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Emotional Triggers and Psychopathology Associated with Suicidal Ideation in Young Urban Children with Elevated Aggressive-Disruptive Behavior

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Abstract

8.6% suicidal ideation (SI) was found among 349 urban 6–9 year olds in the top tercile of aggressive-disruptive behavior. SI was associated with more self-reported depression, ODD, conduct problems, and ADHD symptoms (ES 0.70–0.97) and 3.5–5 times more clinically significant symptoms. Parents rated more symptoms in older children associated with SI compared to parents of similar age children without SI, including greater somatic and behavior problems in 8–9 year olds with SI. Parent ratings did not differentiate SI and non-SI in 6–7 year olds. SI frequently co-occurred with thoughts about death. Children described anger, dysphoria and interpersonal conflict as motivators/triggers for SI and worries about safety/health as motivator/triggers for thoughts about death, suggesting that problems managing emotionally challenging situations are a specific factor in initiating SI. Universal and indicated interventions for children to strengthen emotional self-regulation and behavioral control are recommended to complement the current emphasis on suicide prevention among adolescents.

Keywords

suicidal ideation; urban children; emotional triggers; externalizing problems

The burden of suicide mortality has shifted increasingly towards younger aged individuals in the last half-century, and suicide is the third leading cause of death for young people ages 10–24 in the U.S. (Lubell, Kegler, & Karch, 2007). Although there are few deaths from suicide before adolescence, suicidal ideation in 4th grade was associated with a 1.5 times greater likelihood of making a suicide attempt by age 19 in a large urban cohort (Ialongo et al., 2004). In another epidemiological cohort, children with suicidal ideation before adolescence had higher rates of mood and substance use disorders as adults compared to those whose suicidal ideation began during adolescence (Steinhausen & Winkler, 2004). These associations suggest that targeting early risk factors for suicidal behavior may be an important suicide prevention strategy (Brown, Wyman, Brinales, & Gibbons, 2007). However, little is known about suicidal thinking and behavior in young children.

A developmental approach provides a useful framework for examining suicidal behavior across childhood. According to this approach, the manner in which children experience and express specific features of psychopathology depends on their cognitive, physiological, and social developmental level (Cicchetti & Toth, 1998). Dysphoric mood, for example, is a core

symptom of depression across ages, but the manner in which children express dysphoria varies by age (Weiss & Garber, 2003). Developmental level can also influence the causes and consequences of psychopathology; cognitive factors such as a pessimistic explanatory style for negative life events, for example, may be more predictive of mood disorders for older than younger children (Nolen-Hoeksema, Girgus, & Seligman, 1992). A developmental approach also focuses attention on mechanisms of transmission of risk factors (Goodman & Gotlib, 1999). For example, depressed mother's negative attributions for child-centered events predict their adolescent children's negative attributions for the same events, suggesting one mechanism whereby children internalize maladaptive 'self-talk' associated with depression (Garber & Flynn, 2001). In addition to limited knowledge about risk factors for suicide in young children, the mechanisms whereby young children apply their knowledge about death and behaviors leading to death (Mishara, 1999) to initiate suicidal thinking are largely unknown.

The current state of knowledge in youth suicide prevention research is strong on epidemiological rates and psychiatric risk factors in adolescence (Foley, Goldston, Costello, & Angold, 2006; Gould et al., 1998; Kandel, Raveis, & Davies, 1991). Suicide deaths increase from about 1.2 per 100,000 for ages 10–14 to 12.1 per 100,000 for ages 20–24 (IOM, 2002). Increased suicide attempts for girls at age 13 are closely linked with emerging sex differences in depression and hormonal changes (Angold, Costello, Erkanli, & Worthman, 1999; Lewinsohn, Rohde, Seeley, & Baldwin, 2001). Mood, anxiety, and disruptive/conduct disorders are associated with suicidal ideation, attempts, and deaths from preadolescence through adolescence (Brent et al., 1993; Foley et al., 2006; Gould et al., 1998), and substance use disorders also increase risk for suicidal behaviors (Kandel, 1988). Severity of symptom-related impairment and total symptom load explains most of the risk for suicidal ideation and behavior in preadolescents and adolescents rather than a specific diagnostic profile (Foley et al., 2006).

For children younger than age nine, few studies have used designs that permit reliable estimates of the prevalence of suicidal behavior in different population groups. In small sample studies, children as young as preschool age have been identified with suicidal thinking and behavior (Connolly, 1999; McIntire, Angle, & Schlicht, 1977). Several studies have used clinical or convenience samples, many with over-representation of maltreated or prenatally drug-exposed children (e.g., Finzi et al., 2001; O'Leary et al., 2006; Payne & Range, 1996). For example, 10% of eight year old maltreated children in a multi-state cohort had suicidal ideation based on a single questionnaire item (Thompson et al., 2005). In one study using a community sample, Pfeffer, Zuckerman, Plutchik, and Mizruchi (1984) reported that 8.9% of 6 – 12 year olds had suicidal ideation and 1% a prior suicide attempt; however, this sample had a mean age of 9.7 years and rates of suicidal ideation were not reported for younger children.

Depressive symptoms (O'Leary et al., 2006; Pfeffer et al., 1984) and overall psychological distress (Thompson et al., 2005) are linked to suicidal thoughts in young children. The role of psychological distress is also underscored by the association between family conflict, maltreatment, and suicidal thinking in children (Asarnow, Carlson, & Guthrie, 1987; O'Leary et al., 2006; Thompson et al., 2005). Childhood trauma also increases the risk for suicide in adulthood, suggesting that maladaptive coping with chronic emotional distress contributes to suicidal behaviors (Enns, Cox, Afifi, De Graff, Ten Have, & Sareen, 2006). There remains a large gap in knowledge about the mental health problems associated with suicidal behavior in young children, including the role of externalizing behavior patterns. In addition, the mechanisms linking psychological distress to suicidal thoughts have not been delineated.

One cognitive factor influencing children's expression of suicidal thinking is the acquisition of a mature concept of death, with children before ten years of age demonstrating inconsistent knowledge of the irreversibility of death and causal factors leading to death (Slaughter &

Griffiths, 2007). For example, whereas most 1st graders reported understanding that dead people do not become living again, 70% also believed that dead people can have experiences such as seeing or breathing (Mishara, 1999; Normand & Mishara, 1992). Due to a lack of mature concept of death, the essential features of suicidality in children according to many developmentalists are thoughts or behaviors centered on an intention to cause serious self-injury or death, irrespective of capacity to comprehend the lethality of self-injurious behaviors (Connolly, 1999; Pfeffer, 1997; Tishler, Reiss, & Rhodes, 2007). We were guided by that approach in defining suicidal ideation in the present study.

The association between thoughts about death and suicide suggests one cognitive mechanism that may account for some children initiating thoughts about suicide (Orbach, Feshbach, Carlson, Glabman, & Gross, 1983; Tishler et al., 2007). Preoccupation with death, either as excessive worry or attraction, has been linked to children's suicidal ideation (Orbach et al., 1983; Orbach, Feshbach, Carlson, & Ellenberg, 1984; Pfeffer, 1986; Pfeffer et al., 1984). Children who are preoccupied with death, either through direct experience or as a symptom of depression, may be more likely to adopt thoughts about suicide (Orbach et al., 1983; Tishler et al., 2007). Although the nature of this association has not been evaluated, children with recurrent thoughts about death may initiate active thoughts about inducing self-harm or death if they experience additional acute distress.

In response to several gaps in knowledge of suicidal behavior in children, this study had four goals. First, we sought to determine rates of suicidal ideation and behavior in a community sample of 6–9 year olds in the top tercile (33%) of aggressive-disruptive behavior in urban classrooms identified through population-level screening. This screening for maladapting children was done to form the sample of a randomized trial to test an intervention for such high risk children (Rochester Resilience Project; Wyman, Cross, & Barry, 2004). We concentrated on suicidal ideation because we expected very low rates of suicide attempts. A second goal was to identify the mental health problems reported by children and parents, and to see which problems, if any, differentiated children with and without suicidal ideation. Increased knowledge of suicidal thinking for young children with elevated disruptive behavior problems has value for several reasons. Externalizing problems are risk factors for suicidal behavior in adolescents (e.g., Gould et al., 1998) but have received little attention in studies of suicidal thinking in children. The tendency for externalizing behavior patterns to be moderately stable over time (Hinshaw, 2002) also suggests that early manifestations of disruptive behavior may foreshadow ongoing risk for suicide both through a direct link with early onset of suicidal thinking and through an indirect link with later conduct problems. Another advantage of our design was to clarify risk factors for suicidal ideation among African American youths, which have been identified as a priority due to disproportionate increase in suicides for this group (CDC, 1998).

We had two additional goals using qualitative methods. The first was to ascertain the degree of co-occurrence between thoughts about suicide and thoughts about death, which we expected would be associated in our community sample as they have been in clinical samples (Orbach et al., 1983). In addition, we combined qualitative (Ponterotto, 2002) and empirical methods to categorize the triggers and motivators children described for thoughts about suicide and death during interviews. We expected that difficulties in managing emotions would be the most common trigger described by children for suicidal thinking. If we were to find that thoughts about death and suicide co-occurred, yet were associated with different motivators and/or triggers, this finding would be consistent with the view that difficulty managing emotional experiences is a specific factor contributing to children's initiating thoughts about suicide.

Method

Participants

Participants were 349 1st – 3rd graders in five schools in Rochester, NY recruited for a prevention trial (Rochester Resilience Project; Wyman et al., 2004). The intervention teaches children skills to enhance emotional and behavioral self-control and to apply those skills through ‘in vivo’ coaching during the school day. Guided by a developmental epidemiology approach (Kellam, Koretz, & Moscicki, 1999), our evaluation focused on a representative subgroup of students in a defined ecological context, which minimizes selection bias and strengthens inferences about intervention effects (Brown, Kellam, Ialongo, Poduska, & Ford, 2007). In this case the defined population was 1st – 3rd grade children in the top tercile (33%) of aggressive-disruptive behaviors rated by teachers. Across schools, most children were African American (50–79%) and 76-86% were eligible for reduced school lunch fee.

Over two school years (2006 – 2008), all children in all 75 kindergarten – 3rd grade regular education classes (n=1,968) were screened using the Teacher Observation of Classroom Adaptation – Revised (Werthamer-Larsson, Kellam, & Wheeler, 1991), a structured interview administered by a trained member of the assessment team, who records the teacher’s rating of each child’s performance on core classroom tasks during the preceding three weeks on a 6-point scale (*never true* to *always true*). Screening in 1st–3rd grade classrooms occurred in late October–November of each year and in kindergarten classes in March–April of the year preceding children’s entry into first grade. The authority acceptance/aggressive behavior subscale was used to identify the target population (top tercile, or highest 1/3rd) using norms established in the same schools in the preceding year. A total of 749 children were targeted by screening; after exclusions (e.g., children relocating to another school were excluded; if multiple siblings were targeted one was randomly selected), 578 were eligible, and 349 children enrolled. There were no differences between enrolled and non-enrolled children on teacher screening ratings, sex, or on teacher ratings examined separately for boys and girls. The average age was 7.5 years (SD=1.07); 60.7% were males, 63% were African American, 20.6% Hispanic/Latino, 4% were White, and 12.3% were other race or multiracial.

Written consent from parents and verbal assent from children was obtained prior to assessments. The measures used for this study were completed during a baseline assessment prior to each child’s random assignment to either intervention or control condition. The University of Rochester Institutional Review Board approved the study protocol, which included a safety protocol for responding to children identified with suicidal thoughts or behaviors.

Measures

Dominic Interactive—Prior to intervention children were individually administered the Dominic Interactive (DI; Valla, Bergeron, & Smolla, 2000), a computerized self-report interview for 6 – 11 year old children that assesses symptoms of seven DSM-IV diagnostic categories: specific phobias, separation anxiety, generalized anxiety, depression, opposition (ODD), conduct problems, and attention deficit hyperactivity disorder (ADHD) (American Psychiatric Association, 1994). The DI uses both visual and auditory channels; color pictures accompanied by a soundtrack present Dominic, a child specific to the target child’s sex and race, in situations illustrating different emotional and behavioral content. A voice-over describes Dominic with 91 symptoms, and the child is asked whether he/she feels or behaves like Dominic (yes/no). In addition to total symptoms, the DI has a clinical cut-point (*probable diagnosis*) for each diagnostic category, created to identify children with the highest 5–10% of symptomatology in a community sample (Valla et al., 2000). We used total symptom scores

and placed children in one of two groups for each category: *probable diagnosis* or *without a probable diagnosis*.

DI symptom scores differentiate children with and without clinical diagnoses, and adequate test-retest reliabilities were found for the DSM-III version of the DI (Valla, Bergeron, Berube, Gaudet, & St-Georges, 1994). In a study of concurrent validity (Linares, Short, Singer, Russ, & Minnes, 2006), low-moderate correlations were reported between DI scales and scores on the Child Behavior Checklist (CBCL; Achenbach, 1991a) and the Conners' Teacher Rating Scale-28 (CTRS-28; Conners, 1990) for externalizing symptoms. Internal consistency estimates for DI diagnostic categories are moderate to good (range .61–.72; Linares et al., 2006).

Suicidal Thoughts and Behaviors Interview—Suicidal ideation (SI) and behavior was assessed through a structured interview given to each child who answered 'yes' to the following DI item from the Depression scale: "Do you think about death or about killing yourself?" Children's narrative responses were analyzed for the qualitative portion of this study. The interview, including scoring criteria, is available from the first author. The interview combines structured questions with age-appropriate prompts designed to elicit details about the child's thoughts and past behaviors. Children were asked 1) "do you think about death?" and 2) "do you think about hurting or killing yourself?" The interviewer used prompts to encourage the child to elaborate each response (e.g. "can you tell more about that?"). Children were also asked "have you ever tried to hurt/kill yourself" The interviewer recorded verbatim each child's narrative responses. The interview was administered to 84 children, i.e., 24.1% of the sample who responded affirmatively to the DI item. Interviewers initiated a safety protocol for any child who expressed suicidal thoughts or behaviors by notifying a designated school professional (e.g., social worker, psychologist) who contacted the child before the end of the school day to determine appropriate follow-up, which might include immediate notification of parents, contacting crisis services or obtaining additional ongoing school support services for the child.

The typical child's narrative in response to an affirmative answer about SI or thoughts about death was fairly brief and consisted of no more than several sentences. The responses were scored independently by two licensed psychologists for presence or absence of the following. *Suicidal Ideation (SI)*: we employed Pfeffer's (1981) definition of suicidality in children, i.e., thoughts about killing oneself or about engaging in behaviors that if carried out would lead to serious self-injury or death. For example, having thoughts about stabbing oneself was considered SI even if the child did not specifically indicate an intention to die. *Method of Suicidality*: defined as specific method of self-harm behavior described by child (e.g., stabbing oneself, jumping off a building); and *Suicide Attempt*, defined as a specific incident of deliberate action designed to cause serious self-injury or death. In scoring, the raters took into account the totality of a child's response. For example, one child answered 'yes' to having thoughts about hurting/killing himself, but his subsequent comments indicated that he was afraid of being hurt while 'playing hard' rather than having thoughts about intentional self-harm or wanting to die; this child was not scored with suicidal ideation by either rater. Inter-rater reliability (Kappa coefficients) for all three variables was 1.0 ($p < 0.001$). In addition, narratives were scored for *Recurrent Thoughts about Death*; inter-rater reliability (Kappa coefficient) was 0.97 ($p < 0.001$).

Youth Outcome Questionnaire (YOQ-2.0)—Each child's parent completed the 64-item YOQ-2.0 that evaluates children's functioning across behavioral, emotional, and social areas (Burlingame, Wells, & Lambert, 1996). Parents rate how well each item (e.g. 'Appears sad or unhappy') describes their child during the past seven days using a five-point Likert scale (*never* – *almost always*). The subscales are: Intrapersonal Distress, Somatic Problems, Interpersonal

Relations, Social Problems, and Behavioral Dysfunction. Relative to symptoms on DSM diagnostic categories, the Intrapersonal Distress scale contains items describing dysphoria and anxiety; the Somatic Problems scale describes physical complaints, sleep and eating difficulties; the Interpersonal Relations scale includes items on relating and communicating with family and peers; the Social Problems scale includes items on stealing and property destruction, and the Behavioral Dysfunction scale describes oppositional problems, impulsiveness and distractibility. Higher scores on each scale reflect lower functioning. YOQ-2.0 subscales have moderate to high internal consistency, correlate with other measures (e.g., Children Behavior Checklist), and have adequate test-retest reliabilities (0.62 – 0.78) (Burlingame et al., 1996; Whoolery, 1997).

Statistical Analyses

Prior to testing the relationship between suicidal ideation (SI) and symptoms, we examined sex and age differences on symptoms. Girls reported more symptoms of specific phobias ($F(1,338)=15.40, p<0.001$), separation anxiety ($F(1,338)=5.76, p<0.05$), generalized anxiety ($F(1,338)=9.50, p<0.01$), and depression ($F(1,314)=4.84, p<0.05$), compared to boys. Boys reported more symptoms of conduct problems ($F(1,338)=5.53, p<0.05$). Parents reported more somatic problems for girls ($F(1,293)=6.99, p<0.01$). In addition, 8–9 year old children reported more conduct problems than 6–7 year olds ($F(1,338)=5.68, p<0.05$), and parents reported more somatic problems for 8–9 than 6–7 year olds ($F(1,338)=4.85, p<0.05$).

For the primary analyses, we first examined demographic characteristics associated with SI using χ^2 analyses and t-tests. To assess symptoms associated with SI, we used multiple analysis of covariance (MANCOVA), with age and sex as covariates, SI status entered as a between group factor, and DI or YOQ subscales as the dependent variables. Race/ethnicity was not included as a covariate due to low variability. For significant between group differences, we calculated an average standardized effect size for SI status based on regression models that included age and sex as covariates (ESs; Rosenthal, 1994). We extended our models by including interaction terms for SI status by age and by sex; simple slopes analyses were used to elucidate significant interaction terms (Preacher, Curran, & Bauer, 2006). We used logistic regression to test differences in clinically significant symptoms on the DI by SI status. In secondary analyses, we tested differences on symptoms between children reporting SI and thoughts about death without SI using analysis of covariance that included sex and age as covariates. Unless otherwise reported, all reported coefficients are significant at the 0.05 level or stronger. For the qualitative portion of this study, we used methods from grounded theory research (Strauss & Corbin, 1990) to categorize themes in children's narratives.

Results

Prevalence of Suicidal Thoughts/Behaviors

Overall, 8.60% (30/349) of children had suicidal ideation (SI). The proportion of children reporting SI was highly comparable for those who enrolled in 2006–07 (8.7%; 17/195) and 2007–08 (8.4%; 13/154). Table 1 summarizes rates of SI by sex, age, and race/ethnicity groups. Children with and without SI had comparable mean age. The proportion of girls with SI (10.95%) was directionally higher than boys (7.08%) but not significantly different ($X^2(df=1) = 1.59, p<0.21$). Likewise, rates of SI were not different for children ages 6–7 (7.96%) versus ages 8–9 (9.76%) ($X^2(df=1) = 0.35, p<0.55$), nor was there a linear relationship between age in months and the likelihood of reporting SI ($B=0.01, S.E.=0.15, Wald\ statistic=0.55, p<0.46$).

Of the 30 children reporting SI, seven (23%) described thoughts about using a specific method to kill or hurt themselves; three were in the 6–7 year old group and four in the 8–9 year old group. Stabbing oneself was the most common method described. One child (0.29% of the

sample) reported a prior suicide attempt, and this child also reported SI. Our subsequent analyses focused solely on suicidal ideation.

Mental Health Problems Associated with Suicidal Ideation

Children with SI reported more overall mental health symptoms (Wilks' Lambda (7,326) = 0.929, $p < 0.001$) and more symptoms of depression (ES=0.97), oppositional defiant disorder (ES=0.70), conduct problems (ES=0.74), and attention deficit hyperactivity disorder (ES=0.78) (summarized in Table 2). Children with SI reported directionally higher ($p < 0.07$), but non-significantly different levels of separation anxiety compared to children with no SI. The relationship between SI and self-report symptoms did not vary by sex or age.

The relationship between parent reports of children's functioning (YOQ) and SI was stronger for older than younger children. The main effect of SI status on total YOQ was not significant (Wilks' Lambda (5,270) = 0.947, *ns*); however, we found a directionally positive age by SI interaction for total YOQ (Wilks' Lambda (5,270) = 0.964, $p < 0.07$) and significant age by SI interactions for the Intrapersonal Distress ($F(1,279) = 4.82, p < 0.03$), Somatic Problems ($F(1,279) = 6.96, p < 0.009$), and Behavior Dysfunction subscales ($F(1,279) = 6.80, p < 0.01$) (summarized in Table 2). In each case, parents rated 8–9 year olds with SI as having more emotional and physical distress symptoms and lower behavioral control and functioning, whereas parents of 6–7 year olds reported no differences (summarized in Table 3). On Intrapersonal Distress (i.e., dysphoria and anxiety), there was a directionally similar but non-significant ($p < 0.07$) relationship, with parents rating 8–9 year olds with SI as more distressed (Table 3). For children with SI, simple slopes analyses showed that greater age was associated with higher parent ratings of Intrapersonal Distress ($\beta = 0.43, p < .03$) and Behavior Dysfunction ($\beta = 0.48, p < .01$), and a trend towards more Somatic Problems ($\beta = 0.37, p < .07$), whereas for children without SI age was not associated with parent ratings. No sex differences were found in the associations between SI and problems reported by children or parents. Analyses conducted separately for children enrolled in the first and second year showed comparable findings.

Children with SI were 5.8 times more likely to report clinically significant levels of depression symptoms, and 3.5 and 4.2 times more likely to report clinically significant levels of conduct and ODD problems, respectively (summarized in Table 4). Children with SI were 3.7 times more likely to report clinically significant levels of symptoms on one or more DI scales compared to children without SI (79.3% versus 51.0%, respectively).

Qualitative Analyses of Narratives about Suicidal Ideation and Thoughts of Death

In this next section, we extend our examination by evaluating the association between SI and thoughts about death. Fifty-four children (15.5%) reported recurrent thoughts about death (54/349). We found substantial but not complete overlap between SI and thoughts of death. Of the 30 children with SI, 21 (70%) also reported thoughts about death. Children were 8.4 times more likely to report SI if they also reported thoughts about death (Relative Risk = 8.43, 95% CI: 4.23-17.09, $p < 0.001$). Children with SI, compared to those with thoughts of death and no SI ($n=33$), reported more oppositional (ODD) symptoms ($F(1,58) = 3.91, p < 0.05$); otherwise there were no differences between the two groups on symptoms reported by children or parents.

Next, we examined children's narrative responses to the interview to identify and contrast the motivators and triggers described for SI and thoughts of death. We used methods from grounded theory research (Strauss & Corbin, 1990). This format included theme generation and reduction through open and axial coding. We used the following definition for motivators and triggers: thoughts, experiences or emotional states described by children as preceding, accompanying, or being the reason for their thoughts about suicide or death. First, we used an

open-coding approach to examine each narrative and give a conceptual name to each separate theme. After this data ‘fracturing,’ those themes were grouped into categories using ‘axial’ coding designed to link together the separate concepts. For example, different emotional states described as motivators for suicidal thoughts (e.g., frustration, anger, sadness) were linked together under a single theme. Definitions and scoring criteria are available from the first author. To identify the most common themes and the reliability of the criteria, two raters independently scored each narrative accompanying children’s descriptions of SI or thoughts of death for the presence of each theme. A child’s narrative could be scored with more than one theme. One of the raters had not been involved in identifying the themes or developing their definitions.

The specific themes identified in the narrative analyses, exemplars of each theme from actual narratives, the proportion of children with SI and thoughts of death whose narratives contained each theme, and inter-rater reliabilities are summarized in Table 5. The inter-rater reliabilities were uniformly high (0.84 – 1.0). The motivators and triggers for SI centered on experiences of strong emotions such as anger or sadness, being in conflict situations, or anticipating losses or abandonment. *Anger or Dysphoria* and *Interpersonal Conflict* (e.g., fights with siblings, being bullied) were the most common themes associated with SI, with 40% and 37% of the narratives, respectively, containing those themes. The theme of *Loss/ Abandonment* was identified in 9.5% of the narratives. Overall, 76.7% of the narratives of children with SI contained one or more of the preceding themes.

Compared to thoughts about suicide, children described distinctly different triggers and motivators for their thoughts about death. Those themes centered on worries about their own safety and worries about the safety and well being of their family members. *Personal Concerns about Safety* was the most frequent trigger/motivator, found in 48% of the narratives, followed by *Family Member Died/Injured* (17%) and *Worries about Family Member* (18%). Children frequently referenced actual violent events such as having witnessed a robbery or having a family member killed or injured as a result of community violence. Overall, 75.5% of children with thoughts of death had one or more of the preceding themes.

Discussion

To our knowledge, this is one of the first studies of suicidal ideation (SI) in a community sample of children younger than age 9. We found an 8.6% rate of SI in urban, predominantly low-income children with an average age of 7.5 years, selected to be representative of the top tercile (33%) of aggressive-disruptive behavior. Whereas prior studies of suicidal behavior in young children have used clinical or convenience samples, many with over-sampling of maltreated or prenatally drug-exposed children (Finzi, et al., 2001; O’Leary et al., 2006; Payne & Range, 1996), our sample was selected through a population-based screening of all 1st – 3rd grade regular education classrooms in five schools. Suicidal ideation was assessed using a two-stage method that combined a standardized questionnaire item and individual interviews to assess suicidal thinking. Our finding that 8.6% of these maladapted children had SI is likely to be a conservative estimate given that we did not sample children with a special-education designation for behavioral or emotional problems. An 8 – 9% rate of SI is comparable to or even higher than the 3- and 6-month prevalence rates for SI found in community samples of older preadolescents and adolescents (e.g., Gould et al., 1998). Suicidal thinking in young children outside clinical settings warrants increased recognition, including how to determine the potential for life-threatening behavior, respond effectively and identify effective prevention approaches.

The self-reported mental health symptoms associated with SI in our sample were comparable to those risk factors for suicidal thoughts and behavior in community samples of older youth

(Foley et al., 2006; Gould et al., 1998; Kandel, 1988). Children with SI reported more symptoms of depression as well as a broad spectrum of behavior problems including ODD, conduct problems, and ADHD. Children with SI were nearly six times more likely to report clinically significant levels of depression and three to four times more likely to report clinically significant levels of ODD and conduct problem symptoms. The relationship between parent ratings of children's symptoms and children's suicidal ideation status was stronger for older than younger children. Parent ratings differentiating 8 – 9 year olds with and without SI were congruent with children's self-reported symptoms of oppositional problems, ADHD and somatic complaints, whereas parents did not differentiate between 6 – 7 year olds with and without SI.

Based on children's self-report of symptoms, our findings suggest that there is substantial continuity in the mental health risk factors associated with suicidal ideation in older youth and those risk factors in 6 – 9 year olds with elevated externalizing problems. However, parent ratings may not capture internalizing symptoms associated with SI in this age-group or some behavioral problems associated with SI among children at the younger end of this age range. Regarding the lack of consistency between children and parents on distress symptoms associated with SI, our findings are consistent with the prior literature in several ways. Among eight year olds at risk for, or having experienced, maltreatment, children were two times more likely to report SI than their caregivers, who were in concordance with child ratings of SI about one-quarter of the time (Thompson et al., 2006). Moreover, caregiver-child agreement on SI was associated with perceptions of externalizing and somatic problems but not internalizing problems. Studies in the child clinical and developmental literatures also indicate that agreement tends to be low between parents and children about the psychological symptoms that children are experiencing, particularly for anxiety and depression (Schniering, Hudson, & Rapee, 2000; DiBartolo, Albano, Barlow, & Heimberg, 1998). More to the point, younger child age is associated with less agreement between parents and children on symptoms (e.g., Edelbrock, Costello, Dulcan, Kalas, & Conover, 1985; Grills & Ollendick, 2003). Combined with the preceding information, our finding of a linear increase in levels of intrapersonal distress and behavior problems reported by parents for children with SI suggests that developmental changes during early school age may enhance parents' sensitivity to problems in children associated with suicidal thinking. Increased verbal skills, particularly verbalization about emotional experiences (Riggs, Greenberg, Kusche, & Pentz, 2006), may be one important developmental change linked to parents' awareness of distress among children experiencing suicidal ideation.

Our analyses of children's narratives about their SI suggest that difficulty managing emotions in the context of adversity may be an important proximate risk factor explaining how specific children initiate thoughts about hurting or killing themselves. Anger and dysphoria were the most frequent precipitants or emotional states referenced by children for their suicidal thoughts, in the context of interpersonal problems such as family conflict, being bullied, or fears about parents leaving. The theme of difficulty managing emotions also helps illuminate the association between SI and seemingly disparate individual-level risk factors as depression and disruptive behavior problems. Both depression and disruptive behavior disorders have been conceptualized as disorders involving difficulties in the regulation of emotional experience (Cicchetti & Toth, 1998; Dodge & Pettit, 2003). Children exhibiting symptoms of those disorders have difficulties effectively managing every-day emotional challenges and maintaining emotional equilibrium, although the manifest behavioral expressions of emotional dysregulation for those disorders vary, ranging from withdrawal to aggressive outbursts. Intense emotional activation often limits cognitive flexibility and adaptability (Gross, 1998), which may also contribute to a child's vulnerability to adopting thoughts about suicide as a response to stress.

Children were eight times more likely to have suicidal thinking if they also reported recurrent thoughts about death. Whereas prior studies have linked concerns about death and SI in clinical samples (e.g., Pfeffer, 1986), this study expands that association to a community sample. Compared to SI, children's thoughts about death were associated with distinctly different triggers and motivators, the latter centering on concerns about personal safety, safety of family members, and violence. Compared to those with thoughts of death without SI, children with SI reported more oppositional problems, whereas the two groups had comparable levels of other symptoms. Recurrent thoughts about death have been suggested as a possible predisposing cognitive factor for SI (Tishler et al., 2007). Our cross-sectional findings cannot elucidate whether thoughts of death predispose a child to adopting suicidal thoughts. Future prospective studies should examine if children who are preoccupied with death (e.g., after violence exposure) are at elevated risk for suicidal thinking if they experience acute emotional distress. How adversity experiences contribute to suicidal thinking needs further clarification to elucidate the association between suicidal ideation and poverty (Foley et al., 2006) as well as the reasons for climbing rates of suicidal behavior in African American males (CDC, 1998).

Currently, the field of youth suicide prevention is strongest in developing and evaluating strategies (e.g., screening, gatekeeper training) to identify adolescents who are suicidal, or at high risk for suicide, to facilitate referral for mental health treatment (Brown, Wyman, Guo, & Pena, 2006; Eggert, Randell, Thompson, & Johnson, 1997; Gould & Kramer, 2001; Wyman et al., 2008). Our findings suggest that many young children with SI may be overlooked by this focus on suicidal behavior beginning in adolescence. In light of evidence that longer delay between onset and treatment for mental health problems predicts poorer outcomes (Kessler et al., 2007), not addressing SI in younger children may have high costs. Early manifestations of externalizing problems and poor socialization may be useful targets for suicide prevention due to their direct association with SI among young children and the potential for ongoing behavior problems into adolescence that increase risk for suicidal behavior at that phase of development (Gould et al., 1998). Recent results from a prevention trial support that view: children who received a 1st grade classroom intervention aimed at strengthening socialization and reducing aggressive behavior (Good Behavior Game) had lower rates of SI and fewer suicide attempts by age 19–21 (Wilcox et al., 2008). In addition, the effects of the Good Behavior Game on reducing suicidality were not specific to early maladapting children. This study suggests that universal prevention programs that reduce behavior problems and improve socialization over time may decrease risk for suicidal behavior and serve to complement 'indicated' interventions for children with specific elevated problems such as externalizing problems and depression. We suggest the following foci for future research. Studies are needed to determine the prevalence of suicidal thinking and behavior in different subgroups of children, including factors that govern continuity and change in suicidality. In addition, intervention trials are needed to test specific mechanisms that may account for reducing risk for suicidal behavior in order to develop more effective suicide prevention strategies (Brown, Wyman, et al., 2007).

Several limitations of this study should also be noted. We employed a definition of SI tailored to the developmental level of 6 – 9 year olds (Pfeffer, 1981), which included thoughts about self-injurious behaviors without necessarily the intention to kill oneself. How well this definition captures a developmental precursor of SI assessed in studies of older youth that focus on intention to die is unclear. However, we note that several studies of older youth have also used broader definitions of suicidality (e.g., Foley et al., 2006). There are also limitations in comparing the mental health symptoms assessed in this study with assessments yielding psychiatric diagnoses used in community samples of older youth (e.g. Foley et al., 2006; Gould et al., 1998). This study used measures of symptoms by children and domains of functioning reported by parents, and we cannot draw conclusions about relationships between diagnoses and suicidal ideation in our sample. Our findings also may not generalize to children outside

of the top tercile of aggressive-disruptive behavior. We conducted our study in a community with high rates of violence and family poverty. To what extent those contextual factors affect prevalence rates of suicidal thinking and alter associations between individual-level mental health risk factors and suicidal behavior is unknown and is another needed focus for future research.

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References

- Achenbach, TM. Manual for the Child Behavior Checklist/4–18 and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry; 1991a.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Vol. 5th ed.. Washington, DC: Author; 1994.
- Angold A, Costello EJ, Erkanli A, Worthman CM. Pubertal changes in hormone levels and depression in girls. *Psychological Medicine* 1999;29:1043–1053. [PubMed: 10576297]
- Asarnow JR, Carlson GA, Guthrie D. Coping strategies, self-perceptions, hopelessness, and perceived family environments in depressed and suicidal children. *Journal of Consulting and Clinical Psychology* 1987;55:361–366. [PubMed: 3597949]
- Brent DA, Perper JA, Moritz G, Allman C, Friend ACR, et al. Psychiatric risk factors for adolescent suicide: A case-control study. *Journal of the American Academy of Child and Adolescent Psychiatry* 1993;32:521–529. [PubMed: 8496115]
- Brown, CH.; Kellam, SG.; Ialongo, N.; Poduska, J.; Ford, C. Prevention of aggressive behavior through middle school using a first grade classroom-based intervention. In: Tsuang, MT.; Lyons, MJ.; Stone, WS., editors. *Recognition and Prevention of Major Mental and Substance Abuse Disorders*. Arlington, VA: American Psychiatric Publishing, Inc; 2007. p. 347-370.
- Brown CH, Wyman PA, Brinales J, Gibbons R. The role of randomized trials in testing intervention for the prevention of youth suicide. *International Review of Psychiatry* 2007;18:617–631. [PubMed: 18092240]
- Brown CH, Wyman PA, Guo J, Pena J. Dynamic wait-listed designs for randomized trials: New designs for prevention of youth suicide. *Clinical Trials: The Journal of the Society for Clinical Trials* 2006;3:259–271.
- Burlingame, GM.; Wells, MG.; Lambert, MJ. *Youth Outcome Questionnaire*. Stevenson, MD: American Professional Credentialing Services; 1996.
- Centers for Disease Control and Prevention. Suicide among black youth - United States, 1980–1995. *Morbidity and Mortality Weekly Report* 1998 March 20;47:193–106. [PubMed: 9531022]
- Cicchetti D, Toth SL. The development of depression in children and adolescents. *American Psychologist* 1998;53:221–241. [PubMed: 9491749]
- Connelly L. Suicidal behavior: Does it exist in preschool aged children? *Irish Journal of Psychological Medicine* 1999;16:72–74.
- Conners, CK. *Manual for the Conners' rating scales*. Los Angeles: Western Psychological Services; 1990.
- DiBartolo PM, Albano AM, Barlow DH, Heimberg RG. Cross-informant agreement in the assessment of social phobia in youth. *Journal of Abnormal Child Psychology* 1998;26:213–221. [PubMed: 9650627]
- Dodge KA, Pettit GS. A biopsychosocial model of the development of chronic conduct problems in adolescence. *Developmental Psychology* 2003;39:349–371. [PubMed: 12661890]
- Edelbrock C, Costello AJ, Duncan MK, Kalas R, Conover NC. Age differences in the reliability of the psychiatric interview of the child. *Child Development* 1985;56:265–275. [PubMed: 3987406]

- Eggert, LL.; Randell, BR.; Thompson, EA.; Johnson, CL. Washington State Youth Suicide Prevention Program. Seattle, WA: University of Washington; 1997.
- Enns MW, Cox BJ, Afifi TO, De Graff R, Ten Have M, Sareen J. Childhood adversities and risk for suicidal ideation and attempts: A longitudinal population-based study. *Psychological Medicine* 2006;36:1769–1778. [PubMed: 16999880]
- Finzi R, Ram A, Shnit D, Har-Even D, Tyano S, Weizman A. Depressive symptoms and suicidality in physically abused children. *American Journal of Orthopsychiatry* 2001;71:98–107. [PubMed: 11271722]
- Foley DI, Goldston DB, Costello J, Angold A. Proximal psychiatric risk factors for suicidality in youth. The Great Smoky Mountain Study. *Archives of General Psychiatry* 2006;63:1017–1024. [PubMed: 16953004]
- Garber J, Flynn C. Predictors of depressive cognitions in young adolescents. *Cognitive Therapy and Research* 2001;25:353–376.
- Goodman SH, Gotlib IH. Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmissions. *Psychological Review* 1999;106:458–490. [PubMed: 10467895]
- Gould MS, King R, Greenwald S, Fisher P, Schwab-Stone M, Kramer R, et al. 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]
- Gould MS, Kramer RA. Youth suicide prevention. *Suicide & Life-Threatening Behavior* 2001;31:6–31. [PubMed: 11326760]
- Grills AE, Ollendick TH. Multiple informant agreement and the Anxiety Disorders Interview Schedule for Parents and Children. *Journal of the American Academy of Child and Adolescent Psychiatry* 2003;42:30–40. [PubMed: 12500074]
- Gross JJ. The emerging field of emotional regulation: An integrative review. *Review of General Psychology* 1998;2(3):271–299.
- Hinshaw SP. Process, mechanism, and explanation related to externalizing behavior in developmental psychopathology. *Journal of Abnormal Child Psychology* 2002;30:431–446. [PubMed: 12403148]
- Ialongo NS, Koenig-McNaught AL, Wagner BM, Pearson JL, McCreary BK, Poduska J, et al. African American children's reports of depressed mood, hopelessness, and suicidal ideation and later suicide attempts. *Suicide and Life-Threatening Behavior* 2004;34:395–407. [PubMed: 15585461]
- Institute of Medicine. Reducing suicide: A national imperative. Washington, DC: National Academy Press; 2002.
- Kandal, DB. Substance use, depressive mood, and suicidal ideation in adolescence and young adulthood. In: Stiffman, AR., editor. *Advances in Adolescent Mental Health*. Vol. Vol. 3. Greenwich, CT: JAI Press; 1988. p. 127-143.
- Kandal DB, Raveis VH, Davies M. Suicidal ideation in adolescence: Depression, substance use, and other risk factors. *Journal of Youth and Adolescence* 1991;20:289–309.
- Kellam SG, Koretz D, Moscicki EK. Core elements of developmental epidemiologically based prevention research. *American Journal of Community Psychology* 1999;27:463–482. [PubMed: 10573831]
- Kessler RC, Amminger GP, Aguilar-Gaxiola S, Along J, Lee S, Ustun TB. Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry* 2007;20:359–364. [PubMed: 17551351]
- Lewinsohn PM, Rohde P, Seeley JR, Baldwin CL. Gender differences in suicidal attempts from adolescence to young adulthood. *Journal of the American Academy of Child and Adolescent Psychiatry* 2001;40:427–434. [PubMed: 11314568]
- Linares TJ, Short EJ, Singer LT, Russ S, Minnes S. Psychometric properties of the Dominic Interactive Assessment: A computerized self-report for children. *Assessment* 2006;13:16–26. [PubMed: 16443716]
- Lubell KM, Kegler SR, Karch D. Suicide trends among youth and young adults aged 10–24 years - United States, 1990–2004. *Morbidity and Mortality Weekly Report* 2007;56:905–908. [PubMed: 17805220]
- McIntire MS, Angle CR, Schlicht ML. Suicide and self poisoning pediatrics. *Advances in Pediatrics* 1977;24:291–309. [PubMed: 602863]

- Mishara BL. Conceptions of death and suicide in children ages 6–12 and their implications for suicide prevention. *Suicide and Life-Threatening Behavior* 1999;29:105–118. [PubMed: 10407964]
- Nolen-Hoeksema S, Girgus JS, Seligman MEP. Predictors and consequences of childhood depressive symptoms: A 5-year longitudinal study. *Journal of Abnormal Psychology* 1992;101:405–422. [PubMed: 1500598]
- Normand C, Mishara BL. The development of the concept of suicide in children. *Omega International Journal of Death and Dying* 1992;25:183–203.
- O'Leary CC, Frank DA, Grant-Knight W, Beeghly M, Augustyn M, Rose-Jacobs R, et al. Suicidal ideation among urban nine and ten year olds. *Journal of Developmental & Behavioral Pediatrics* 2006;21:33–40. [PubMed: 16511366]
- Orbach I, Feshbach S, Carlson G, Ellenberg L. Attitudes toward life and death in suicidal, normal, and chronically ill children: An extended replication. *Journal of Consulting and Clinical Psychology* 1984;52:1020–1027. [PubMed: 6520272]
- Orbach I, Feshbach S, Carlson G, Glaubman H, Gross Y. Attraction and repulsion by life and death in suicidal and in normal children. *Journal of Consulting and Clinical Psychology* 1983;51:661–670. [PubMed: 6630678]
- Payne BJ, Range LM. Family environment, attitudes toward life and death, depression, and suicidality in elementary-school children. *Death Studies* 1996;20:481–494. [PubMed: 10169702]
- Pfeffer CR. Suicidal behavior of children: A review with implications for research and practices. *American Journal of Psychiatry* 1981;138:154–159. [PubMed: 7457635]
- Pfeffer, CR. *The Suicidal Child*. New York: The Guilford Press; 1986.
- Pfeffer CR. Childhood suicidal behavior: a developmental perspective. *The Psychiatric Clinics of North America* 1997;20:551–562. [PubMed: 9323312]
- Pfeffer CR, Zuckerman S, Plutchik R, Mizruchi MS. Suicidal behavior in normal school children: A comparison with child psychiatric inpatients. *Journal of the American Academy of Child Psychiatry* 1984;23:416–423. [PubMed: 6747147]
- Ponterotto JG. Qualitative research methods: The fifth force in psychology. *The Counseling Psychologist* 2002;30:394–406.
- Preacher KJ, Curran PJ, Bauer DJ. Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics* 2006;31:437–448.
- Riggs N, Greenberg MT, Kusche CA, Pentz MA. The mediational role of neurocognition in the behavioral outcomes of a social-emotional prevention program in elementary school students. *Prevention Science* 2006;7:91–103. [PubMed: 16572300]
- Rosenthal, R. Parametric measures of effect size. In: Cooper, H.; Hedges, LV., editors. *Handbook of research synthesis*. New York: Russell Sage Foundation; 1994. p. 231–244.
- Schniering CA, Hudson JL, Rapee RM. Issues in the diagnosis and assessment of anxiety disorders in children and adolescents. *Clinical Psychology Review* 2000;20:453–478. [PubMed: 10832549]
- Slaughter V, Griffiths M. Death understanding and fear of death in young children. *Clinical Child Psychology and Psychiatry* 2007;12:525–535. [PubMed: 18095535]
- Steinhausen HC, Winkler MCW. The impact of suicidal ideation in preadolescence, adolescence, and young adulthood on psychosocial functioning and psychopathology in young adulthood. *Acta Psychiatrica Scandinavica* 2004;110:438–445. [PubMed: 15521828]
- Strauss, A.; Corbin, J. *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park: CA: Sage; 1990.
- Thompson R, Briggs E, English DJ, Dubowitz H, Lee L, Brody K, et al. Suicidal ideation among 8-year-olds who are maltreated and at risk: Findings from the LONGSCAN studies. *Child Maltreatment* 2005;10:26–36. [PubMed: 15611324]
- Thompson T, Dubowitz H, English DJ, Nooner K, Wike T, Bangdiwala SI, Runyan DK, Briggs EC. Parents' and teachers' concordance with children's self-ratings of suicidality: Findings from a high risk sample. *Suicide and Life-Threatening Behavior* 2006;26:167–181. [PubMed: 16704322]
- Tishler CL, Reiss NS, Rhodes AR. Suicidal behavior in children younger than twelve: A diagnostics challenge for emergency department personnel. *Academic Emergency Medicine* 2007;14:810–818. [PubMed: 17726127]

- Valla JP, Bergeron L, Berube H, Gaudet N, St-Georges M. A structured pictorial questionnaire to assess DSM-III-R-based diagnoses in children (6–11 years): Development, validity, reliability. *Journal of Abnormal Child Psychology* 1994;22:403–423. [PubMed: 7963075]
- Valla JP, Bergeron L, Smolla N. The Dominic-R: A pictorial interview for 6-to11-year old children. *Journal of the American Academy of Child and Adolescent Psychiatry* 2000;39:85–93. [PubMed: 10638071]
- Weiss B, Garber J. Developmental differences in the phenomenology of depression. *Development and Psychopathology* 2003;15:403–430. [PubMed: 12931835]
- Werthamer-Larsson L, Kellam SG, Wheeler L. Effect of first-grade classroom environment on shy behavior, aggressive behavior, and concentration problems. *American Journal of Community Psychology* 1991;19:585–602. [PubMed: 1755437]
- Whoolery, ML. Unpublished master's thesis. Provo, Utah: Brigham Young University; 1997. The test-retest reliability and internal consistency of the Youth Outcome Questionnaire.
- Wilcox HC, Kellam SG, Brown CH, Poduska JM, Ialongo NS, Wang W, et al. The impact of two universal randomized first-and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence* 2008;95S:S60–S73. [PubMed: 18329189]
- Wyman PA, Brown CH, Inman J, Cross WC, Schmeelk-Cone K, Guo J, et al. Randomized trial of a gatekeeper program for suicide prevention: 1-year impact on secondary school staff. *Journal of Consulting and Clinical Psychology* 2008;76:104–115. [PubMed: 18229988]
- Wyman, PA.; Cross, WC.; Barry, J. Translating research on resilience into school-based prevention: Program components and preliminary outcomes from the Promoting Resilient Children Initiative (PRCI). In: Weist, M.; Clauss-Ehlers, C., editors. *Community Planning to Foster Resilience in Children*. New York: Kluwer Publishers; 2004.

Table 1

Sample characteristics and rates of suicidal ideation.

	Suicidal Ideation (N=30)		No Suicidal Ideation (N=319)	
	n	% ^a	n	% ^a
Mean age (months)	91.73		89.92	
Age				
6–7 years	18	8.0	208	92.0
8–10 years	12	9.8	111	90.2
Gender				
Girls	15	10.9	122	89.1
Boys	15	7.1	197	92.9
Race-Ethnicity				
Black (not Hispanic)	19	8.6	201	91.4
White (not Hispanic)	3	21.4	11	78.6
Hispanic	5	6.9	67	93.1
Other/multiracial	3	7.0	40	93.0

^aRow percent

Comparisons between children with and without suicidal ideation on mental health functioning reported by children (DI) and parents (YOQ).

Table 2

Mental Health Symptom Scale – Source	Suicidal Ideation (n=30)		No Suicidal Ideation (n=319)		F ¹	ES	Age X Group F ¹
	Mean	(SD)	Mean	(SD)			
Specific Phobia – DI	2.53	(1.00)	2.31	(1.86)	0.00	0.07	1.02
Separation Anxiety – DI	5.13	(1.61)	4.29	(2.20)	2.72 ⁺	0.36	0.38
Generalized Anxiety – DI	8.93	(2.19)	7.85	(3.36)	1.99	0.29	0.002
Depression – DI	12.29	(2.64)	8.57	(4.09)	17.25 ^{***}	0.97	0.75
Oppositional (ODD) – DI	4.50	(2.38)	3.12	(2.12)	12.87 ^{***}	0.70	1.78
Conduct Problems – DI	3.79	(3.90)	1.86	(2.65)	13.03 ^{***}	0.74	0.03
ADHD – DI	10.10	(3.81)	7.02	(3.98)	14.03 ^{***}	0.78	0.05
Intrapersonal Distress - YOQ	27.48	(9.73)	26.24	(10.13)	1.46	0.13	4.82 [*]
Somatic Problems - YOQ	11.72	(3.97)	11.31	(3.78)	1.11	0.02	6.96 ^{**}
Interpersonal relations - YOQ	8.29	(5.77)	7.56	(6.92)	1.01	0.12	2.67
Social Problems - YOQ	8.56	(2.99)	9.06	(3.39)	0.03	-0.17	1.41
Behavior Dysfunction - YOQ	19.76	(8.01)	20.23	(8.95)	0.33	-0.04	6.80 ^{**}

Note. DI= Dominic Interactive (child report); YOQ = Youth Outcome Questionnaire (parent report)

¹ For Dominic df = 1,336; For YOQ df= 1,279.

⁺ p<0.07;

^{*} p<0.05;

^{**} p<0.01;

^{***} p<0.001.

Comparisons between 6 – 7 and 8 – 9 year old children with and without suicidal ideation on mental health functioning reported by parents.

Table 3

YOQ subscale	Ages 6–7 years						Ages 8–9 years					
	Suicidal ideation (n=18)		No suicidal Ideation (n=208)		Group		Suicidal Ideation (n=12)		No suicidal Ideation (n=111)		Group	
	Mean	(SD)	Mean	(SD)	F ¹	ES	Mean	(SD)	Mean	(SD)	F ¹	ES
Intrapersonal Distress	23.94	(9.19)	26.00	(9.49)	0.70	-0.22	33.78	(7.46)	26.67	(11.27)	3.54 [†]	0.66
Somatic Problems	10.19	(2.56)	11.30	(3.84)	1.72	-0.34	14.44	(4.69)	11.33	(3.67)	4.65*	0.76
Interpersonal relations	6.56	(5.81)	7.43	(6.45)	0.34	-0.15	11.75	(4.06)	7.80	(7.73)	2.99 [†]	0.65
Social Problems	8.06	(3.21)	9.03	(3.43)	1.32	-0.30	9.44	(2.46)	9.11	(3.32)	0.05	0.08
Behavior Dysfunction	16.25	(7.23)	20.40	(8.96)	2.97 [†]	-0.45	26.00	(5.10)	19.92	(8.960)	4.04*	0.71

¹Note. For 6–7 year olds, df= 1,191;

²For 8–9 year olds, df=1,107.

[†] p<0.07;

* p<0.05;

** p<0.01;

*** p<0.001.

Clinically significant symptoms reported by children as a function of suicidal ideation vs. no suicidal ideation.

Table 4

Dominic Interactive Scale	Suicidal Ideation		No Suicidal Ideation		OR	Suicidal Ideation vs. None (95% CI)	P
	(n=30) %	(n)	(n=319) %	(n)			
Specific Phobia	6.7	(5)	12.9	(41)	1.36	(.51, 3.63)	.57
Separation Anxiety	40.0	(12)	32.6	(104)	1.38	(.65, 2.93)	.42
Generalized Anxiety	13.3	(4)	14.1	(45)	0.94	(.33, 2.70)	1.00
Depression	41.4	(12)	10.9	(34)	5.79	(2.59, 13.00)	.000
Opposition	24.1	(7)	7.0	(22)	4.21	(1.66, 10.72)	.006
Conduct Problems	23.3	(7)	9.1	(29)	3.53	(1.42, 8.86)	.013
ADHD	10.0	(3)	5.6	(18)	1.86	(.55, 6.32)	.41
Clinically significant on any scale	79.3	(23)	51.0	(158)	3.69	(1.50, 9.05)	.003

Table 5

Motivators/triggers described by children for suicidal ideation and recurrent thoughts of death and inter-rater reliabilities.

Suicidal Ideation (n=30)				
Theme	Illustrative example	n/group	(%)	IRR^I
Anger or Dysphoria	“sometimes I get angry and just want to kill myself”	12/30	(40.0%)	1.0
	“If I get mad I feel like I want to jump off a building”			
	“when I get sad about my mom and dad breaking up”			
Interpersonal Conflict	“I want to kill myself when my mom gets mad at me”	11/30	(36.7%)	0.95
	“when I am bullied on the bus”			
	“I want to kill myself to get away from my brother”			
Loss/Abandonment	“I think about killing myself because no one cares about me”	4/30	(9.5%)	1.0
Recurrent Thoughts of Death (n=54)				
Theme	Illustrative example	n/group	(%)	IRR^I
Personal Safety Concerns	“getting shot, stabbed, killed”	26/54	(48.2%)	0.84
	“I think about death, it scares me, I think about gunshots”			
	“I think about getting sick and dying”			
Family Member Died/Injured	“I think about my grandma who died”	9/54	(16.7%)	0.88
Worries about Family Member	“I think about my mom dying”	10/54	(18.5%)	0.88

^INote. Inter-rater reliability (Kappa coefficient)