressive symptomatology, was unrelated to presence of parent-reported suicidality. Similarly, distress tolerance classification (low or high), controlling for skill level on the task and depressive symptomatology, was unrelated to presence of parent-reported suicidality.

Unique Contributions of Risk for Suicidal Ideation

In a multivariate analysis comparing all predictors with a significant relationship to youth-reported suicidal ideation in the univariate analyses, only youth self-report of anxiety symptomatology was uniquely predictive of youth self-report of suicidal ideation, $\beta = .36, p = .008$. The relationships to suicidal ideation of depressive symptomatology (CDI total

score), youth report of emotion dysregulation (CEMS), and youth report of distress tolerance (DTS), were all reduced to nonsignificance in the multivariate analysis (Table 5).

Discussion

The present study, unlike previous work, examined the association between anxiety and suicidal ideation with a *continuous* measure of suicidal ideation and *multiple informants* regarding suicidality. The findings demonstrated an independent relationship between youth-reported broad anxiety symptomatology and youth-reported suicidal ideation, above and beyond the association accounted for by youth-reported depressive symptoms. This finding is consistent with the results of the two studies previously conducted in similar samples of anxiety-disordered youth in outpatient clinics (Carter et al., 2008; O'Neil et al., 2012). Apparently, anxiety, not just depression, is associated with suicidal ideation in youth seeking outpatient treatment for their anxiety disorder.

The current findings support youth-reported emotion dysregulation and distress intolerance as predictors of risk for youth-reported suicidal ideation in anxiety-disordered youth. These findings are consistent with the relationship between emotion dysregulation and suicidality demonstrated in youth with other psychological disorders (e.g., Tamas et al., 2007; Zlotnick et al., 1997) and the relationship between distress intolerance and self-injury in adolescents (Nock & Mendes, 2008) and distress tolerance and suicidal ideation in young adults (Anestis et al., 2011). However, this study provides the first evidence of these factors as predictors of risk for suicidal ideation in anxiety-disordered youth.

Only anxiety was uniquely predictive of youth-reported suicidal ideation in a multivariate analysis including youth report of anxiety, depressive symptomatology, emotion dysregulation, and distress tolerance as predictors of suicidal ideation. This finding was contrary to our hypothesis and the limited previous research on these relationships in a young adult nonclinical sample (e.g., Anestis et al., 2011). It seems that in an anxiety-disordered sample, the severity of the youth's anxiety is a stronger predictor of risk for suicidal ideation than youth-reported emotion dysregulation or distress intolerance. It may be that regardless of a youth's emotional regulation or distress tolerance skills, a persistent high level of anxiety brings a perceived hopelessness about the possibility of relief from this anxiety and subsequent consideration of suicide as an avenue for relief from these symptoms. However, given the extremely limited research on these relationships, further investigation is required to examine the relationships among anxiety, depression, emotion dysregulation, and distress tolerance, including their interactions, in predicting risk for suicidal ideation, in both clinical and nonclinical samples of youth. Specifically, investigations of the relationships among these variables across multiple timepoints are needed to clarify their temporal and risk relationships.

In the present study, 58.1% of anxiety-disordered youth endorsed the presence of suicidal ideation on a continuous measure. This relatively high rate of suicidal ideation as compared to that in other studies using single-item measures (e.g., O'Neil et al., 2012) may suggest the importance of asking youth about suicidal ideation using multiple items to capture the full range of suicidal thoughts (e.g., from "I wished I were dead" to "I thought about killing myself,") as the inclusion of both passive and active suicidal ideation items rather than a single item assessing active suicidal ideation may explain the higher rate in the current study. Additionally, asking youth to report on suicidality over a longer period of time (i.e., past month on the SIQ-JR versus past two weeks on the CDI) likely contributes to the higher rates in the current study; this may be an important clinical consideration when assessing suicidality in anxiety-disordered youth. In contrast, only 10.5% of parents reported suicidal talk or behavior for their anxiety-disordered youth. This informant discrepancy is consistent

with generally modest levels of cross-informant agreement regarding child psychopathology (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005) and specifically with low levels of parent-child agreement regarding suicidal ideation in psychiatrically hospitalized adolescents (Klaus, Mobilio, & King, 2009; Prinstein, Nock, Spirito, & Grapentine, 2001). Notably, youth and parents were not asked the same questions regarding suicidality, as youth reported on suicidal thoughts and parents reported on suicidal talk and behavior, given their inability to directly report on their child's thoughts. However, youth may be particularly reluctant to report on suicidal thoughts to their parents, underscoring the importance of multi-informant assessment for suicidal ideation.

It is noteworthy that only youth-report of distress tolerance predicted suicidal ideation in the present study, and that youth-report, parent-report, and the behavioral indicator of distress tolerance were not significantly correlated. There are several possible explanations. First, it is perhaps not surprising that youth and parents disagree regarding their report of youth's level of distress tolerance, given the low level of informant agreement for youth and their parents (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005). Additionally, although the BIRD task has been reported to be successful at increasing psychological stress in previous studies, the youth in the current study did not report an increase in negative affect, suggesting it was not a behavioral indicator of distress tolerance. Finally, similar measurement discrepancy is reported in the adult distress tolerance literature as self-report and behavioral measures of distress tolerance are not significantly correlated, suggesting the possibility that the two methods may measure separate constructs of sensitivity to distress and the ability to persist in a task when distressed (McHugh et al., 2011). This possibility warrants further investigation in future studies of distress tolerance in youth.

Limitations

Study limitations include the lack of racial/ethnic diversity in the sample, limiting generalizability, as well as the cross-sectional design. Future research should examine the relationship among potential predictors of risk and suicidal ideation in anxiety-disordered youth over multiple timepoints to identify the temporal risk relationships. The present study examined two potential predictors of risk for suicidal ideation among anxiety-disordered youth, and other potential predictors could be examined in further research (e.g., impulsivity, negative life events). Additionally, potential mediators of the relationship between anxiety and suicidal ideation, such as constructs included in the Interpersonal Theory of Suicide (Van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010) or escape theory of suicide (Baumeister, 1990), could be explored. Future studies with sufficient numbers of youth with each specific anxiety disorder could explore the relationships between specific anxiety disorders and suicidal ideation in youth. Additionally, given that only a small percentage of youth in the present sample reported clinically significant levels of suicidal ideation, future studies may examine these relationships using a sample of youth with a wider range of suicidality. It is of note that all the significant findings regarding predictors of suicidal ideation in anxious youth were within-informant (i.e., youth-reported predictors and youth-reported suicidal ideation). As noted above, informant discrepancy regarding youth psychopathology may play a role and youth may be the most accurate reporters of their own suicidal ideation. However, it remains possible that the significant findings in the present study were due to shared measurement variance. Future research with larger sample sizes and multiple measures of constructs may benefit from using structural equation modeling (SEM) to create latent variables to explore the common variance among measures and informants rather than the discrepancies.

Implications for Research, Policy, and Practice

The independent relationship between anxiety and suicidal ideation in youth supports the need for assessment of suicidality in anxiety-disordered youth presenting for outpatient treatment, regardless of levels of depressive symptomatology or whether parents raise concerns for suicidality. Suicidality assessment for anxiety-disordered youth may include items from self-report measures of depression (e.g., CDI), self-report measures of suicidality (e.g., SIQ or SIQ-JR), and/or questions from semi-structured interviews (e.g., ADIS-IV-C/P). However, many semi-structured diagnostic interviews used in outpatient clinics, including the gold standard interview for childhood anxiety disorders (the ADIS-IV-C/P), include suicidality queries only within modules on depressive disorders (e.g., major depressive disorder), which may be subject to discontinue criteria if the youth does not endorse other symptoms of depression. The results of the present study endorse the recommendation that interview questions regarding suicidality be administered to anxiety-disordered youth regardless of whether they endorse other symptoms of depression.

Given that emotion dysregulation and distress intolerance predicted suicidal ideation in the present study and that current CBT treatments for childhood anxiety disorders (e.g., the *Coping cat program*, Kendall & Hedtke, 2006) do not specifically address emotion regulation or distress tolerance skills, modifications to these treatments could be considered to reduce risk for suicidal ideation. Fortunately, there is initial support for several emotion-focused treatments for anxiety disorders in youth (Ehrenreich et al., 2009; Suveg, Kendall, Comer, & Robin, 2006). Current treatments may also be supplemented to include additional emphasis on distress tolerance skills as a target of treatment, as in dialectical behavior therapy (DBT; Linehan, 1993).

Acknowledgments

This article was supported by a Fellowship from the American Psychological Foundation awarded to Kelly A. O'Neil Rodriguez and facilitated by funding from NIMH (MH063747) awarded to Philip C. Kendall.

References

- Achenbach TM, McConaughy SH, Howell CT. Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*. 1987; 101:213–232. [PubMed: 3562706]
- Achenbach, TM.; Rescorla, LA. Manual for the ASEBA school-age forms & profiles. Burlington: University of Vermont, Research Center for Children, Youth, & Families; 2001.
- Anestis MD, Bagge CL, Tulle MT, Joiner TE. Clarifying the role of emotion dysregulation in the interpersonal-psychological theory of suicidal behavior in an undergraduate sample. *Journal of Psychiatric Research*. 2011; 45:603–611. [PubMed: 21092986]
- Baumeister RF. Suicide as escape from self. *Psychological Review*. 1990; 97:90–113. [PubMed: 2408091]
- Boden JM, Fergusson DM, Horwood LJ. Anxiety disorders and suicidal behaviours in adolescence and young adulthood: findings from a longitudinal study. *Psychological Medicine*. 2007; 37:431–440. [PubMed: 17109776]
- Carter R, Silverman WK, Allen A, Ham L. Measures matter: The relative contribution of anxiety and depression to suicidal ideation in clinically referred anxious youth using brief versus full length questionnaires. *Depression and Anxiety*. 2008; 25:E27–E35. [PubMed: 18729149]
- Cicchetti D, Ackerman BP, Izard CE. Emotions and emotion regulation in developmental psychopathology. *Development and Psychopathology*. 1995; 7:1–10.
- Costello EJ, Mustillo S, Erkanli A, Keeler G, Angold A. Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*. 2003; 60:837–844. [PubMed: 12912767]

- Daughters SB, Reynolds EK, MacPherson L, Kahler CW, Danielson CK, Zvolensky M, Lejuez CW. Distress tolerance and early adolescent externalizing and internalizing symptoms: The moderating role of gender and ethnicity. *Behavior Research and Therapy*. 2009; 47:198–205.
- De Los Reyes A, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*. 2005; 131:483–509. [PubMed: 16060799]
- Ehrenreich JT, Goldstein CR, Wright LR, Barlow DH. Development of a unified protocol for the treatment of emotional disorders in youth. *Child & Family Behavior Therapy*. 2009; 31:20–37. [PubMed: 19617930]
- Ellis AJ, Fischer KM, Beevers CG. Is dysphoria about being red and blue? Potentiation of anger and reduced distress tolerance among dysphoric individuals. *Cognition and Emotion*. 2010; 24:596–608.
- Esposito CL, Clum GA. Psychiatric symptoms and their relationship to suicidal ideation in a high-risk adolescent community sample. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2002; 41:44–51. [PubMed: 11800204]
- Fields, A. *Discovering statistics using SPSS*. London: Sage Publications; 2005.
- Foley DL, Goldston DB, Costello EJ, Angold A. Proximal psychiatric risk factors for suicidality in youth. *Archives of General Psychiatry*. 2006; 63:1017–1024. [PubMed: 16953004]
- Garber J, Braafladt N, Weiss B. Affect regulation in depressed and nondepressed children and young adolescents. *Development and Psychopathology*. 1995; 7:93–115.
- Ghaziuddin N, King CA, Naylor MW, Ghaziuddin M. Anxiety contributes to suicidality in depressed adolescents. *Depression and Anxiety*. 2000; 11:134–138. [PubMed: 10875056]
- Goldston DB, Daniel SS, Erkanli A, Reboussin BA, Mayfield A, Frazier PH, Treadway SL. Psychiatric diagnoses as contemporaneous risk factors for suicide attempts among adolescents and young adults: Developmental changes. *Journal of Consulting and Clinical Psychology*. 2009; 77:281–290. [PubMed: 19309187]
- Gould MS, King R, Greenwald S, Fisher P, Schwab-Stone M, Kramer R, et al. Shaffer D. Psychopathology associated with suicidal ideation and attempts among children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1998; 37:915–923. [PubMed: 9735611]
- Greene FN, Chorpita BF, Austin AA. Examining youth anxiety symptoms and suicidal ideation in the context of the tripartite model of emotion. *Journal of Psychopathology and Behavioral Assessment*. 2009; 31:405–411.
- Hoyert DL, Xu J. Deaths: Preliminary data for 2011. *National Vital Statistics Reports*. 2012; 61:1–65.
- Huang K, Szabo M, Han J. The relationship of low distress tolerance to excessive worrying and cognitive avoidance. *Behaviour Change*. 2009; 26:223–234.
- Keenan K. Emotion dysregulation as a risk factor for child psychopathology. *Clinical Psychology: Science and Practice*. 2000; 7:418–434.
- Kendall, PC.; Hedtke, K. *Cognitive-behavioral therapy for anxious children: Therapist manual*. 3rd. Ardmore, PA: Workbook Publishing; 2006.
- Keough ME, Riccardi CJ, Timpano KR, Mitchell MA, Schmidt NB. Anxiety symptomatology: The association with distress tolerance and anxiety sensitivity. *Behavior Therapy*. 2010 10.1016/j.beth.2010.04.002.
- Klaus NM, Mobilio A, King CA. Parent-adolescent agreement concerning adolescents' suicidal thoughts and behaviors. *Journal of Clinical Child & Adolescent Psychology*. 2009; 38:245–255. [PubMed: 19283602]
- Klonsky ED. The functions of deliberate self-injury: A review of the evidence. *Clinical Psychology Review*. 2007; 27:226–239. [PubMed: 17014942]
- Kovacs M. Rating scales to assess depression in school aged children. *Acta Paedopsychiatrica*. 1981; 46:305–315. [PubMed: 7025571]
- Kovacs, M. *Children's Depression Inventory (CDI) Manual*. North Tonawanda, NY: Multi-Health Systems; 1992.

- Laurent J, Catanzaro SJ, Joiner TE, Rudolph KD, Potter KI, Lambert S, et al. Gathright T. A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment*. 1999; 11:326–338.
- Lejuez CW, Daughters SB, Danielson CW, Ruggiero K. The behavioral indicator of resiliency to distress (BIRD). Unpublished manual. 2006
- Linehan, MM. Cognitive-behavioral treatment of borderline personality disorder. New York: Guilford Press; 1993.
- Lyneham HJ, Abbott MJ, Rapee RM. Interrater reliability of the Anxiety Disorders Interview Schedule for DSM-IV: Child and parent version. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007; 46:731–736. [PubMed: 17513985]
- March J, Parker J, Sullivan K, Stallings P, Conners C. The Multidimensional Anxiety Scale for Children (MASC): Factor structure, reliability and validity. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1997; 36:554–565. [PubMed: 9100431]
- McHugh RK, Daughters SB, Lejuez CW, Murray HW, Hearon BA, Gorka SM, Otto MW. Shared variance among self-report and behavioral measures of distress intolerance. *Cognitive Therapy and Research*. 2011; 35:266–275. [PubMed: 23894216]
- Nock MK, Mendes WB. Psychological arousal, distress tolerance, and social problem-solving deficits among adolescent self-injurers. *Journal of Consulting and Clinical Psychology*. 2008; 76:28–38. [PubMed: 18229980]
- O'Neil KA, Puleo CM, Benjamin CL, Podell JL, Kendall PC. Suicidal ideation in anxiety-disordered youth. *Suicide and Life-Threatening Behavior*. 2012; 42:305–317. [PubMed: 22509976]
- Prinstein MJ, Nock MK, Spirito A, Grapentine WL. Multimethod assessment of suicidality in adolescent psychiatric inpatients: Preliminary results. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2001; 40:1053–1061. [PubMed: 11556629]
- Reynolds, WM. Suicidal ideation questionnaire: Professional manual. Lutz, FL: Psychological Assessment Resources; 1988.
- Reynolds WM, Mazza JJ. Assessment of suicidal ideation in inner-city children and young adolescents: Reliability and validity of the Suicidal Ideation Questionnaire-JR. *School Psychology Review*. 1999; 28:17–30.
- Saylor CF, Finch AJ, Spirito A, Bennett B. The Children's Depression Inventory: A systematic evaluation of psychometric properties. *Journal of Consulting and Clinical Psychology*. 1984; 52:955–967. [PubMed: 6520288]
- Shaffer D, Gould M, Brasic J, Ambrosini P, Fisher P, Bird H, Aluwahlia S. A children's global assessment scale. *Archives of General Psychiatry*. 1983; 40:1228–1231. [PubMed: 6639293]
- Shields A, Cicchetti D. Emotion regulation among school-age children: The development and validation of a new criterion q-sort scale. *Developmental Psychology*. 1997; 33:906–916. [PubMed: 9383613]
- Silverman, WK.; Albano, AM. Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions. Boulder, CO: Graywind Publications Incorporated; 1996.
- Silverman WK, Saavedra LM, Pina AA. Test-retest reliability of anxiety symptoms and diagnoses with anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2001; 40:937–944. [PubMed: 11501694]
- Simons JS, Gaher RM. The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion*. 2005; 29:83–102.
- Southam-Gerow MA, Kendall PC. A preliminary study for the emotion understanding of youths referred for treatment of anxiety disorders. *Journal of Clinical Child Psychology*. 2000; 29:319–327. [PubMed: 10969416]
- Strauss J, Birmaher B, Bridge J, Axelson D, Chiappetta L, Brent D. Anxiety disorders in suicidal youth. *Canadian Journal of Psychiatry*. 2000; 45:739–745.
- Suveg C, Kendall PC, Comer JS, Robin J. Emotion-focused cognitive-behavioral therapy for anxious youth: A multiple-baseline evaluation. *Journal of Contemporary Psychotherapy*. 2006; 36:77–85.
- Suveg C, Zeman J. Emotion regulation in children with anxiety disorders. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33:750–759. [PubMed: 15498742]

- Tamas Z, Kovacs M, Gentzler AL, Tepper P, Gadoros J, Kiss E, et al. Vetro A. The relationships of temperament and emotion self-regulation with suicidal behaviors in a clinical sample of depressed children in Hungary. *Journal of Abnormal Child Psychology*. 2007; 35:640–652. [PubMed: 17530394]
- Thompson RA. Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*. 1994; 59:25–52. [PubMed: 7984164]
- Timbremont B, Braet C, Dreessen L. Assessing depression in youth: Relation between the Children's Depression Inventory and a structured interview. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33:149–157. [PubMed: 15028549]
- Timpano KR, Buckner JD, Richey JA, Murphy DL, Schmidt NB. Exploration of anxiety sensitivity and distress tolerance as vulnerability factors for hoarding behaviors. *Depression and Anxiety*. 2009; 26:343–353. [PubMed: 19123454]
- Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, Joiner TE. The interpersonal theory of suicide. *Psychological Review*. 2010; 117:575–600. [PubMed: 20438238]
- Villabo M, Gere M, Torgersen S, March J, Kendall PC. Diagnostic efficiency of the child and parent versions of the Multidimensional Anxiety Scale for Children. *Journal of Clinical Child and Adolescent Psychology*. 2012; 41:75–85. [PubMed: 22233247]
- Wood JJ, Piacentini JC, Bergman RL, McCracken J, Barrios V. Concurrent validity of the anxiety disorders section of the Anxiety Disorders Interview Schedule for DSM-IV: Child and parent versions. *Journal of Clinical Child & Adolescent Psychology*. 2002; 31:335–342. [PubMed: 12149971]
- Zeman J, Cassano M, Suveg C, Shipman K. Initial validation of the Children's Worry Management Scale. *Journal of Child and Family Studies*. 2010; 19:381–392.
- Zeman J, Shipman K, Penza-Clyve S. Development and initial validation of the Children's Sadness Management Scale. *Journal of Nonverbal Behavior*. 2001; 25:187–204.
- Zeman J, Shipman K, Suveg C. Anger and sadness regulation: Predictions to internalizing and externalizing symptoms in children. *Journal of Clinical Child and Adolescent Psychology*. 2002; 31:393–398. [PubMed: 12149977]
- Zlotnick C, Donaldson D, Spirito A, Pearlstein T. Affect regulation and suicide attempts in adolescent inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1997; 36:793–798. [PubMed: 9183134]

Table 1
Descriptive Information for Study Participants by Suicidal Ideation Status

Variable	Suicidal Ideation Status		Significance Test
	AD-SI (N=50)	AD-NSI (N=36)	
Child age in years (<i>SD</i>)	11.92 (3.27)	10.90 (2.75)	$t(84) = 1.52$
Males (%)	30 (60%)	15 (41.6%)	$\chi^2(1, N = 86) = 2.82$
Race (%)			
Caucasian	43 (86%)	30 (83.33%)	$\chi^2(1, N = 86) = 0.17$
Non-Caucasian	7 (14%)	6 (16.67%)	
Principal Anxiety Diagnosis (%)			
GAD	23 (46%)	11 (30.56%)	$\chi^2(1, N = 86) = 2.36$
SAD	4 (8%)	6 (16.67%)	$\chi^2(1, N = 86) = 1.53$
Social Phobia	13 (26%)	11 (30.56%)	$\chi^2(1, N = 86) = 0.22$
Specific Phobia	5 (10%)	6 (16.67%)	$\chi^2(1, N = 86) = 0.83$
Panic Disorder	3 (6%)	0 (0%)	Fisher's exact $p = .26$
OCD	2 (4%)	1 (2.78%)	Fisher's exact $p = 1.0$
AD-NOS	0 (0%)	1 (2.78%)	Fisher's exact $p = .42$
CGAS Composite (<i>SD</i>)	53.74 (6.11)	55.08 (6.70)	$t(84) = 0.97$
Principal Disorder CSR (<i>SD</i>)	5.44 (0.93)	5.28 (0.94)	$t(84) = 0.79$
Comorbid Depressive Disorder (%)	9 (18%)	4 (11.11%)	$\chi^2(1, N = 86) = 0.77$
CDI (<i>SD</i>)	10.88 (5.88)	7.44 (6.78)	$t(84) = 2.51^*$

Note. $N = 86$. AD-SI = Anxiety Disorder with Suicidal Ideation, AD-NSI = Anxiety Disorder without Suicidal Ideation, GAD = Generalized Anxiety Disorder, SAD = Separation Anxiety Disorder, OCD = Obsessive Compulsive Disorder, AD-NOS = Anxiety Disorder, Not Otherwise Specified, CDI = Child Depression Inventory, CGAS = Clinician Global Assessment Scale, CSR = Clinician Severity Rating,

* $p < .05$.

Table 2

Bivariate correlations among study variables

	1	2	3	4	5	6	7	8
1. SIQ-JR Youth Report	--	.54**	.46**	.42**	-.06	-.35*	-.06	-.12
2. MASC Youth Report		--	.49**	.48**	.09	-.36**	.09	-.23*
3. CDI Youth Report			--	.55**	.23*	-.13	-.03	.02
4. CEMS Youth Report (Dysregulation)				--	.07	-.29*	-.31*	-.04
5. ERC Parent Report (Lability/Negativity)					--	.06	-.06	.07
6. DTS Youth Report						--	.16	.17
7. DTS Parent Report							--	-.002
8. BIRD Quit Time								--

Note. SIQ-JR= Suicidal Ideation Questionnaire- Junior, MASC= Multidimensional Anxiety Scale for Children, CDI= Children's Emotion Management Scales, ERC= Emotion Regulation Checklist, DTS= Distress Tolerance Scale, BIRD= Behavioral Indicator of Resiliency to Distress.

* = $p < .05$,

** = $p < .01$.

Table 3
Hierarchical Regression Analysis for Anxiety Predicting Self-Reported Suicidal Ideation

	<i>B</i>	<i>SE B</i>	<i>β</i>	<i>R</i> ²	<i>R</i> ² change
Block 1				.21	.21
Constant	-.040	1.46			
CDI	0.60	0.13	.46***		
Block 2				.34	.13
Constant	-7.28	2.16			
CDI	0.33	0.14	.25*		
MASC	0.19	0.05	.42***		

Note. *N*= 86. CDI= Children's Depression Inventory. MASC= Multidimensional Anxiety Scale for Children.

* *p* < .05,
*** *p* < .001.

Table 4
Logistic Regression Analysis for Anxiety Predicting Parent-Reported Suicidal Ideation

	<i>B</i>	<i>SE B</i>	<i>Exp (B)</i>
Block 1			
Constant	-3.60	0.83	.03
CDI	0.13	0.06	1.14*
Block 2			
Constant	-4.18	1.26	.02
CDI	0.11	0.06	1.12
MASC	0.01	0.02	1.01

Note. *N*= 86. CDI= Children's Depression Inventory. MASC= Multidimensional Anxiety Scale for Children.

* $p < .05$. Nagelkerke $R^2 = .1$

Table 5
Hierarchical Multiple Regression Analysis for Predictors of Self-Reported Suicidal Ideation

	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	<i>R</i> ² change
Block 1				.36	
Constant	-6.09	2.00			
CDI	.25	.13	.22		
MASC	.17	.04	.46***		
Block 2				.40	.04
Constant	-3.50	5.35			
CDI	.21	.14	.19		
MASC	.13	.05	.36**		
CEMS Youth Report	.28	.30	.12		
DTS Youth Report	-1.43	.97	-.16		

Note. n= 64. CDI= Children's Depression Inventory, MASC= Multidimensional Anxiety Scale for Children, CEMS= Children's Emotion Management Scales, DTS= Distress Tolerance Scale.

p < .01,

p < .001.