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Preventing Youth Suicide: Issues for Law Enforcement Personnel

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Abstract

Suicide is a leading cause of death for adolescents. A number of problem behaviors associated with youth suicide fall into the purview of law enforcement personnel, and they are therefore in a position to detect risk and prevent suicidal behaviors. Eight hundred one youth identified as having school difficulty, a group at increased risk for both suicide and legal problems, participated in a paper and pencil survey followed by an interview focusing on suicide risk and protective factors. Linear regression was used to examine the ability of factors within each risk and protective factor dimension to predict current suicide risk. The study goal was to determine the most relevant factors influencing suicide risk in each domain examined. Findings are discussed in terms of implications for assessment and policy for law enforcement personnel.

Keywords

adolescent; prevention; risk and protective factors; suicide

Introduction

Suicide is the 3rd leading cause of death for young people ages 15–24 in the United States (Centers for Disease Control, 2004). Young people who have difficulty in school (Fergusson, Beautrais, & Horwood, 2003; Thompson, Moody, & Eggert, 1994), have access to firearms (Cavanagh, Carson, Sharpe, & Lawrie, 2003; Werenko et al., 2000), display antisocial or conduct disordered behaviors (Haavisto et al., 2004; James, Lai, & Dahl, 2005), or have a history of disciplinary or legal problems (Beautrais, 2001; Brent et al., 1993a; Fergusson et al., 2003; Gray et al., 2002) are among those at increased risk for suicide or suicidal behavior. Recent tragedies in United States high schools highlight the fact that the convergence of some or all of these factors can result not only in suicide but also in death and/or serious injury to others. Suicide and suicidal behavior are often preventable (Goldney, 2000; Nierenberg, Gray, & Grandin, 2001), but detection of warning signs and prompt intervention are key factors in prevention (Washington State Department of Health, 2005). Because a number of behaviors associated with youth suicide risk fall into their purview, law enforcement personnel are in a unique position to help prevent suicide and suicidal behaviors among young people.

In their interactions with youth, law enforcement personnel are often charged with the task of managing problematic behaviors, detaining the young person, or determining consequences for behavior. Situations may be complicated by defiant, uncooperative, and even combative

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behaviors on the part of the young person. Attention to these overt problematic behaviors is understandable and appropriate, particularly because these behaviors often interfere with the rights and safety of others. In addition, these same young people who engage in high-risk behaviors are also at risk for suicide and therefore require careful assessment and supervision by law enforcement personnel.

The purpose of this study was to examine factors that increase or decrease suicide risk among a group of high school students at risk for school dropout, a population known to be at increased risk for multiple problem behaviors (Thompson, Connelly, & Eggert, 2004). Research questions were: (1) In the domains of emotional distress, stress, risky behaviors, and drug involvement, which risk factors were the strongest predictors of current suicide risk?, and (2) In the domains of personal resources and social resources, which protective factors were the strongest predictors of current suicide risk? Specific risk and protective factors are discussed in terms of particular behaviors that can be observed or assessed by law enforcement personnel, and implications for suicide risk assessment and policies and procedures are described.

Background and Significance

Co-occurring Risk Behaviors

Risk behaviors can, directly or indirectly, endanger the health and well being of a young person. Risk behaviors have the potential to result in personally, socially, or developmentally undesirable outcomes (Jessor, 1998). A premise of problem behavior theory (Jessor & Jessor, 1977) is that behavior is a result of social-psychological relationships among three major systems: personality, perceived environment, and behavior. Problem behaviors generally do not occur in isolation, and behavior is not exclusively problem-oriented or conventionally oriented. That is, most individuals engage, to a greater or lesser degree, in both problem and conventional behavior (Jessor, 1998). Conventional behavior is socially approved, normatively expected, and institutionalized as appropriate. Problem behavior, on the other hand, is behavior that is defined by society as a problem, as a source of concern, or as undesirable, and usually departs from social norms sufficiently to require social control responses (Jessor & Jessor, 1977).

Co-occurring problem behaviors of central importance in this study are suicide risk behaviors, legal difficulties, and problems in school. It is clear that law enforcement personnel interact frequently with adolescents. In 2000, United States (US) law enforcement agencies made arrests of approximately 2.4 million persons under the age of 18 (Snyder, 2002). Based on statistics reported in 2000, approximately 107,000 individuals under age 18 were incarcerated in the US on any given day, with approximately 14,500 of these youth in adult facilities (Austin, Johnson, & Gregoriou, 2000).

Suicide Risk Behaviors and Legal Difficulties

Studies of youth who died by suicide provide information to guide prevention efforts, and there is evidence that a number of youth who died by suicide had contact at some point with the legal system. A United Kingdom study determined that 52% of the 27 young people who died by suicide had a problem involving the police at some point in their lives (Houston, Hawton, & Shepperd, 2001). In a US study of 151 youth ages 13–21 years who died by suicide (Gray et al., 2002), 63% had a referral to juvenile justice, and 80% of those under age 18 had juvenile justice system contact. In a Canadian study (Farand, Chagnon, Renaud, & Rivard, 2004), 57 (32%) of 177 persons age 18 or younger who died by suicide had juvenile justice records, and 45 (25%) were involved with the juvenile justice system within a year prior to death.

Studies examining youth currently involved in the juvenile justice system provide further evidence that these youth are at risk for suicide. In a study of incarcerated male youth in Russia,

Ruchkin, Schwab-Stone, Koposov, Vermeiren, & King (2003) found that 17% had suicide ideation and 17.6% had made a prior suicide attempt. Esposito and Clum (2002) studied 200 youth at three detention facilities in the US and found that 102 (52%) had current suicide ideation. They classified 46% of these 102 youth as having mild suicide ideation and 54% as having moderate to severe suicide ideation. At another US detention facility, of the 555 youth who completed questionnaires, 33.7% reported having had thoughts of suicide in their lifetime, while 14.2% had current suicide ideation, and 19.4% had made a prior suicide attempt (Rohde, Seeley, & Mace, 1997). Similarly, Wasserman, McReynolds, Lucas, Fisher, and Santos (2002) interviewed 292 youth recently admitted to two juvenile correctional facilities in the US and found that 9.6% had thought about death or had suicide ideation in the last month, and 3.1% reported making a suicide attempt in the last month. Goldstein et al. (2003) found that 36.2% of 232 youth ages 12–18 in a juvenile justice facility had suicide ideation. Penn, Esposito, Schaeffer, Fritz, and Spirito (2003) reviewed charts of 289 youth in a juvenile correctional facility and found that 12.4% had made a suicide attempt.

School and Juvenile Justice System Problems

Evidence also suggests that young people who are having difficulty in school are at risk for legal problems. For example, Rohde et al. (1997) found that 56.7% of youth were in school prior to being in detention, with only 2.9% having graduated from high school. The remainder (40.4%) had dropped out. In a study examining 93 youth served by the special education, juvenile justice, and child welfare systems (Malmgren & Meisel, 2002), the largest proportion (48.9%) was first identified by the public school system, and behavior problems were the reason for special education referral in 55.1% of the sample. The majority of these youth involved in all three systems demonstrated early conduct problems and had high rates of school mobility.

Risk Factors

Risk factors examined in this study included emotional distress (depression, anxiety, hopelessness, anger), stress (number and type of stressors, family distress), risky behaviors (high-risk behavior, violence/victimization) and drug involvement (frequency of alcohol, marijuana, and other illicit drug use; adverse drug use consequences, drug use control problems).

Emotional distress—Studies of community/school samples and patients provide important information. Wichstrøm and Rossow (2002) studied 9679 students in 63 schools in Norway and found that those who reported prior suicide attempts were more depressed than those who did not report attempts. A study of 2028 students in Australia demonstrated a significant relationship between depression scores and reporting of suicide ideation, with the probability of ideation increasing with increasing levels of depression. Grøholt, Ekeberg, Wichstrøm, & Haldorsen (2000) compared hospitalized youth who made a suicide attempt and average adolescents and found that, in both groups, depression and anxiety were common among those with suicidal behavior. Perkins and Hartless (2002) studied 14,922 teens and found that hopelessness was one of the predictors of suicide attempts but not of ideation.

DiFilippo and Overholser (2000) found that depressive symptoms accounted for 50% of the variance in suicidal ideation among 59 adolescent inpatients. In another study of inpatients (Spirito, Valeri, Boergers, & Donaldson, 2003), continued suicide ideation at three-month follow up was associated with greater depression symptoms and hopelessness. Anger was associated with violent suicide attempts in a study of 69 patients (Askenazy et al., 2003). Walrath et al. (2001) studied 4677 young people ages 5–17 years in 22 community mental health centers and found that those who had repeat suicide attempts were more likely to have a diagnosis of depression. In another study of outpatients (Csorba et al., 2003), hopelessness was one of the discriminators between suicidal and non-suicidal individuals.

Stress—In a study of 60 young people who died by suicide, 151 randomly selected non-suicidal comparison subjects and 125 individuals who made medically serious suicide attempts (Beautrais, 2003), risk of suicide was significantly associated with exposure to recent stressful life events. Werenko et al. (2000) found evidence of family dysfunction among 33% of the 186 young people who died by suicide in New Mexico between 1990 and 1994. King et al. (2001) found a significant association between suicide ideation or attempts and stressful life events, poor family environment, and low parental monitoring, among other factors, in a community sample of 1285 individuals ages 9–17 years. In another community-based study (Toumbourou & Gregg, 2002), suicide ideation was associated with parent-adolescent conflict, and suicidal behavior increased steadily as the number of conflicts increased. Wichstrøm (2000) found that high school students who had attempted suicide had poorer relationships with their parents. In a study of incarcerated male adolescents (Ruchkin et al., 2003), suicidal youth perceived their parents as more rejecting and less warm.

Risky behaviors—Risky behaviors examined in this study included high-risk behavior and violence/victimization. In terms of high-risk behaviors, Beautrais (2001) found that a disciplinary crisis was present for 26.2% of the 61 children and adolescents under age 15 who died by suicide. Among 4677 youth receiving outpatient services, suicide risk was associated with violent and aggressive behavior (Walrath et al., 2001). In a long-term study of child and adolescent depression (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001), death by suicide and suicide attempts were much higher among those who had both major depression and conduct disorder. Similarly, Kelly Cornelius, and Lynch (2002) found twice the rate of conduct disorder among those who had attempted suicide as those who had not. In a long-term study of a birth cohort (Fergusson et al., 2003), risk of suicide ideation and prior suicide attempts were related to truancy, suspension, and novelty-seeking behaviors.

There is also evidence supporting the influence of violence/victimization on suicide risk. For example, in the Fergusson et al. (2003) study, abuse was related to risk of both suicide ideation and prior attempts. Along similar lines, Perkins and Hartless (2002) found physical abuse and sexual abuse to be significant predictors of both suicide ideation and suicide attempts in a their large community-based study. Among 913 eighth graders in three states in the US (Evans, Marte, Betts, & Silliman, 2001), a link was found among suicide risk, perpetration of violence, and peer victimization.

Drug involvement—Werenko et al. (2000) found that 18% of the 184 youth they studied had a history of substance abuse, and that 50% had drugs or alcohol present at the time of death by suicide. Additional evidence comes from a study by Renaud, Brent, Birmaher, Chiappetta, & Bridge (1999), in which 1/3 of those who died by suicide had a positive toxicology screen for substances. Gray et al. (2002) reviewed cases of 151 youth who died by suicide. Of the 137 on which a toxicology screen was done, 15% had alcohol in their systems, and 24% had evidence of substance abuse. In a longitudinal study of 615 randomly selected junior and senior high school students (Light, Grube, Madden, & Gover, 2003), a significantly greater portion of drinkers than non-drinkers endorsed suicide ideation. For males, a causal relationship was found from alcohol problems to suicidality, while the reverse was true for females.

Protective Factors

Protective factors that were examined in this study were personal resources (self-esteem, personal control, coping) and social resources (amount, sense, and availability of support; family support satisfaction).

Personal resources—In the Fergusson et al. (2003) birth cohort study, resiliency to suicidal responses was associated with self-esteem, among other factors. Grøholt et al. (2000) found

that low-self esteem had a mediating effect on both suicidal hospitalized and suicidal community-based adolescents. It also differentiated between the two groups, and the authors suggested that this might be a mediating factor in the progression to more serious forms of suicidal behavior. In a community sample, low self-esteem was a predictor of prior suicide attempts (Wichstrøm, 2000). In the Csorba et al. (2003) study of outpatients, decreased self-esteem was a discriminator between suicidal and non-suicidal depressed youth.

In a large study of students (Martin, Richardson, Bergen, Roeger, & Allison, 2005), an external attributional style or locus of control was found for those who reported suicide thoughts, plans, threats and attempts. In terms of coping, Piquet and Wagner (2003) interviewed 23 adolescents hospitalized due to a suicide attempt and 19 inpatient controls and found that those who made attempts had significantly fewer effortful-approach and more automatic-approach coping responses. Also, both groups overestimated their coping effectiveness.

Social resources—The effects of support were among the issues examined by DiFilippo and Overholser (2002) in their study of adolescent inpatients. They found that perceived attachment to mother as well as peers accounted for a significant portion of variance in suicide ideation. Grøholt et al. (2000) found that, among adolescents hospitalized for suicide attempts and average adolescents, seldom seeking out parents or peers for support was associated with increased risk for being in the hospitalized attempter group versus the average adolescent group.

Summary

Information discussed in this section supports the importance of being vigilant for suicide risk among youth who are involved in the juvenile justice system, and school difficulties appear to increase risk. There is evidence supporting the links between the risk and protective factors examined in this study and suicidal behavior. High rates of mobility, suspension and chronic attendance problems suggest that there may be limited opportunities for consistent involvement in the school system (Malmgren & Meisel, 2002). Therefore, the juvenile justice system is a place where risk for suicide can be detected, and where prevention efforts can take place.

Method

Study Design

This exploratory secondary data analytic study utilized block recursive modeling to examine relationships between select risk and protective factors and suicide risk. Data were from an instrumentation study that utilized a two-staged survey interview design.

Participants

Sample selection for this study was carried out in cooperation with ten urban high schools in four school districts in the Pacific Northwest and Northern New Mexico regions of the United States. High schools were purposively sampled based on prior relationships with our research team and were invited to participate in the project.

In partnership with participating schools, students who met criteria for risk for school dropout were identified. Criteria used for determining eligibility were previously established (Herting, 1990): (1) below expected credits for grade, top 25th percentile for absences per semester, and grade point average less than 2.3 (on a 0–4 scale) or a precipitous drop of greater than 0.7; or (2) prior dropout status; or (3) standardized school referral as high risk and meeting one criterion identified in criterion (1). Based on available enrollment data, participants represented from 2% to 14% of students at the participating schools.

Of the 801 participants, 54% were male, and 46% were female; ages ranged from 14–21 years, with a mean age of 15.93 years ($SD = 1.22$). Teens were in grades 9–12. A variety of ethnic backgrounds were identified by participants: 40% White/Caucasian, 15% Black/African American, 13% Asian/Pacific Islander, 10% Hispanic/Latino, 3% Native American, 14% mixed ethnicity, and 4% identified themselves as “other.” Of these teens at risk for school dropout, 372 (46%) were determined to be at increased risk for suicide based on the Suicide Risk Screen (SRS) embedded in the questionnaire. The remainder (429/54%) did not screen in.

Instruments

Questionnaires—The High School Questionnaire (HSQ, Eggert, Herting, & Thompson, 1994) is a paper and pencil instrument that addresses a number of aspects of a high school student’s life. Areas included are family, school, drug use, moods, thoughts of suicide, coping strategies, and support. Suicide risk was determined by responses to the brief SRS, which is embedded in the HSQ. The brief SRS is a three-dimensional model with seven items related to suicide-risk behaviors; a depression score calculated from responses to five items; and ten items assessing alcohol and other drug use frequency, polydrug use, and drug use control problems. Sensitivity of the SRS across three validity measures ranged from 87–100%, and specificity ranged from 54–60% (Thompson & Eggert, 1999).

Interviews—The Measure of Adolescent Potential for Suicide (MAPS) interview is administered 1:1 by a trained research clinician. The interviewer uses a laptop computer so that answers can be recorded and shared with the adolescent at specific points in the interview. At the beginning of the MAPS, the interviewer shows and validates a graphed profile of the student’s HSQ responses. As detailed in Eggert, Thompson, and Herting (1994) and Walsh, Randell, and Eggert (1997), the interview portion begins with questions about stressors experienced, as these are relatively easy for the adolescent to talk about and provide a context for understanding the youth’s current concerns. Next, questions are asked about depression, hopelessness, and anxiety. Following this, questions related to suicide are asked. This subsection addresses attitudes and beliefs about suicide, followed by questions about thoughts, plans, prior suicide attempts, and exposure to suicidal behavior of family members or friends. Next, questions are asked about risky behaviors, including alcohol and other drug use, anger responses, and behaviors that violate social and/or legal norms. The final interview sections address coping skills and support, thus ending the interview on a positive, proactive note, which segues into the post-interview summary and planning for the content of the standard parent/guardian call and a “connection” with the school-based case manager.

Measurement—Questionnaire and interview data were combined to generate composite scores. This measurement theory has been confirmed using traditional psychometric tests and confirmatory factor analysis (Eggert et al., 1994; Thompson, & Eggert, 1999), demonstrating its construct and predictive validity in reflecting adolescent suicide potential according to a risk and protective factor framework. Dimensions of each risk and protective factor of the combined questionnaire and interview are summarized in Table 1, which also includes reliability coefficients for this sample. Questionnaire and interview response scales ranged from 0–6 unless otherwise noted. All scales were provided in written format and contained anchoring words appropriate to the questions (e.g., 0 = *never*, 2 = *sometimes*, 4 = *usually*, and 6 = *always*). Other scales were similar, with 0 indicating a low endorsement (e.g., *not at all, strongly disagree*), and 6 indicating a high endorsement (e.g., *a great deal, strongly agree*). For risk factors, higher scores on scales indicated higher risk; lower scores on protective factors indicated higher risk.

Procedures

Data for the present study were collected as part of a larger study examining measurement of suicide risk (Eggert, 1994). Institutional Review Board approval was obtained for all study procedures and instruments prior to approaching potential subjects. In cooperation with participating schools, students meeting study criteria for risk of school dropout were individually invited by research staff members to participate in a questionnaire and possibly participate in a follow-up interview. Questionnaire and interview content were explained, as were confidentiality and limits to confidentiality. Youth were informed that a parent/guardian and specially trained school-based case manager would be contacted after all interviews, and that this contact was to discuss their strengths, as well as any concerns about their safety. The acceptance rate for the larger study was 80%. The majority of refusals were because students were not interested or did not have time to participate. Parent/guardian contact information was obtained from interested students, and assent/consent materials were given to the student to take home. Next, a research staff member contacted the parent/guardian to explain the study. If a parent/guardian gave verbal consent, and the student returned the assent/consent form signed by the student and a parent/guardian, the student completed the HSQ. Students took the HSQ in small groups, using confidential code numbers.

The HSQ was screened at the research office the same day. Participants described in this study were all asked to complete in the in-depth MAPS interview. Interviews with those at risk for suicide were conducted as soon as possible after questionnaire screening; those who did not screen in as being at risk were interviewed within thirty days. Master's prepared research staff members with experience working with high-risk teens conducted the interviews after completing comprehensive standardized training.

Analysis

Preliminary analyses included examination of the data for completeness, accuracy, and outliers. Less than 1% of the data were missing, and listwise deletion was used for individual analyses if data were missing. Legal problems, school problems, and suicide ideation/attempts were dichotomized to examine presence or absence of the behavior. Next, t-tests were used to test for differences between genders, and between youth who were and were not at suicide risk.

The MAPS interview provides comprehensive assessment of suicide risk and protective factors, and the specific issue of focus in this study was examination of the ability of variables within each related risk factor and protective factor dimension to predict an adolescent's risk for suicide. The "suicide risk status" variable created for this analysis was comprised of the mean of 16 items related to direct suicide risk factors (e.g., frequency and intensity of suicide thoughts, suicide plans, communication about suicide intent, lethality of suicide attempts over time, changes in levels of hopelessness and emotional pain since most recent suicide attempt). Scale scores ranged from 0–3.06 (on a scale of 0–6), with a mean of .28 (SD = .48). Cronbach's alpha for this sample was .84. Because prior suicide attempts were used as a predictor of suicide risk in the model, this was not included in calculation of the suicide risk status variable. Post-hoc power for all analyses was .99 or greater.

A total of six linear regression models were used to examine the relative importance of components within each related risk factor and protective factor dimension in predicting suicide risk. No attempt was made to make comparisons between risk and protective factor dimensions, and the order in which dimensions were examined was arbitrary. Each regression model controlled for the demographic variables of age, sex, ethnic background, and family finances (compared to peers' family finances). In addition, because prior suicide attempts is a consistent predictor of suicide risk that is well-documented across studies (Beautrais, 2003; Brent et al., 1993b; Renaud et al., 1999), it was entered into each regression model prior to subsequent

entry of variables in each related risk factor and protective factor dimension. Thus, in each model, demographic variables were entered in the first step of each model, and prior suicide attempts (lifetime) was entered in the second step of each model. In the third step of each model, the variables of interest within the particular dimension were entered simultaneously. For example, when the emotional distress variables were examined, demographic variables were all entered at once in Step 1; prior suicide attempts were entered in Step 2; and the indicators of emotional distress (depression, anxiety, hopelessness, and anger) were entered simultaneously in Step 3. Dimensions and variables comprising each dimension are detailed in Table 1.

Results

Problem Behaviors

In terms of a general description of the presence of problem behaviors of interest in this study, 40% of participants ($n = 325$) endorsed being in trouble with the police within the past year, and 69% ($n = 556$) endorsed having one or more close friends in trouble with the law. Twenty-seven percent ($n = 216$) reported that they shoplifted, stole, or damaged property in the last month, while 43% ($n = 346$) reported engaging in at least one of these behaviors in the last year. Thirty-six percent ($n = 293$) listed problems in school as one of their top three stressors, and 28% ($n = 229$) had been disciplined at school in the last year for fighting. When asked about suicide-risk behaviors, 42% ($n = 335$) reported having thought of suicide in the past year, while 15% ($n = 122$) thought of suicide in the past two weeks, and 5% ($n = 42$) had thought of suicide in the past 24 hours. Eighteen percent ($n = 148$) reported having ever made a suicide attempt.

When comparisons were made by gender, males were more likely to report being in trouble with the police in the past year [$t(784\text{ df}) = 3.72, p < .001$], having one or more friends in trouble with the law [$t(732\text{ df}) = 3.54, p < .001$], and having shoplifted, stolen or damaged property in the past month [$t(798\text{ df}) = 3.82, p < .001$] and in the past year [$t(781\text{ df}) = 3.09, p < .01$]. They were also significantly more likely to report being disciplined at school for fighting [$t(795\text{ df}) = 4.09, p < .001$]. Females were significantly more likely to report having had suicide thoughts in the past 24 hours [$t(591\text{ df}) = 3.04, p < .01$], the past 2 weeks [$t(692\text{ df}) = 3.19, p < .001$], and the past year [$t(758\text{ df}) = 5.14, p < .001$]. They were also more likely to report having made a lifetime suicide attempt [$t(640\text{ df}) = 5.72, p < .001$].

Those who were and were not at risk for suicide were also compared. Youth at risk for suicide were significantly more likely to report being in trouble with the police [$t(767\text{ df}) = 2.89, p < .01$], having shoplifted, stolen or damaged property in the past month [$t(741\text{ df}) = 3.66, p < .001$] and the past year [$t(770\text{ df}) = 4.32, p < .001$], and being disciplined at school for fighting [$t(758\text{ df}) = 2.21, p < .05$]. There were no significant differences between the groups on reporting having one or more friends in trouble with the law. As expected given the screening criteria, youth at risk for suicide were also more likely to report thoughts of suicide in the past 24 hours [$t(451\text{ df}) = 5.37, p < .001$], the past 2 weeks [$t(460\text{ df}) = 10.51, p < .001$] and the past year [$t(730\text{ df}) = 15.34, p < .001$], as well as a prior suicide attempt [$t(560\text{ df}) = 8.95, p < .001$].

Prior Suicide Attempts

The prior suicide attempts variable was entered alone into the second step of each regression model examining the relative contributions of variables in each risk and protective factor domain. Prior suicide attempts was a significant predictor of suicide risk in each model, with standardized Beta coefficients ranging from .45 to .56. See Table 2 through Table 7 for specifics.

Related Risk Factors

Table 2 through Table 5 display the standardized coefficients and t values for each variable of interest in the related risk factor dimensions. Model fit statistics are also included. In the emotional distress dimension (Table 2), anxiety and hopelessness were significant predictors, with hopelessness the strongest predictor of suicide risk status among the emotional distress variables. Asian/Pacific Islander ethnicity was the only significant predictor among the demographic variable. All three of the variables in the stress dimension (Table 3)—number of stressors, effect of stress, and family distress—were significant predictors of suicide risk status, with effect of stressors the strongest predictor. Asian/Pacific Islander ethnicity was again the only significant predictor among the demographic variables. Both risky behavior variables were significant predictors (Table 4), with high-risk behaviors a stronger predictor than violence/ victimization. Significant predictors among the demographic variables included being female, family finances, and Asian/Pacific Islander ethnicity. Among the drug involvement variables (Table 5), the only significant predictor was adverse drug use consequences. Significant demographic predictors were being female, family finances, and Asian/Pacific Islander ethnicity.

Protective Factors

Protective factor dimensions examined were personal resources and social resources. Table 6 and Table 7 contain the standardized coefficients and t values for each variable of interest in the protective factor dimensions, along with the model fit statistics. Among the personal resources, personal control, self-esteem, and positive coping were significant predictors, with personal control the strongest predictor. Significant predictors among the demographic variables were age and Asian/Pacific Islander ethnicity. Among the social resources, sense of support, family support satisfaction, and availability of support were significant predictors. The strongest predictor of suicide risk status was sense of support. It is important to note that availability of support was a positive predictor of suicide risk status, which was not the expected direction. Significant demographic predictors were being female and Asian/Pacific Islander ethnicity.

Discussion

Results of this study support the claim that high school students who are experiencing problems in school are at risk for suicidal behavior and for legal problems. A substantial number of participants reported suicidal behavior and legal problems. Males were significantly more likely than females to report experiencing all legal problems examined (trouble with the law; having friends who get into trouble with the law; shoplifting, stealing, or damaging property; being disciplined at school for fighting). Females were more likely than males to report suicide ideation and suicide attempts. As expected given the screening criteria, youth at risk for suicide were significantly more likely than those not at risk for suicide to report experiencing suicide ideation and attempts. Youth at risk for suicide were also significantly more likely to report experiencing all legal problems except having friends who get into trouble with the law.

Results also provide insight into the influence of related risk factors and protective factors on current suicide risk status. Each dimension provided at least one predictor of risk status and all but one predictor (availability of support) were in the expected direction. That is, risk factors were associated with increased risk, and protective factors with decreased risk. Findings from this study provide relevant information for law enforcement personnel who work with adolescents, whether in the capacity of preventing problem behavior, managing problem behavior, or working with youth who have been detained in correctional facilities.

A history of prior suicide attempts is key, and the fact that prior attempts provided an explanation for a substantial portion of suicide risk status across all models tested is consistent with findings from studies of community-based youth, clinical samples, and youth who have died by suicide (Beautrais, 2003; Brent et al., 1993b; Renaud et al., 1999). This reinforces the importance of law enforcement personnel asking a young person about his/her history of suicide attempts and communicating this information to others who are working with the adolescent, and/or acting upon information if prior suicidal behavior is uncovered.

Exploring related risk factors and protective factors also provides important information about a young person's risk for suicide. Examination in this study of the relative influence of variables within the related risk factor and protective factor dimensions highlights several areas that might not always be at the forefront of interaction or assessment with high-risk youth but which are shown here to impact suicide risk status.

Related risk factor dimensions examined in this study were: (1) emotional distress, (2) stress, (3) risky behaviors, and (4) drug involvement. Aspects of emotional distress examined were depression, anger, anxiety, and hopelessness. Young people who have trouble with the law often appear angry or depressed. However, among the participants in the current sample, hopelessness and anxiety were significant predictors of suicide risk, while depression and anger were not. Hopelessness is generally less easily observed than anger or depression, which are often evident even to casual observers of behavior due to the visible affective components of these emotions. More detailed observation and questioning are likely necessary in order to accurately assess a young person's level of hopelessness. Such information might also be less forthcoming from an adolescent, particularly if s/he does not have a trusting relationship with the adult authority figure. Attention to a young person's anxiety is also important, given the association uncovered here with suicide risk.

Information provided by study participants about the stress dimension indicated that family distress, as well as the number of stressors a young person experienced, influenced suicide risk. The effect of stressors was the strongest predictor of suicide risk among the factors in the stress dimension. Thus, asking not only the number and type stressors in a young person's life, but perhaps more importantly how much s/he is bothered by the stressors, is indicated. Often, what an adult perceives as stressful might not be what a young person perceives as stressful, or an adult might over- or under-estimate the effect of the stressor.

Findings from the risky behavior analyses highlight the importance of assessing suicide risk in young people who engage in high-risk behaviors and/or who are victims or witnesses of violence. While engagement in high-risk behaviors might be related to a desire to experience a "rush" or have fun, some young people might have passive suicide ideation or a lack of concern about whether they are harmed or die. This information is particularly important for law enforcement personnel, who are often involved in management of dangerous behavior. As law enforcement personnel well know, an individual might try to escalate a situation in order to necessitate the officers' use of force (e.g., Steadman, Deane, Borum, & Morrissey, 2000). While officers might not have a choice about use of force once a situation escalates, knowledge of a young person's level of distress might allow for earlier or different interventions to prevent dangerous escalating behaviors. Those who have been victimized or witnessed violence might also come in contact with law enforcement personnel, and this provides an opportunity to assess for suicide risk among these potentially vulnerable young people.

The drug involvement findings suggest that it is not so much the quantity of alcohol, marijuana, or other illicit drug use that contributes to suicide risk but rather the consequences related to use. While it is clear from numerous studies that alcohol and other drug use are associated with suicide (Brent et al., 1988; Shafii, Seltz-Lenarsky, Derrick, Beckner, & Whittinghill, 1988), in

this non-clinical sample, getting into trouble related to use was more powerful in determining a young person's risk for suicide. In fact, it was the only significant predictor of suicide risk in the drug involvement dimension. While the amount of a substance consumed or in one's possession is often an issue in determining legal consequences and/or treatment follow-up, the fact that the young person got into trouble in and of itself might put the individual at increased risk for suicide.

It is also important to note that Asian/Pacific Islander ethnicity was a significant predictor in all models, highlighting the importance of assessment with young people from this ethnic group. Being female significantly influenced risky behavior and drug involvement, suggesting that girls displaying these behaviors might be at additional risk. Level of family finances was a negative predictor in the risky behavior and drug involvement models, indicating that having more secure family finances might be associated with less risky behavior and drug involvement. Age was not a significant predictor in any of the related risk factor models.

Protective factor dimensions examined in this study were: (1) personal resources, and (2) social resources. In the personal resources dimension, personal control was a key predictor of suicide risk status, and self-esteem and positive coping were also significant negative predictors. While consequences for illegal or inappropriate behavior are often necessary, helping a troubled young person maintain some control where possible might reduce risk for suicide. In addition, when a young person feels out of control due to legal problems, law enforcement personnel involved with the young person are in a position to monitor for increased suicide risk.

In terms of social resources, having a sense of support was the strongest negative predictor of suicide risk status, and family support satisfaction was also a significant predictor. In the present study, support was measured along a number of dimensions. Sense of support was defined as having someone to turn to and feeling that others care, in addition to close and comfortable family ties. Availability of support was defined as the access to important support people. The fact that this was a positive predictor of suicide risk was likely due to the close relationships among the dimensions of support, and thus reduced ability to distinguish independent contributions of each dimension. However, this finding requires further examination in future studies. Information about support is important because family members can be a source of help and support that might reduce the risk for suicide.

As was the case with the related risk factor dimensions, Asian/Pacific Islander ethnicity was a significant predictor in each of the protective factor dimensions. Because it was a positive predictor, this implies that Asian/Pacific Islander ethnicity is associated with greater personal and social resources. Being female was associated with higher levels of social resources, and being older was associated with higher levels of personal resources.

The Role of Law Enforcement Personnel

If a young person is detained, information obtained by law enforcement personnel about suicide risk status is vital. This will inform decisions made by officers in the field as well as by personnel in holding facilities and detention centers. Often, youth have little or no previous file data and other informants are not necessarily available (Thompson & Putniņš, 2003). Because of short stays and high turnover rates at short-term facilities, facility staff members often do not have the opportunity to get acquainted with those admitted to the facility (Sanislow, Grilo, Fehon, Axelrod, & McGlashan, 2003). Risk for suicide might not be discovered unless youth are directly questioned about this, so reports and observations by law enforcement personnel are paramount. This will likely involve additional time and training but is worthwhile considering long-term consequences of not detecting suicide risk behavior.

Once a youth is adjudicated, many secure facilities lack sufficient mental health staff and treatment facilities (Kessler, 2002). Thus, law enforcement personnel can play a vital role in recognizing suicide risk in adolescents. This observation is consistent with recommendations from the Bureau of Justice Assistance (Austin et al., 2000) regarding juveniles housed in adult facilities. The Bureau of Justice Assistance has issued specific recommendations including the policy recommendation that trained staff members screen minors for mental health problems, that there should be policies regarding the supervision and treatment of suicidal and at-risk inmates, and that mental health services must be available for detainees.

Communication and documentation of risk status among those responsible for the youth's detainment and/or sentencing is important. This has implications for policies and procedures involving law enforcement personnel. All law enforcement personnel require basic knowledge of warning signs for suicide risk, and the findings of this study argue for targeted training in assessment of related risk factors (i.e., hopelessness, anxiety, stress, risky behavior, violence/victimization, drug involvement) and protective factors (i.e., self-esteem, personal control, coping, support) relevant to adolescents. Intake procedures at jails, detention centers, and other facilities that involve adolescents in crisis should include assessment of suicide risk, and of related risk and protective factors. Because young people are subject to rapid emotional changes and often engage in all-or-none thinking, repeated assessment is advised during scheduled regular assessments, whenever there is a change in status (e.g., sentencing, changing facilities), and whenever signs of risk are displayed.

In addition to regular screening, educating all law enforcement personnel who might come into contact with young people, as well as civilians who work at facilities housing young people, about the warning signs for suicide is another critical step in preventing youth suicide. Key steps that any individual can take to prevent youth suicide are: (1) show you care, (2) ask the question "are you thinking about suicide?" and, (3) get help (Washington State Department of Health, 2005). This requires knowledge of links to help resources. It is also critical that a young person who might be at risk for suicide not be left alone, so law enforcement personnel should stay with the young person until help arrives.

Conclusion

The purpose of this study was to examine the influence of select risk and protective factors on suicide risk status and to discuss implications for law enforcement personnel. This study provides additional evidence that young people who are experiencing difficulty in school are at risk for or have already had contact with the legal system, and that a substantial number have thoughts of suicide and/or have made prior suicide attempts. While the information presented increases knowledge about teens at risk for school dropout, legal problems, and suicide, some limitations exist. First, the data are cross-sectional and thus causal relationships cannot be inferred. In addition, findings cannot be generalized beyond teens at risk for school dropout. Also, study participants were not actual detainees. However, this study provides comprehensive data about young people at risk for dropout and thus at higher-than-average risk for legal problems and contact with law enforcement personnel. Replicating the study with a longitudinal design and with other populations of teens are suggested next steps in the investigative process.

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Table 1

Description of Related Risk Factor and Protective Factor Scales, Number of Items, and Cronbach's Alpha

Related risk factors	Descriptors of content measured in the scale	# of items	α
Emotional Distress			
Depression	Depressed affect, vegetative, cognitive impairment	16	.90
Anxiety	Frightening thoughts, uneasiness, worries, fears	13	.87
Hopelessness	Discouraged, nothing works out, no solutions	14	.89
Anger	Internalized & externalized anger	15	.86
Stress			
Number of Stressors	Personal, family, social stressors	32	N/A
Effect of stressors	How bothersome each stressor has been-2 wks	32	N/A ^a
Family distress	Parent drug use, conflicts, running away	3	.61
Risky Behaviors			
High-risk behaviors	Fights, life-threatening risks, unprotected sex	11	.78
Violence/victimization	Physically injured, witness violence, abuse	5	.71
Drug Involvement			
Alcohol use	Beer/wine, hard liquor use in past month	2	.82
Marijuana use	Marijuana use in past month	1	N/A ^b
Other illicit drug use	Other illicit drug use in past month	7	.72
Drug use control probs	Use more than intended, feel pressured to drink/use drugs, use to solve problems	4	.71
Drug use consequences	Negative consequences at home, school, with friends, and with the law due to use	8	.75
Personal Resources			
Self-esteem	Feel useful, self-respect, positive attitude toward self	4	.79
Personal control	Feel in control of life, can cope with problems	9	.86
Problem-solving coping	Face problem, imagine solving problem, types of strategies	5	.73
Positive coping	# of positive coping strategies generated divided by total strategies generated	1	N/A ^b
Social Resources			
Amount of support ^c	Amount of care/help from parents, siblings, school personnel, friends, classmates	9	N/A ^a
Sense of support	Feel integrated into peer group vs. alone, close family ties, caring from others	6	.76
Support Availability	Availability of parents, siblings, school adults, friends	10	N/A ^c
Family support satisfaction	Open communication, time together, acceptance, support	5	.89

^a variation is expected in level endorsed for each item, thus reliability calculation is not appropriate

^b single item scale, thus reliability calculation is not possible

^c Scale range -10 to +10

Table 2

Standardized Coefficients for Emotional Distress Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 774)

Variable	β	t
Demographics		
Sex-female	.02	.88
Age	.04	1.59
Family finances	-.01	-.48
Ethnicity		
African American/Black	-.00	-.12
American Indian/Alaska Native	.03	1.08
Asian/Pacific Islander	.08	3.04**
Hispanic/Latino	.03	1.30
Mixed Ethnicity	.02	.98
Other	.02	.80
Prior Suicide Attempts	.45	17.77***
Emotional Distress		
Depression	.02	.38
Anxiety	.11	2.55**
Hopelessness	.33	8.73***
Anger	.04	1.29

Note: male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

Model Fit Statistics: F (14,760) = 73.82***

R² = .576

R_a² = .568

Table 3

Standardized Coefficients for Stress Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 779)

Variable	β	t
Demographics		
Sex-female	.04	1.29
Age	.03	.98
Family finances	-.04	-1.68
Ethnicity		
African American/Black	-.02	-.78
American Indian/Alaska Native	.04	1.60
Asian/Pacific Islander	.15	5.09***
Hispanic/Latino	.05	1.72
Mixed Ethnicity	.04	1.22
Other	.04	1.28
Prior Suicide Attempts	.50	17.93***
Stress		
Number of Stressors	.13	4.24***
Effect of Stressors	.17	5.61***
Family Distress	.09	3.19***

Note: male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

Model Fit Statistics: F (13,766) = 53.57***

R² = .476

R_a² = .467

Table 4

Standardized Coefficients for Risky Behaviors Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 777)

Variable	β	t
Demographics		
Sex-female	.12	4.34 ***
Age	.04	1.61
Family finances	-.07	-2.50 *
Ethnicity		
African American/Black	-.02	-.78
American Indian/Alaska Native	.03	1.07
Asian/Pacific Islander	.15	4.99 ***
Hispanic/Latino	.05	1.70
Mixed Ethnicity	.04	1.30
Other	.03	1.18
Prior Suicide Attempts	.52	17.92 ***
Risky Behaviors		
High-risk Behaviors	.14	4.61 ***
Violence/Victimization	.10	3.14 **

Note: male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

*
p<.05

Model Fit Statistics: F (12,765) = 48.56***

R² = .432

R_a² = .423

Table 5

Standardized Coefficients for Drug Involvement Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 771)

Variable	β	t
Demographics		
Sex-female	.12	4.24 ***
Age	.05	1.92
Family finances	-.09	-3.22 ***
Ethnicity		
African American/Black	-.03	1.14
American Indian/Alaska Native	.03	.94
Asian/Pacific Islander	.12	3.95 ***
Hispanic/Latino	.03	.96
Mixed Ethnicity	.04	1.30
Other	.02	.69
Prior Suicide Attempts	.56	19.56 ***
Drug Involvement		
Alcohol Use	.03	.84
Marijuana Use	-.01	-.30
Other Illicit Drug Use	.04	1.11
Drug Use Control Problems	-.04	-1.07
Adverse Drug Use Consequences	.17	4.36 ***

Note: male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

Model Fit Statistics: F (15,756) = 37.59***

R² = .427

R_a² = .416

Table 6

Standardized Coefficients for Personal Resources Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 778)

Variable	β	t
Demographics		
Sex-female	.04	1.60
Age	.05	2.02**
Family finances	-.04	-1.58
Ethnicity		
African American/Black	.01	.35
American Indian/Alaska Native	.04	1.40
Asian/Pacific Islander	.11	3.87***
Hispanic/Latino	.05	1.88
Mixed Ethnicity	.03	1.18
Other	.01	.36
Prior Suicide Attempts	.53	19.59***
Personal Resources		
Self-esteem	-.15	-4.18***
Personal Control	-.19	-4.78***
Problem-solving Coping	.06	1.70
Positive Coping Strategies	-.09	-3.18

Note: Male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

Model Fit Statistics: F (14,764) = 54.13***

R² = .498

R_a² = .489

Table 7

Standardized Coefficients for Social Resources Dimension Variables Predicting Suicide Risk Status Controlling for Demographic Variables and Prior Suicide Attempts (N = 761)

Variable	β	t
Demographics		
Sex-female	.07	2.46 *
Age	.05	1.86
Family finances	-.03	-1.21
Ethnicity		
African American/Black	-.02	-.54
American Indian/Alaska Native	.05	1.75
Asian/Pacific Islander	.12	4.26 ***
Hispanic/Latino	.05	1.65
Mixed Ethnicity	.03	1.05
Other	.03	1.14
Prior Suicide Attempts	.51	18.76 ***
Social Resources		
Amount of Support	-.05	-1.69
Sense of Support	-.28	-9.02 **
Availability of Support	.07	2.20 *
Family Support Satisfaction	-.07	-2.40 *

Note: male is the reference category for sex and White/Caucasian is the reference category for ethnicity

p<.001

**
p<.01

*
p<0.05

Model Fit Statistics: F (14,747) = 53.80***

$R^2 = .502$

$R_a^2 = .493$