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Prevalence of Suicidal Ideation Among Boys and Men Assessed Annually from Ages 9 to 29 Years

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Abstract

In a sample of 206 boys (90% Caucasian), self-reported suicidal ideation (SI; ages 12 to 29) and parent-reported youth suicidal talk (ages 9 to 20) were assessed annually by questionnaire. One-week point prevalence of self-reported SI ranged from 2.6% to 16.3%. New cases emerged across adolescence; by age 29, 57.3% self-reported SI at least once. SI was associated with clinically significant elevations on concurrent depressive symptoms. Nearly one quarter of parents reported suicidal talk by their son by age 20. Parent- and self-reports showed low correspondence. SI was more common than retrospective studies suggest. Parent-reports and one-time self-reports are likely to miss large numbers of adolescent boys who may be at-risk.

Keywords

suicidal ideation; adolescence; longitudinal studies; prevalence

Suicide was the third leading cause of death among males ages 13 to 29 years in 2004, accounting for 14.6% of deaths in this age group (CDC, 2006). Suicidal ideation is a known risk factor for suicide attempt, which in turn increases risk for suicide death (reviewed in King, 1997). Whereas suicidal ideation is more common among girls than among boys in adolescence (Evans, Hawton, Rodham, & Deeks, 2005), the association of ideation with suicide attempts does not differ by sex (Andrews & Lewinsohn, 1992; Reinherz, Tanner, Berger, Beardslee, & Fitzmaurice, 2006). Moreover, although girls more often attempt suicide (Evans et al., 2005), boys more often employ lethal means to do so and more often die by suicide (King, 1997). Thus, assessing suicidal ideation is an important component of judging adolescent boys' and young men's suicide risk.

A better understanding of the prevalence of suicidal ideation and other symptoms of affective disorders in boys and men is of special interest, given recent efforts to increase identification and treatment of men's depression (Kuehn, 2006; NIMH, 2003). Suicidal ideation is the least commonly endorsed symptom of major depressive disorder (MDD) among adolescents experiencing an episode (54.5%; Roberts, Lewinsohn, & Seeley, 1995). Yet, the presence of suicidal ideation is an important prognostic indicator as it is linked with worse clinical features of MDD among adolescents, including earlier first onset, longer episode duration, and shorter time to episode recurrence (Lewinsohn, Rohde, & Seeley, 1994). Thoughts of suicide at age 15 years also predict poor psychosocial functioning and Axis I diagnosis 15 years later (Reinherz et al., 2006). Therefore, a thorough assessment of adolescent boys' and young men's depression and broader mental health includes inquiries regarding suicidal ideation. Clinicians who treat MDD or other psychiatric problems with antidepressant medication must attend

closely to pre-existing, emergent, and mounting suicide risk among young patients (e.g. Emslie et al., 2007). Having information about the prevalence of suicidal thinking across boys' and men's development provides some basis of comparison for such clinical observations.

According to a recent meta-analysis of community- and school-based studies of over a half million adolescents, average recent, past month, past year, and lifetime prevalence estimates of suicidal ideation were 21.3%, 30.7%, 19.3%, and 29.9%, respectively (Evans et al., 2005). These figures reveal how commonly adolescents report suicidal ideation, but also raise doubts about the relevance of the reporting period in question (e.g. the past month prevalence is greater than that for the past year). Such findings also call into question lifetime prevalence figures reported for adults, such as those derived from large American epidemiological studies (11.18 to 16.52%; e.g. Kessler, Borges, & Walters, 1999; Weissman et al., 1999). Most studies of lifetime prevalence of suicidal ideation are based on one-time retrospective reports. Yet, at least two longitudinal studies cast serious doubt on the validity of this approach; specifically, 19% to 40% of youth who reported suicidal ideation at one assessment denied lifetime experience of it at a subsequent time (Goldney, Smith, Winefield, Tiggeman, & Winefield, 1991; Klimes-Dougan, 1998). Also problematic is that similarities among estimates of point, period, and lifetime prevalence may lead to the inappropriate conclusion that these figures are best accounted for by a core group of chronically suicidal individuals who report these thoughts repeatedly across the life span. Longitudinal studies, however, do not support this view. For example, Fergusson, Woodward, and Horwood (2000) estimated that lifetime prevalence of suicidal ideation in a large birth-cohort of boys climbed from a modest 9.5% at age 16 years to 24.5% at age 21, providing evidence that previously unidentified cases emerge across adolescence. Notably, although an advance over cross-sectional studies, study estimates still depended on lifetime (at age 15) and 2 to 3 year (at ages 18 and 21) retrospections, which may be subject to recall bias.

Prevalence of suicidal ideation appears to peak in mid-adolescence (Rueter & Kwon, 2005); although, again, longitudinal data rarely have been examined and few studies exist on youth who are younger than high school age. Thus, prospective data from early adolescence to early adulthood are expected to yield more accurate cumulative period prevalence estimates and illuminate how prevalence changes with development. Such information may guide prevention strategies. For example, peak prevalence may be used to identify when school-based screening is likely to help the most young people.

Suicidal ideation is usually assessed by self-report questionnaire or interview, though parent reports are sometimes considered. Generally, self-reports are believed to identify more cases of suicidal thoughts and behavior than parent report, but only a few studies have addressed this issue within the same sample. For example, Garrison, Jackson, Addy, McKeown, and Waller (1991) found that a majority of young adolescents reporting suicidal thinking were not identified by parent reports. Thus, although a thorough assessment of youth includes parent reports, the extent to which parents are aware of youth suicidal thoughts is not known.

Finally, given the relatively low rates at which active forms of suicidal thoughts are endorsed, low thresholds are often used to define suicidal ideation and capture variability in community samples; in many cases, this approach has been illuminating and has shown predictive validity (e.g., Goldston, 2000; Reinherz et al., 2006). A trade-off, however, is that the validity and clinical utility of more commonly reported thoughts of killing oneself may be questioned (e.g., Schwenk, 2005). In this respect, longitudinal research may be informative, since such designs (1) may discern whether suicidal thinking is developmentally transient for some individuals; and (2) permit clinically meaningful comparisons between youth who do or do not report suicidal ideation, as well as comparisons *within* groups of ideating youth when they do and do not ideate.

The primary aims of the present study were to estimate point and cumulative period prevalence of suicidal ideation in a sample of boys. Results were based on prospective, annual self-reports from the end of childhood (age 12 years) to early adulthood (age 29 years) and parent reports of boys'/men's suicidal talk from late childhood (age 9 years) to early adulthood (age 20 years). Rates were examined separately for self- and parent-reports. For self-reported suicidal ideation, patterns of recurrence were described in a limited fashion. We also examined the significance of the threshold used to operationalize suicidal ideation in the present study and in prior research, by determining whether positive ratings were associated with meaningfully higher levels of depressive symptoms both between and within participants over time. A secondary aim was to consider the extent to which parental reports of youth suicidal talk accurately identified adolescents who self-reported suicidal ideation.

METHOD

Participants

Participants were from the Oregon Youth Study, a longitudinal study of 206 boys and their families. The original purpose of the study was to identify individual, family, and community risk factors for boys' delinquency,¹ beginning at age 9 to 10 years. Fifteen of the 43 public schools in a medium-sized metropolitan area in the Pacific Northwest were identified as higher-risk for juvenile delinquency based on juvenile court data (frequency of delinquent episodes reported by police). From these 15 schools, 6 were randomly selected, and entire fourth grade classes were invited to participate; 74% were recruited in two cohorts, 1 year apart in the 1983-84 and 1984-85 school years ($n = 102$ and 104 , respectively). Assessments occurred annually from ages 9 to 29 years. At ages 23 and 29 years, participation rates were 98% and 92%, respectively. Due to budgetary constraints, assessments of parents at age 18 and participants at age 26 were limited. Of the years considered presently, parent participation was weakest (95%) when men were age 20. As of 2006, four participants had died: one accidental (age 20), one confirmed suicide (age 22), one drug overdose (age 25), and one for reasons not disclosed to study staff (age 31). Participating boys were primarily White (90%) and came from lower and working class families (75%); at the first assessment, 33% of families were receiving welfare or food stamps, and 21% included no employed parent. Further details regarding the sample at recruitment are published in Capaldi and Patterson (1989). All human subjects procedures for the study were IRB-approved.

Measures

Self-Reported Suicidal Ideation—At each assessment, from ages 12 through 25 years and 27 through 29 years, participants completed a suicidal ideation item adapted from the Beck Depression Inventory (BDI; Beck, 1967) that was appended to other measures of depressive symptoms that were introduced as participants grew older. Other than study staff, no one else was present when boys/men completed self-report questionnaires. Boys/men who answered 1 (“I think about killing myself but would not do it”), 2 (“I would like to kill myself”), or 3 (“I would kill myself for sure if I had the chance”) in the past week were classified as reporting suicidal ideation (responses were recoded to 1). Those who answered 0 (“I do not think about killing myself”) were classified as denying suicidal ideation. According to Goldston (2000), this method is consistent with the nomenclature for suicidal behavior proposed by O’Carroll and colleagues (1996); furthermore, “scores of >0 on this item have generally been found to be much more sensitive in predicting later suicidal ideation and attempts than scores of >1 ” (Goldston, 2000, p. 73). For descriptive purposes, prevalence data based on a more conservative cut point (>1), labeled here as suicidal ideation with some intent, also are presented.

¹The sample was considered to be “at-risk” with reference to delinquency, not suicidal thoughts and behaviors.

Self-Reported Depressive Symptoms—The Depression Self-Rating Scale for children (DSRS; Birmaher, 1981) was administered annually from ages 10 through 13 years. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was given annually from ages 14 to 25 and 27 to 29 years. The reliability and validity of both scales are documented (Birmaher, 1981; Birmaher, Hudson, Buchanan, & Wolff, 1987; Lewinsohn et al., 1998). The DSRS was discontinued given that the CES-D was more developmentally appropriate in adolescence and adulthood, and had begun to be more widely used in the literature. Neither the DSRS nor the CES-D contain suicidal ideation items.

Parent Report of Boys'/Men's Suicidal Talk—Mothers and fathers completed the Child Behavior Checklist (Achenbach & Edelbrock, 1983) when boys were ages 9 to 17 years, and the Young Adult Behavior Checklist (YABC; Achenbach, 1997) when men were ages 19 and 20.² Both measures asked if "[son] talks about killing self" was true over the past 6 months. "Somewhat or sometimes true" or "very true or often true" were counted as positive for suicidal talk; boys/men for whom both parents or the only participating parent indicated "not true" were classified as not showing suicidal talk.

Data Analysis

Calculation of Prevalence Rates—Prevalence rates were examined separately based on self- and parent-reports. Point prevalence was calculated at each study year based on the number of cases for whom suicidal ideation was endorsed, divided by the size of the informant sample for that year. Cumulative period prevalence estimates at each study year were based on the number of cases for whom suicidal ideation had been endorsed at that, or any prior year by that informant, divided by the total sample ($n = 206$). The rate at which previously unidentified cases were found was examined, though this was not considered incidence, because lifetime reports were not collected and self-reports were not administered until age 12. No adjustments were made for individual missing cases or missing assessment years.

Clinical Significance of Suicidal Ideation Threshold—A number of approaches were used to test whether endorsement of suicidal ideation was associated with significantly higher levels of depressive symptoms, and whether any such differences were clinically significant. First, t tests were used to examine whether reported suicidal ideation was associated with higher concurrent depressive symptoms at the two time points (ages 12 and 13 years) using the DSRS. Second, average depression scores on the CES-D across ages 14 to 29 were calculated for the men who denied suicidal ideation at all of those years ("non-SI group"). For men with any reported suicidal ideation across ages 14 to 29 ("SI group"), separate average depression scores were calculated first across years in which suicidal ideation was reported, and second across years in which it was denied. For example, for a man who reported suicidal ideation at ages 16 and 19 only, one depression score was based on the average of CES-D scores at ages 16 and 19 and another was based on the average across ages 14, 15, 17, and 20 through 29 years. t tests were then used to compare CES-D scores of non-SI group men to SI group men across years positive or negative for suicidal ideation in the latter group. Third, repeated measures ANOVAs within the SI group were used to compare average CES-D scores at years positive for suicidal ideation with scores at years when suicidal ideation was denied. This third set of analyses controlled for the number of times suicidal thinking was reported; this strategy accounted for the possibility that effects might be specific to individuals with relatively chronic suicidal ideation.

²Parents continued to complete the YABC through their sons' twenties, but at much lower participation rates (e.g., 72% at age 27). Given that low participation rates should adversely affect prevalence estimates, and that parental involvement in clinical assessment is unusual after adolescence, these reports were not considered further.

To examine the clinical significance of the associations between suicidal ideation and depressive symptoms, mean differences were examined with reference to published clinical cut-off scores on the depression measures (≥ 13 on DSRS; ≥ 16 on CES-D). Additionally, chi-square analyses were used to compare the groups of boys who did or did not endorse suicidal ideation at ages 12 and 13 on the proportions above and below the DSRS clinical cut-off score. Similarly, chi-squares were used to compare the proportions of men above and below the CES-D clinical cut-off among non-SI group men, SI group men during years of non-ideation, and SI group men during years of ideation.

Correspondence Between Self- and Parent-Reports—The extent to which parent reports of youth suicidal talk could correctly identify youth self-reported suicidal ideation was examined at each applicable study year. In particular, sensitivity of parent reports was defined as the percentage of youth self-reporting suicidal ideation (past week) whose parents reported youth suicidal talk (past 6 months). Since the time period covered by self-report was encompassed by that covered by parent reports, this figure is directly interpretable as sensitivity. Due to measurement limitations, valid counts of false-positives and true-negatives could not be made, and, therefore, specificity of parent-reports could not be calculated. For example, the percentage of youth denying past week suicidal ideation whose parents reported youth suicidal talk in the past 6 months was not considered a valid index of the false-positive rate, since youth were not asked to report suicidal ideation across the reporting period of the parent measure. For these reasons, inferential statistics (e.g., kappas) were not used to characterize informant correspondence.

RESULTS

Prevalence of Self- and Parent-Reported Suicidal Ideation

One-week point and cumulative period prevalence for participants' suicidal ideation are reported in Table 1. The highest 1week point prevalence observed for self-reported suicidal ideation was at age 13 years (16.3%). Cumulative period prevalence for suicidal ideation between ages 12 and 29 years was 57.3%. By age 14 years, more than one half of the young men who would self-report suicidal ideation during the study already had done so. By age 20 years, nearly one of the sample had experienced suicidal ideation, and only 8% of the sample would be new cases in the next 5 to 7 years, reaching a plateau by age 27 years. The highest 1-week point prevalence of suicidal ideation with some intent was 3.4% at age 12 years. Cumulative period prevalence for suicidal ideation with some intent across ages 12 to 29 was 9.7%.

Across all of the self-report assessments considered, suicidal ideation was reported just once by 18.4% ($n = 38$) of young men, twice by 19.4% ($n = 40$), three times by 6.8% ($n = 14$), and four times by 3.9% ($n = 8$); five times by 2.9% ($n = 6$), six times by 2.9% ($n = 6$) of men, and seven or more times by 2.9% ($n = 6$).

In addition, results could also be considered differently to highlight whether, relative to the first endorsement, subsequent endorsements of suicidal ideation might have occurred at an increased rate. Of the 118 participants who reported suicidal ideation at least once, 80 (67.8%) would endorse it again at a subsequent year; this rate was significantly elevated relative to the 57.3% cumulative period prevalence for the general sample ($\chi^2 = 5.3$, $p = .02$). Of the 80 participants who endorsed suicidal ideation twice, 40 (50%) would endorse it again subsequently; of those who endorsed it three times, 26 (65%) would go on to endorse it again; of the 26 who endorsed suicidal ideation at four assessments, 18 (69%) would endorse it at least once more. These rates were not significantly different from 57.3% (the cumulative prevalence), though power to detect significant differences was severely limited. Additionally, age was right-censored, perhaps limiting the accuracy of these estimates (i.e., boys who first

reported suicidal ideation at age 18 had fewer years in which to report recurrence than did boys who first reported it earlier).

As shown in Table 1, parent reports of sons' suicidal talk showed no clear peak prevalence. By the time youth were age 12, more than half of the cases who would be identified by parent reports had been; yet, although through age 20 new cases continued to be identified at the rate of 1.0% to 2.4%.

Association Between Suicidal Ideation and Depressive Symptoms

Ages 12 and 13—For boys who endorsed or denied suicidal ideation, mean depressive symptoms and proportions exceeding the clinical cut-off score on the DSRS are listed in Table 2. Those who reported ideation showed significantly higher depressive symptoms than those who did not at ages 12 [$t(200) = 4.9, p < .001$] and 13 [$t(38.5) = 4.5, p < .001$].³ At ages 12 and 13, boys who reported suicidal ideation also were more likely to exceed clinical cut-offs on depressive symptoms (41% and 39%, respectively) than were other boys [11% and 11%; $\chi^2(df = 1) = 17.7$ and 16.4, respectively; $p < .001$].

Ages 14 through 29—Mean depressive symptoms and proportion of adolescent boys and young men exceeding clinical cut-off scores on the CES-D (ages 14 to 29) within boys/men grouped by patterns of self-reported suicidal ideation also are listed in Table 2. Boys/men who reported suicidal ideation at 1 or more year between ages 14 and 29 reported higher mean levels of depressive symptoms than did never-ideating boys/men across years at which the former group reported suicidal ideation [$t(135.3) = 11.08, p < .001$], and across years at which they denied it [$t(196.4) = 4.52, p < .001$]. Non-ideating boys/men were significantly less likely to exceed the clinical cut-off on the CDRS than were ideating boys/men across years of at which ideation was reported [$\chi^2(df = 1) = 74.95, p < .001$] but not (i.e., trend-level only) across years at which suicidal ideation was denied [$\chi^2(df = 1) = 3.81, p = .051$].

Among adolescent boys and young men who reported suicidal ideation at 1 or more year between ages 14 and 29, depressive symptoms were significantly higher during years of ideation than during years of non-ideation, $F(1, 101) = 90.69, p < .001$. The number of years (recoded as 1, 2, 3+) of endorsement did not moderate this within-subjects effect, $F(2, 101) = .028, p = .973$. That is, individuals were more depressed when they endorsed suicidal ideation than when they did not, and the magnitude of this difference did not depend on how many times they had reported suicidal ideation. Also, at the between subjects level, the number of years of endorsement was not associated with severity of concurrent depressive symptoms, $F(2, 101) = .636, p = .532$. Thus, boys/men who reported suicidal ideation at only 1 assessment year were no less depressed at that time than participants who reported suicidal ideation at multiple years were at those times.

Sensitivity of Parent-Reports of Youth Suicidal Talk to Self-Reported Suicidal Ideation

The accuracy with which self-reported suicidal ideation could be identified based on parent-reported youth suicidal talk is reported in Table 3. Sensitivity was low (5% to 20%) and was not attributable to differences between the time periods covered by parent- and self-reports. As an extended example, at age 12, reports were available for 202 youth. Parents of 3 of the 28 (sensitivity = 11%) ideating youth reported suicidal talk by their sons, while 25 (1 - sensitivity = 89%) did not. At each study year, parent reports indicated that 3% to 4% ($n = 6$ to 8) of the boys/men who denied past week suicidal ideation had talked about killing themselves in the past 6 months (results not shown). This lack of correspondence was not considered a false-

³Non-integer degrees of freedom indicate that equal variances were not assumed for some t tests.

positive, since parents were presumed to correctly identify boys/men who talked about suicide over the past 6 months, even if boys/men did not self-report past week suicidal ideation.

DISCUSSION

Well over half (57%) of young men in the present study reported suicidal ideation at some point between ages 12 and 29 years, and nearly 10% reported ideation with some intent (i.e., “I would like to kill myself”). These findings, based on prospective, annual self-reports, contrast markedly with prior work using retrospective reports of lifetime prevalence of suicidal ideation by adults (e.g. Weissman et al., 1999) and adolescents (Evans et al., 2005). Though the cumulative period prevalence estimates presented here appear high, they most likely underestimated lifetime prevalence rates of suicidal ideation and talk in this sample since: (a) approximately 12% of parents reported suicidal talk by their sons prior to our collection of self-report; (b) point prevalence was nearing its peak when self-reports were first administered, and other research has documented suicidal ideation prior to this age (Gould et al., 1998); (c) self- and parent-reports were based only on 1-week and 6-month time frames, respectively; and (d) parent- and self-report data were not available at the age 18- and 26-year assessments, respectively. The discrepancy between estimates from prior studies and the present one may owe, in part, to individuals’ frequently inaccurate recall or report of past suicidal thoughts and behaviors (Goldney et al., 1991; Klimes-Dougan, 1998).

Prior work has indicated that the prevalence of self-reported suicidal ideation peaks in mid-adolescence (Rueter & Kwon, 2005). The highest rate observed in the present sample was at age 13, and thus generally consistent with this. Given that rates were highest when collection of self-reports commenced, a clear “peak” could not be discerned. In contrast to patterns across adolescence, prevalence across men’s 20’s was 3% to 11%. Additionally, nearly all adult cases had emerged by age 20 years, suggesting that suicidal ideation across early adulthood may represent a recurring problem that emerged in adolescence.

Fully describing the developmental timing of recurrence of suicidal ideation is beyond the scope of this study. Yet it is notable that nearly 20% of the sample reported suicidal ideation at three or more assessment years. Having reported suicidal ideation at any point appeared to be associated with increased risk for reporting it at a subsequent year. This may reflect the presence of an episodic condition, such as MDD, and/or a propensity for this type of thinking. Continued mounting of risk for recurrence was not observed, though our descriptive approach limited our ability to infer such a pattern. Joiner (2002) contends that mounting risk might be expected for suicide attempt or suicidal ideation involving “resolved plans and preparation,” though not necessarily for the general suicidal thinking studied here.

More surprising than the subgroup of individuals who reported suicidal ideation repeatedly was the rate at which previously unidentified cases of ideation appeared throughout adolescence. Therefore, point-prevalence estimates at different ages did not simply capture one group of chronically suicidal individuals repeatedly. An important implication is that prevention efforts that focus on a particular grade in school that coincides with peak prevalence may miss unique and comparably sized groups of at-risk youth in adjacent grades. Specifically, in the present sample the 14.3% and 16.3% of ideating boys at ages 12 and 13 were not completely overlapping groups (since point prevalence increased by 2%, while cumulative prevalence climbed by 11%). This problem compounds a related issue with single screenings, noted by Berman and Jobes (1995): that suicidal risk may wax and wane over time within individuals. Thus, multiple screening strategies that reduce false negatives followed by second-stage evaluations that screen out the inevitably high number of false positives are indicated (c.f. Gould & Kramer, 2001).

As in prior studies (e.g. Garrison et al., 1991), parent report of adolescents' suicidal ideation was less prevalent compared to self-report and failed to identify most self-reported cases (i.e., poor sensitivity). Notably, parent endorsement was considered to be positive if either mothers or fathers endorsed suicidal talk by their sons. Reports by both parents are not typical of child research or of information available during clinic visits. Thus, the low sensitivity of parent reports reported in the present study is likely higher than would be expected from either mothers' or fathers' reports alone. Parents identified a number of youth at each study year who did not self-report suicidal ideation, but because reporting periods for self- and parent-reports differed, it limited our ability to make conclusions about specificity. In sum, parental report is an unacceptable substitute for boys' and young men's self-report, yet parents may valuably supplement self-report of suicidal ideation. For example, suicidal talk directed toward or overheard by parents may have important meanings (e.g. acting out, resolved help-seeking) in addition to those associated with privately experienced suicidal thoughts. Additionally, in the context of a broader assessment, parents surely can report on other information that is critically relevant to suicide risk, such as youth access to lethal methods (e.g., a firearm in the home).

There are some additional caveats and possible limitations regarding the findings which should be discussed. First, studies of suicidal ideation prevalence may be sensitive to instrument differences. Specifically, the present study used questionnaires, rather than interviews, to assess suicidal ideation. Although the former are believed to yield higher endorsement rates, a review (Safer, 1997) and meta-analysis (Evans et al., 2005) of studies of the prevalence of adolescent suicidal phenomena indicated that anonymity, not reporting format, affected prevalence estimates.

Second, some researchers have used a more conservative cut-off on the BDI for suicidal ideation (e.g. Brunstein Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007), which may be appropriate when considering larger or more disturbed samples. The more liberal threshold used presently is consistent with the nomenclature proposed by O'Carroll et al. (1996; c.f. Goldston, 2000) that has been adopted in the field of suicidology, and with Goldston's (2000) review of the relative predictive utility of using different thresholds on the item. However, a reasonable concern is that more inclusive definitions may not capture serious suicidal thinking. Notably, the present findings overwhelmingly supported the seriousness of this ostensibly low threshold of suicidal ideation. That is, participants who reported having recently thought about killing themselves (including those who "would not do it") experienced significantly higher concurrent depressive symptoms that in many cases reached clinical significance. Specifically, 59% of ideating versus 3% of non-ideating adolescent boys and young men met the clinical cut-off on the CES-D. Thus, far from being trivial, participants' suicidal ideation was associated with increased depressive symptoms both relative to non-ideating participants and relative to their own average depressive symptoms during years in which suicidal ideation was not reported. Relatedly, prior studies with similar measurement of suicidal ideation in adolescence have found it to predict psychiatric diagnosis and suicidal thoughts and attempts in adulthood (Fergusson, Horwood, Ridder, & Beautrais, 2005; Reinherz et al., 2006).

Third, another potential reason why cumulative period prevalence rates of suicidal ideation were higher than prior lifetime prevalence estimates relates to item phrasing. For instance, the 13.5% lifetime prevalence of suicidal ideation reported by Kessler et al. (1999) is based on "Have you ever thought *seriously* about committing suicide?" (emphasis added), which may be more similar to the cut-off for suicidal ideation with some intent considered here. The 11.1% and 16.5% figures reported by Weissman et al. (1999) were based on responses to "Have you ever *felt so low that* you thought of committing suicide?" (emphases added), which ties the thinking to a mood state that is not essential to the definition suicidal ideation. Phrasing differences on suicidal ideation items (e.g. "committing suicide," "killing myself", or "ending

my life”) also have been found to affect endorsement rates (de Wilde & Kienhorst, 1995). Additionally, in the present study, a past week time frame was used for the endorsement of suicidal ideation. This was similar to that used in many of the other studies reviewed here (Garrison et al., 1991; Reinherz et al., 2006; Rueter & Kwon, 2005), but is not directly comparable with estimates derived from studies that used different periods. On the other hand, the logic that longer reporting periods should yield higher prevalence rates has not received consistent support (Evans et al., 2005).

Fourth, the sample size, while adequate for longitudinal research, is small relative to samples used in epidemiologic studies from which stable estimates of prevalence are typically derived. Finally, due to boys’ initial community risk status, lower family SES, and the racial/ethnic homogeneity of the sample, the results may limit generalizability. The high cumulative prevalence rate of suicidal ideation itself may be considered evidence that the present sample is unrepresentative of the larger population of boys and young men. Notably, however, none of the 1-week prevalence rates were out of range relative to those reported in community-based studies (Evans et al., 2005; Rueter & Kwon, 2005). Also, as argued previously, the standard lifetime prevalence figures to which the present findings are compared may be underestimates due to primary reliance on retrospective reports, rather than repeated, prospective assessments of recent experience. In this respect, the present findings offer a broader lesson on the value of longitudinal research: Repeated reports of phenomena assumed to occur at low base rates reveal them to be disturbingly common.

Although not based on a clinical sample, the present results may have clinical implications. Risk assessment that utilizes direct interview and questionnaire measures and that includes, but does not rely solely on, parent reports may be more likely to identify boys and young men experiencing suicidal ideation. Professionals (e.g. therapists, primary care physicians, school counselors) who have ongoing contact with youth should know that repeated assessments, particularly across early adolescence, are likely to identify many previously undetected cases. Although treatment history was uncontrolled in the present sample, findings may have implications for treatment of adolescent boys and young men with antidepressants. Specifically, clinicians may not assume that a young man’s denial of a history of suicidal ideation is accurate and indicative of low risk. Conversely, among male patients with truly negative histories of suicidal ideation prior to treatment, suicidal thinking may emerge that may not be due to the effects of treatment. Though not a problem for controlled medication trials, these issues are a challenge in individual care management (c.f. Emslie et al., 2007). Studies of the shorter term fluctuations in suicidal ideation are thus needed.

Clinicians may be concerned by implications of the findings that suicidal ideation may be even more common among boys and young men than originally thought. Concern already exists regarding the burden associated with over-identifying individuals as at risk based on suicidal ideation, given its apparent transience and high false-positive rate as a predictor of suicide attempt or death (Schwenk, 2005). The present data support that many adolescent boys may move in and out of the at risk group. However, this “transience” should not be equated with triviality, as meeting even a low threshold for suicidal ideation (and even doing so once) was in many cases associated with clinically significant depressive symptoms, and therefore to be taken seriously. Clearly, there are dire consequences of failing to adequately assess suicidal thoughts and behaviors. Fortunately, clinicians have many tools at their disposal, including assessment of other risk and protective factors, referral for more comprehensive evaluation, safety planning, and ongoing clinical monitoring.

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Table 1
Prevalence (%) of Self-reported Suicidal Ideation and Parent-reported Youth Suicidal Talk across Ages 9 to 29 Years

Age	Self-report Suicidal Ideation (Past Week)			Parent-report Suicidal Talk (6 Month)		
	Any	With Some Intent	> Never	Point (%) ^a	Cumul. (%) ^b	n
	Point (%) ^d	Point (%) ^d	Point (%) ^d	Point (%) ^d	Cumul. (%) ^b	n
9	-	-	-	5.8	5.8	206
10	-	-	-	5.4	8.7	205
11	-	-	-	5.4	11.7	202
12	14.3	3.4	3.4	4.5	14.1	202
13	16.3	2.5	5.3	5.0	16.5	200
14	11.9	1.5	6.3	4.5	17.5	199
15	8.5	0.5	6.8	4.5	18.9	198
16	8.9	0.5	7.3	5.5	20.9	201
17	11.4	0.5	7.8	4.0	22.3	201
18	8.9	0	7.8	-	-	-
19	9.4	0.5	8.3	3.6	23.8	197
20	8.4	0	8.3	4.6	24.8	195
21	9.4	0.5	8.7	-	-	-
22	11.3	0	8.7	-	-	-
23	7.4	1.0	9.2	-	-	-
24	8.6	1.0	9.7	-	-	-
25	5.6	0	9.7	-	-	-
26	-	-	-	-	-	-
27	5.8	0.5	9.7	-	-	-
28	2.6	0	9.7	-	-	-
29	5.8	0.5	9.7	-	-	-

Note. "Any" suicidal ideation included "I think about killing myself but would not do it" or worse; suicidal ideation with some intent included "I would like to kill myself" or worse.

^aBased on n at assessment year.

^bBased on full sample n = 206.

Table 2

Average Depressive Symptom Scores and Proportion Exceeding Clinical Cut-off Scores Within Groups Defined by Self-reported Suicidal Ideation

Age (years)	Group	N	Mean (SD) Depression	% above cut-off
12 ¹	Non-SI	173	7.7 (4.2)	11.0%
	SI	29	12.0 (5.6)	41.4%
13 ¹	Non-SI	169	7.1 (4.1)	11.2%
	SI	33	11.9 (5.8)	39.4%
14-29 ²	Non-SI	102	6.6 (3.9)	3.0%
	SI			
	Across non-ideating years	104	9.4 (4.9)	9.6%
	Across ideating year(s)		18.2 (9.9)	59.2%

Note. Non-SI = boys/men who denied suicidal ideation at or across all specified ages. SI = boys who reported suicidal ideation at ages 12 or 13, or men who reported suicidal ideation at one or more assessments between ages 14 and 29 years.

¹Using DSRS (cut-off ≥ 13)

²Using CES-D (cut-off ≥ 16)

Table 3 Sensitivity of Parent Reported Youth Suicidal Talk to Self-Reported Suicidal Ideation Across Ages 12 to 20 years^a

Age (years)	Sensitivity % (n)	1 - Sensitivity ^b % (n)	Total n
12	11% (3)	89% (25)	202
13	13% (4)	87% (28)	199
14	13% (3)	87% (21)	197
15	20% (3)	80% (12)	196
16	17% (3)	83% (15)	200
17	5% (1)	95% (21)	199
19	6% (1)	94% (17)	195
20	7% (1)	93% (14)	194

Notes. Four patterns of identification were possible: 1) self-reported suicidal ideation (SI), parents reported youth suicidal talk (*true-positive*); 2) son reported SI, parents denied suicidal talk (*false-negative*); 3) son denied SI, parents reported suicidal talk; or 4) son denied SI, parents denied suicidal talk. Sensitivity = (true-positives) / (true-positives + false-negatives) = % of participants who self-reported suicidal ideation who were correctly identified by parent reports.

^aYouth did not complete self-report of suicidal ideation prior to age 12 years. Parent reports of youth suicidal talk were not collected at the age 18 assessment.