Suicidality, School Dropout, and Reading Problems Among Adolescents

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Abstract

The purpose of this study was to examine the risk of suicidal ideation and suicide attempts and school dropout among youth with poor reading in comparison to youth with typical reading ($n = 188$) recruited from public schools at the age of 15. In a prospective naturalistic study, youth and parents participated in repeated research assessments to obtain information about suicide ideation and attempts, psychiatric and sociodemographic variables, and school dropout. Youth with poor reading ability were more likely to experience suicidal ideation or attempts and more likely to drop out of school than youth with typical reading, even after controlling for sociodemographic and psychiatric variables. Suicidality and school dropout were strongly associated with each other. Prevention efforts should focus on better understanding the relationship between these outcomes, as well as on the developmental paths leading up to these behaviors among youth with reading difficulties.

Adolescents with significant reading problems are at higher risk for behavioral and emotional difficulties than adolescents with typical reading ability (Arnold et al., 2005). Moreover, youth with learning disabilities (LD) have been suggested to be at increased risk for suicidal behaviors (Bender, Rosenkrans, & Crane, 1999; Huntington & Bender, 2001). For example, a higher than expected number of youth with LD was found in a survey of high school counselors about suicide-related occurrences in schools (Hayes & Sloat, 1988). Furthermore, in the National Longitudinal Study of Adolescent Health, youth with LD attempted suicide more often than youth without LD (Svetaz, Ireland, & Blum, 2000).

Despite these findings, few studies have examined the relationship between specific reading problems, such as poor single-word reading ability or reading disabilities (RD) per se, and suicidality. In an approximately 25-year follow-up study by our own research group of 50 randomly chosen children with reading disabilities originally assessed by June Lyday Orton, we found that four individuals completed suicide—a rate much higher than the 13.1 to 15.2 per 100,000 rate of completed suicides among 35- to 64-year-olds in the general population of the United States (Anderson & Smith, 2003). Boetsch, Green, and Pennington (1996) also examined the relationship between RD and suicidality and found that youth with RD thought about suicide more often than comparison youth in a clinical sample without reading problems, but not more often than co-twins.

Moreover, many of these youth with RD have difficulties with and may perform poorly in school, given that reading is a foundational skill for other school subjects (Lyon, 1998). At the extreme end of poor academic performance, youth with RD may be more likely to fail to complete high school. There also is an increased risk for failure to complete secondary education among individuals with psychiatric disorders (Stoep, Weiss, Kuo, Cheney, & Cohen, 2003) and a higher rate of psychiatric disorders among youth with reading problems (Goldston et al., 2006), but the degree to which school dropout among youth with RD is attributable to comorbid psychiatric problems is not clear.

Prevention interventions have focused on youth at risk for dropping out of school as a high-risk group for suicidal behavior as well (Thompson, Eggert, Randell, & Pike, 2001; Eggert, Thompson, Herting, & Nicholas, 1995). Indeed, variables reflective of school difficulties, such as days missed in school, lack of completion of homework assignments, and dissatisfaction with school grades, all have been found to be associated with a greater likelihood of past suicide attempts among adolescents (Lewinsohn, Rohde, & Seeley, 1993). Nonetheless, there have been few systematic prospective studies of the trajectories of adolescents with RD relative to adolescents

without reading problems, or of the relationship between suicidality and lack of school completion. Any relationship that may exist between suicidality and school dropout might be due to sociodemographic variables or psychiatric disorders that might be related to both outcomes. For example, major depressive disorder, disruptive behavior disorders, and substance use disorders have been found to be associated with school dropout as well as suicide attempts (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Beautrais et al., 1996; Lynskey, Coffey, Degenhardt, Carlin, & Patton, 2003).

Theoretical Framework

Unfortunately, few researchers have examined these difficulties using a theoretical framework that might help explain the etiology or the trajectories leading to these negative outcomes among youth with poor reading. In this regard, Baumeister (1990) developed a model that may help to explain such difficulties. In the model, which was originally developed to help explain why some individuals attempt suicide, Baumeister proposed that some instances of suicide were thought to represent an effort to "escape from the self" (p. 1) following situations that led to perceptions of limitations.

There are six stages in Baumeister's (1990) escape theory. In the first stage, Baumeister suggested, suicidal individuals experience an event or situation suggestive of performance or behavior that is below expected standards. For youth who have difficulty with reading, this may be evidenced in school failure or academic difficulties. The second stage in Baumeister's theory involves blaming one's self for the failure experience and, in turn, referring to one's self in negative ways. For example, youth with poor reading skills may refer to themselves in derogatory terms such as *lazy* or *stupid* (McNulty, 2003). In the third stage, individuals compare their perceived inadequacies to the abilities of others.

Among youth with poor reading skills, this may be evident in self-statements such as "I am not as smart as other kids." The fourth stage of escape theory suggests that negative emotions arise as a result of these negative self-labels and comparisons to others. This stage may account for some of the behavioral and emotional correlates associated with poor reading. In particular, youth with poor reading and accompanying academic difficulties may experience increasing frustration, low self-esteem, and loss of motivation for learning as they progress through school (Lyon, 1998). The fifth stage of escape theory suggests that the individuals attempt to avoid "meaningful thought" by slipping "into a relatively numb state of cognitive deconstruction" (Baumeister, 1990, p. 91) in response to the negative emotions they are experiencing. Baumeister noted that this does not result in a complete escape and that individuals may try other means to escape the negative emotions they are experiencing. For youth with poor reading abilities, this may be evidenced by increased rates of dropping out of school (Wagner, D'Amico, Marder, Newman, & Blackorby, 1992). In the sixth and final stage of Baumeister's theory, individuals lose some of their inhibitions and, therein, may consider the possibility of suicide as a way of escape.

Hence, to the degree to which reading problems trigger a cycle of negative self-evaluation and emotion, eventually leading to efforts to escape aversive situations and self-awareness, we would expect adolescents with single word reading problems to have higher rates of school dropout and suicidality. Furthermore, because these theoretically are outcomes of a common developmental process, we would expect a significant association between school dropout and suicidality. Therefore, the purpose of this study was to examine the rates and interrelationship of suicidal behaviors and school dropout among youth with poor single word reading ability in comparison to youth with typical reading ability (N = 188) recruited from public schools at the age of 15. More specifically, this prospective, naturalistic study addressed the following hypotheses:

1. Adolescents with poor reading abilities will evidence higher rates of suicidal ideation and suicide attempts over time than adolescents with typical reading abilities. These differences will be apparent after controlling for demographic variables—age, race/ethnicity, socioeconomic status (SES), and gender—and selected psychiatric disorders (e.g., major depressive disorder, conduct and oppositional defiant disorders, and substance use disorders).
2. Adolescents with poor reading abilities will evidence higher rates of school dropout than adolescents with typical reading abilities. These differences will also be apparent after controlling for demographic variables and psychiatric disorders.
3. School dropout will be significantly related to suicidality. This relationship will persist after controlling for demographic variables and psychiatric disorders.

Method

Participants and Recruitment

The 188 adolescents participating in this study were screened at the age of 15 from 10th-grade classes in six public high schools in the southeastern portion of the United States. Four of the schools served youth in an urban area, and two schools served youth in a rural area. Youth were screened at the age of 15 so they could be identified prior to the age when they could legally drop out of school (i.e., 16) in the state where the study was conducted. In addition to the age requirement for participation in the study, youth had to (a) have at least one living and available parent or legal guardian; (b) have written consent from a

parent or legal guardian; (c) not have a sibling who was enrolled in this study; (d) not be in classes for students with educable mental retardation; and (e) have English as a first language.

Altogether, 1,062 fifteen-year-olds were screened and deemed eligible for this study; of these, 148 youth were classified as *poor readers* and 914 were classified as *typical readers* on the basis of their single word reading ability (as described later). To identify participants for the longitudinal study, we contacted 239 study-eligible adolescents and families from the original screening pool; 222 (92.9%) responded to these contacts. Of those who responded, 82.5% (94 of 114) of the poor readers and 87% (94 of 108) of the typical readers agreed to participate. Our study sample was selected by using frequency distribution matching. Specifically, the distribution of gender and race/ethnicity among the poor readers recruited from each school was monitored, and typical readers with roughly the same distribution of gender and race/ethnicity strata were recruited from each school to obtain a balance in demographic characteristics between the two groups (Arnold et al., 2005).

The resulting sample included 82 girls and 106 boys, of which 51% ($n = 96$) were African American, 45% ($n = 85$) were European American, and the remainder were either Hispanic ($n = 2$; 1%) or biracial ($n = 5$; 3%). As classified by the Hollingshead Index (Hollingshead, 1957), the socioeconomic status of youth at the index psychiatric interview was distributed as follows: I (highest), 4.8%; II, 8.0%; III, 36.7%; IV, 35.6%; and V (lowest), 14.9%. Demographic characteristics of the poor reading and typical reading groups are presented in Table 1.

As of the cutoff date for these analyses (December 6, 2004), participants had been followed for a maximum of 4.5 years ($Mdn = 3.3$ years) for a total of 721 assessments (maximum of 4 per participant). Five youth (3 girls, 2 boys; 2.7% of the total sample) withdrew from the study—4 from the poor reading group and 1 from the typ-

ical reading group. By the cutoff date, 13 participants (7% of the total sample) were overseas (e.g., in the military) or otherwise could not be contacted for a final assessment.

Measures

Assessment of Reading Difficulties. The Letter–Word Identification (LWID) subtest of the *Woodcock-Johnson Psychoeducational Battery–Revised* (WJ-R; Woodcock & Johnson, 1990) was administered as the primary screening instrument to identify adolescents with poor and typical single word reading ability. This single word test of reading contains words through the college level. Youth with a raw score below 45 were classified as having reading problems; those with scores of 45 and higher were considered to have typical reading abilities. According to the na-

tional norms on the WJ-R, this cutoff score was at the 18th percentile for youth age 16 years 0 months. This cutoff identified in the school population a roughly comparable proportion of individuals to that found in our genetic studies of dyslexia with the "single word phenotype" (i.e., significant difficulties with single word reading; see, e.g., Grigorenko, Wood, Meyer, & Pauls, 2000). This percentile cutoff is comparable to the 15th percentile cutoff used as one of the methods by Rutter et al. (2004) to define RD in four large epidemiological studies and is more conservative than the 25th to 30th percentile noted by Lyon, Fletcher, Torgesen, Shaywitz, and Chhabra (2004) to indicate below-average performance. The cutoff on the LWID was used to identify youth with reading problems, rather than using discrepancy criteria, because the validity of discrepancy cri-

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TABLE 1

Descriptive Characteristics of Participating Adolescents with Poor Single Word Reading Ability and Typical Single Word Reading Ability

Measure	Poor readers		Typical readers	
	n	%	*n*	%
Gender				
Male	52	55	54	57
Female	42	45	40	43
Race/ethnicity				
African American	47	50	49	52
European American	44	47	41	44
Hispanic	1	1	1	1
Biracial/ethnic	2	2	3	3
SES				
I (highest)	1	1	8	9
II	7	7	8	9
III	33	35	36	38
IV	35	38	32	34
V (lowest)	18	19	10	10
High school				
Urban	75	80	72	77
Rural	19	20	22	23
	M	Range	*M*	Range
Age at screening	15.4	15.0–15.8	15.4	15.0–15.9

Note. This is a modification of a table originally presented in "Severity of Emotional and Behavioral Problems Among Poor and Typical Readers" by E. M. Arnold, D. B. Goldston, A. K. Walsh, B. A. Reboussin, S. S. Daniel, E. Hickman, et al., 2005, *Journal of Abnormal Child Psychology, 33*(2), p. 208. Copyright 2005 by *Journal of Abnormal Child Psychology.* Adapted by permission. SES = socioeconomic status.

teria has been questioned (Flowers, Meyer, Lovato, Wood, & Felton, 2001; Stuebing et al., 2002). Defining the groups in this way, the median single word reading ability scores of the poor reading and typical reading groups were at the 10th and the 45th percentiles, respectively (using norms for age 16 years 0 months).

Although the poor reading and typical reading groups were identified on the basis of the LWID, they also completed several other reading tests. The *Decoding Skills Test* Real Words subtest (Richardson & DiBenedetto, 1985), another test of single word reading, was administered to the entire screening sample together with the LWID. The *Test of Auditory Analysis Skills* (Rosner, 1979), a test of phonemic awareness, and the WJ-R Word Attack Subtest (Woodcock & Johnson, 1990), a test of pseudoword reading skills, were administered at the initial research assessment of the follow-up study (to the 188 adolescents participating in this phase of the research). The *Rapid Automatized Naming* (Digits and Letters) tasks (Denckla & Rudel,

1976), tests of fluency, and the *Decoding Skills Test* Nonwords subtest (Richardson & DiBenedetto, 1985), a test of decoding skills, were administered at the first follow-up assessment. The *Lindamood Auditory Conceptualization Test* (Lindamood & Lindamood, 1971), a test of phonemic awareness, was administered to participants at the second follow-up assessment. As can be seen in Table 2, the different reading groups differed in their performance on each of these reading measures.

Assessment of Psychiatric Disorders and Suicidal Behaviors. Psychiatric diagnoses for youth in this sample were assessed with a semistructured diagnostic interview, the *Schedule for Affective Disorders and Schizophrenia for School-Age Children–Epidemiologic Version*, fifth edition (K-SADS-E; Orvaschel & Puig-Antich, 1994). Adolescents and their parents or legal guardians were interviewed with the K-SADS-E by master's-level trained research clinicians. At the first assessment, adolescents and families were asked about psychiatric problems

in the last year; at subsequent assessments, the interview focused on psychiatric symptoms since the last assessment. When information provided by adolescents and adults was inconsistent, additional questions were asked, and a clinical judgment was made as to the most valid report (based on the detail or specificity of the report, etc.). When both informants were judged to be reliable but the symptom was reported by one but not the other, the symptom was assumed to be present. Final "best estimate" diagnoses were made on the basis of all available information, including responses to the K-SADS-E and psychiatric treatment records. Furthermore, each research interview was independently reviewed by a research clinician other than the clinician who conducted the interview or by the principal investigator of the study, and final diagnoses were decided by consensus. For this study, we focused on three psychiatric disorders or diagnostic groupings, chosen because of their potential relationship with both outcomes of interest: major depressive disorder, conduct disorder or oppositional defiant disorder, and substance use disorders. A separate reliability study was not conducted in the context of this study; however, K-SADS-E diagnoses previously have been found to have moderate to good reliability (Ambrosini, 2000).

Suicidal behaviors, including suicidal ideation and suicide attempts, were assessed at each interview using the K-SADS-E (lifetime history of attempts and suicidal ideation within the last year at index interview; attempts and ideation since the last follow-up at subsequent assessments). Specifically, youth were asked questions such as, "Do (did) you think about hurting or killing yourself?" "What do (did) you think of doing?" "Did you try to kill yourself?" "What did you do?" Self-destructive behavior was classified as a suicide attempt if it was associated with any desire to die, regardless of multiple motives or ambivalence associated with the act. Self-harm behav-

TABLE 2
Participants' Performance on All Reading Measures by Reading Ability Group

Reading measure	Poor readers			Typical readers		
	M	**SD**	**Range**	**M**	**SD**	**Range**
Decoding Skills						
DST Nonwords	36.2	9.7	2–57	52.0	5.3	36–60
WJ-R Word Attack	14.0	4.4	4–25	23.7	3.5	13–29
Fluency						
RAN Digits	22.2	4.5	13–39	19.0	3.3	12–35
RAN Letters	21.9	4.3	15–39	18.4	4.1	13–46
Phonemic Awareness						
LAC	70.3	15.7	29–100	87.7	13.8	34–100
TAAS	9.0	2.6	1–13	11.3	2.1	4–13
Single Word Reading						
DST Real Words	51.3	6.5	24–60	58.9	1.5	53–60
WJ-R LWID	41.2	2.8	29–44	50.3	2.4	45–56

Note. DST = *Decoding Skills Test* (Richardson & DiBenedetto, 1985); WJ-R = *Woodcock-Johnson Psychoeducational Battery–Revised* (Woodcock & Johnson, 1990); RAN = *Rapid Automatized Naming* (Denckla & Rudel, 1976); LAC = *Lindamood Auditory Conceptualization Test* (Lindamood & Lindamood, 1971), converted total score; TAAS = *Test of Auditory Analysis Skills* (Rosner, 1979); LWID = Letter–Word Identification subtest. All differences significant at $p < .001$ for contrasts between the two reading groups using t tests with unequal variances. Sample sizes ranged from $N = 188$ for the WJ-R LWID and DST Real Words administered at screening to $N = 179$ for the LAC.

iors not associated with intent to kill oneself were not considered to be suicide attempts. Suicidal acts that were stopped before they were executed were considered to be suicidal ideation rather than suicide attempts. This classification scheme is consistent with that proposed by O'Carroll et al. (1996) and has been used previously (e.g., Goldston et al., 1996, 1998, 1999, 2001).

Assessment of School Dropout and Sociodemographic Variables. Information about school dropout and other sociodemographic variables (age, gender, socioeconomic status, race/ethnicity) was collected during the interview with adolescents and their families and was recorded onto structured coding sheets at initial follow-up interviews. Socioeconomic status (SES) was coded using the Hollingshead Index (Hollingshead, 1957).

Individuals were classified as not completing high school when they dropped out of school or otherwise took a path that led to them not successfully graduating from their high school. This included youth who dropped out of school to study for or take the graduate equivalency degree (GED), youth who were incarcerated and did not continue their education, and youth who decided to receive vocational training rather than finish secondary school. These youth were classified as "dropouts" the first time that they left high school, regardless of whether they later returned to school and eventually graduated ($n = 4$) or received their graduate equivalency degree ($n = 1$). None of the youth who were sentenced to a juvenile correctional facility or chose to attend a job training program ($n = 3$) received their graduate equivalency degree or diploma.

Overview of Procedures

Students were screened for single word reading difficulties in the high schools, during the school day, with the written consent of their parents. Enrolled research participants took part in the initial study assessment along with their primary caretakers. The *primary caretaker* was defined as the adult who spent the majority of time with the youth and was accountable for the youth's supervision and well-being. Primary caretakers were no longer interviewed when youth moved out of their parents' or caretakers' homes, when the youth got married or moved into the home of a "significant other," or after youth reached their 18th birthday. The index assessments and the follow-up interviews were conducted on-site at the medical center, at the youth's place of residence, or at a neutral site (e.g., a room in a local library). Participants and informants received monetary compensation for completing the index and the follow-up assessments. Participants in the study were interviewed yearly following their index assessment (median time between interviews = 12.8 months). The amount of time that elapsed between assessments varied among participants due to youth's preferences, difficulty locating youth, and staff shortages. Although different reading tests were administered at each assessment (as described previously), the procedures for assessing the outcomes of interest at the index and at each of the follow-up assessments were largely similar.

Statistical Methods

For purposes of analysis, we examined at each assessment whether participants had dropped out of school (or otherwise taken a path that led to their not successfully completing high school) and whether they reported suicide attempts or suicidal ideation. We used discrete-time survival analysis (Allison, 1984; Cox 1972) to examine the incidence and cumulative prevalence of dropout and suicide attempts or suicidal ideation as a function of interview period, reading status, and other covariates. This method divides the observation period into discrete intervals (in this instance, interview periods) and incorporates covariates as it predicts the hazard of dropout and suicide attempts or ideation—that is, it estimates the probability of dropping out of school or experiencing suicide attempts or suicidal ideation at a given assessment for participants who had not experienced these events previously. We used a logit transformation of the hazard to make it tractable for statistical analysis and estimated coefficients for the survival models using logistic regression. The cumulative prevalence was calculated as one minus the product of one minus the hazard at each interview period.

In multivariate predictive models, in addition to reading status and interview period, we considered the contributions of gender, race/ethnicity, SES, current age, major depression, conduct disorder, and substance abuse disorder. For models of dropout, data were censored after the last interview in which participants reported graduating from high school—that is, after graduation, participants did not have further opportunity to drop out of high school. In a second series of models, we examined suicidality as an outcome by modeling suicidality as a function of dropout, reading status, and interview period. We then fit multivariate models adjusting for the effects of sociodemographic characteristics and psychiatric diagnoses. We used analogous procedures for modeling dropout as a function of suicidality. In predictive models of suicidality, participants were classified as not completing school as soon as they dropped out or changed school status, regardless of whether they returned to school at a later time. In predictive models of dropout, participants were classified as being suicidal the first time they reported suicidal ideation or suicide attempts.

Results

School Dropout

Rates of school dropout in the two reading groups are presented in Table 3. In univariate analyses, dropout

TABLE 3
Cumulative Rates of Suicidality, School Dropout, and Psychiatric
Disorders by Reading Ability Group

Outcome	Poor readers	Typical readers
Suicide attempts/Suicidal ideation	25.2	8.5
School dropout	30.2	5.1
Major depression	29.5	18.5
Conduct disorder/Oppositional defiant disorder	13.1	8.6
Substance use disorder	25.9	18.7

Note. All rates expressed as percentages.

was found to be strongly related to reading status, odds ratio [OR] = 7.18, $SE = 3.93$, $p < .001$, with adolescents with poor reading abilities evidencing a higher incidence of dropout than adolescents with typical reading abilities. In multivariate models with sociodemographic variables, reading status was still found to be related to dropout, OR = 6.10, $SE = 3.39$, $p = .001$, along with race/ethnicity, OR = 2.74, $SE = 1.22$, $p = .024$, and SES, OR = 2.97, $SE = 1.38$, $p = .019$. With regard to race/ethnicity, the incidence of dropout was higher among European American youth than among minority youth. Moreover, youth of lower SES were more likely to drop out of school than youth of higher SES. In the second multivariate model with psychiatric diagnoses, reading status, OR = 5.81, $SE = 3.35$, $p = .002$, major depression, OR = 3.38, $SE = 2.04$, $p = .044$, and conduct disorder, OR = 6.74, $SE = 3.81$, $p = .001$, were all significantly related to the risk of dropout.

Suicidality

Cumulative rates of suicidality for the two reading groups are presented in Table 3. In univariate models, reading status was found to be related to suicidality, OR = 3.38, $SE = 1.43$, $p = .004$, with adolescents with poor single word reading ability evidencing a higher incidence of suicidality. Reading status continued to be related to suicidality after adjusting for sociodemographic variables, OR = 2.70, $SE =$

1.18, $p = .023$. In these models, race/ethnicity and chronological age were also found to be related to an increased risk of suicidality, OR = 2.28, $SE = 0.98$, $p = .054$; OR = 2.29, $SE = 0.75$, $p = .011$, respectively, with European American youth more likely to report suicidality than minority youth, and older youth more likely to report suicidality than their younger peers. In the final multivariate model, reading status was related to an increased incidence of suicidality, OR = 3.78, $SE = 1.95$, $p = .010$, along with major depression OR = 4.87, $SE = 3.11$, $p = .013$, conduct disorder, OR = 8.31, $SE = 4.70$, $p < .0005$, and substance use disorder, OR = 6.25, $SE = 3.81$, $p = .003$, respectively.

Relationship Between Suicidality and Dropout

Suicidality was strongly related to an increased risk of dropout at the univariate level, OR = 13.52, $SE = 5.60$, $p < .001$, and after adjustment for sociodemographic characteristics and psychiatric diagnoses, OR = 7.29, $SE = 3.93$, $p < .001$. Similarly, dropout was related to an increased incidence of suicidality, both univariate, OR = 23.47, $SE = 11.94$, $p < .001$, and after adjustment for sociodemographic characteristics and psychiatric diagnoses, OR = 11.03, $SE = 6.53$, $p < .001$.

Discussion

This study examined the rates of suicidal ideation and behavior and lack

of successful high school completion among youth with poor and typical reading abilities. Our findings suggest that youth with poor reading abilities exhibit significantly more suicidal ideation and suicide attempts and have a much greater chance of not completing secondary school than their peers with typical reading abilities. Furthermore, these outcomes appear to be strongly interrelated.

Our findings are consistent with the suggestions of others that youth with reading or learning problems may experience higher rates of suicidal behavior (Hayes & Sloat, 1988; Huntington & Bender, 2001) and dovetail with our earlier findings (described previously in this article) of the high rate of death by suicide in the follow-up of the Orton sample of youth with RD. The interrelationship between dropout and suicidality complements the findings from an epidemiological study regarding the higher risk of suicide attempts among youth with school difficulties, missed school days, and dissatisfaction with grades (Lewinsohn et al., 1993). It also lends validity to suicide prevention efforts that have focused on youth at risk for dropout (Eggert et al., 1995; Thompson et al., 2001).

The relationship between poor single word reading ability, school dropout, and suicidality is consistent with the implications of escape theory (Baumeister, 1990). Specifically, both school dropout and suicidal behavior may be the end result of a developmental trajectory that begins with frustrations and difficulties in the school experience and negative self-evaluations associated with reading problems. Although it makes intuitive sense that youth may want to avoid situations or experiences that highlight areas of difficulty, additional research is needed to determine whether the steps and processes leading to poor outcomes are precisely as Baumeister (1990) described.

In this study, psychiatric disorders appeared to be related to both suicidality and school dropout. However, neither the rate of dropout nor the sui-

cidal thoughts and behaviors associated with poor single word reading ability were totally accounted for by the psychiatric variables that affect both outcomes. This suggests that the risk conveyed by significant reading difficulties is independent of or over and beyond that associated with comorbid psychiatric conditions.

Moreover, suicidality and school dropout both varied as a function of sociodemographic factors. Specifically, suicidality in this study was more common among European American adolescents than among minority adolescents. Similar to previous studies, dropout was associated with lower socioeconomic status (National Center for Education Statistics, 1999), but unlike other studies, dropout was not more common among minorities, particularly African American youth (National Center for Education Statistics, 2003). As with the risk associated with psychiatric disorders, we found that the risk conveyed by RD is independent of the risk associated with race/ethnicity status and lower socioeconomic status. Nonetheless, it is possible that the stresses associated with reading difficulties add to or interact with other risk factors or stresses in these young people's lives to significantly increase the likelihood of outcomes such as suicidality and not completing high school.

In terms of the practical implications of these findings, educators should be aware of the risk of suicidal thoughts and behavior among adolescents who have reading problems or are at risk for not completing high school. Conversely, educators should be cognizant of the fact that youth referred for suicidal ideation and behavior may be at heightened risk for not finishing school. Furthermore, future studies might evaluate and validate aspects of Baumeister's (1990) escape theory as a means of understanding the process that results in the negative behavioral and emotional outcomes described in this article for youth with poor reading. Such information can, in turn, be used to inform prevention in-

tervention efforts for this high-risk group of youth. In this regard, it is important to note that a significant number of the participating adolescents with reading problems did *not* have the poor outcomes of school dropout or suicidality. More research is needed to determine which youth with poor reading might be most vulnerable to the poor outcomes and processes described by Baumeister (1990) and which factors might be associated with resiliency in the face of the stresses associated with school problems and poor reading ability.

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