

PRACTICE REVIEW

Suicide Risk Assessment in Clinical Practice: Pragmatic Guidelines for Imperfect Assessments

James Christopher Fowler
Baylor College of Medicine

This practice review focuses on the challenges of conducting sensitive and accurate assessments of the relative risk for suicide attempts and completed suicides. Suicide and suicide attempts are a frequently encountered clinical crisis, and the assessment, management, and treatment of suicidal patients is one of the most stressful tasks for clinicians. An array of risk factors, warning signs, and protective factors associated with suicide risk are reviewed; however, we are not yet in possession of evidence-based diagnostic tests that can accurately predict suicide risk on an individual level without also creating an inordinate number of false-positive predictions. Given the current limitations of assessment strategies, clinicians are advised to keep in mind that patients contemplating suicide are under enormous psychological distress, requiring sensitive and thoughtful engagement during the assessment process. An overarching goal of these assessments should be conducted within the therapeutic frame, in which efforts are made to enhance the therapeutic alliance by negotiating a collaborative approach to assessing risk and understanding why thoughts of suicide are so compelling. Within this treatment heuristic, the Suicide Assessment Five-step Evaluation and Triage (SAFE-T) is recommended as a pragmatic multidimensional assessment protocol incorporating the best known risk and protective factors.

Keywords: suicide assessment, risk factors, alliance

Psychotherapists have much to worry about: Turf battles over medication prescription privileges, third party reimbursement, and the ongoing quest for mental health parity. Closer to the consulting room, we worry about patient's psychological well-being, improvement, and safety—of greatest concern is their short and long-term risk for suicidal behavior and death. Clinicians have reason for concern: As death rates decline for many medical conditions, suicide rates have risen approximately 60% over the last 45 years, with yearly estimates of 1 million suicides worldwide (World Health Organization, 2005). In the United States more than 32,000 suicides occurred annually—Suicide is the second leading cause of death among 25 to 34 year olds, and the third leading cause of death for people between the ages of 15 and 24 (Centers for Disease Control, 2007). Suicide attempts are 10 to 40 times greater than completed suicides, with US estimates nearing 650,000 per year (Goldsmith, Pellmar, Kleinman, & Bunney, 2002).

Suicide and suicide attempts are a frequently encountered clinical crisis, and the assessment, management, and treatment of suicidal patients is one of the most stressful tasks for clinicians (Jobes, 1995). According to survey data, 28% of psychologists and 62% of psychiatrists reported experienced the loss of a patient to suicide, most frequently in outpatient settings (Chemtob, Bauer, Hamada, Pelowski, & Muraoka, 1989). The stress and anxiety

associated with treating suicidal patients can, at times, lead clinicians to lose sight of the primary objective of psychotherapy (namely the relief of suffering through greater self-understanding and improvement in social functioning). Powerful emotional reactions to a suicidal patient can fuel a pattern of defensive behavioral management that runs the risk of eclipsing the patients suffering, leading to subtle and overt power struggles. In some cases, a pattern of chronic crisis management can emerge in which the clinician adopts a role of a constant savior (Hendin, 1991). Although it is first and foremost necessary to protect the life of the patient, clinicians must guard against the treatment devolving into chronic crisis management in which the mutually agreed upon purpose of the treatment is inadvertently jettisoned. Therefore, the overarching goal of any assessment of suicide risk should be conducted within a therapeutic frame in which collaboration and negotiation of role responsibilities are clearly articulated (Plakun, 1994). At the same time clinicians must work to enhance the therapeutic alliance by negotiating a collaborative approach to understanding why thoughts of suicide are so compelling (Jobes, Louma, Jacoby & Mann, 1998; Jobes, 2011).

The scope, breadth, and volume of suicide research precludes an exhaustive review of the literature, and any attempt to do so here would certainly do injustice to the field of suicidology, and subvert the purpose of this article—those interested in a deeper examination may find the reference list and a list of hyperlinks (Table 1) useful. This practice review will focus on three elements: (1) Challenges facing clinicians assessing risk for adult patients, (2) An overview of the best predictors of suicide risk, and (3) Pragmatic recommendations for ongoing risk assessment that places a

Correspondence concerning this article should be addressed to J. Christopher Fowler, PhD, Menninger Department of Psychiatry and Behavioral Sciences Baylor College of Medicine, 2801 Gessner Drive, Houston, TX 77080. E-mail: cfowler@menninger.edu

Table 1

Selected Resources for Suicide Assessment and Suicide Facts

| | |
|--|---|
| American Association of Suicidology | http://www.suicidology.org/web/guest/home |
| American Psychiatric Association Practice Guidelines for the Assessment and Treatment of Patients with Suicidal Behaviors | http://www.psychiatryonline.com/pracGuide/PracticePDFs/SuicidalBehavior_Inactivated_04-16-09.pdf |
| American Foundation for Suicide Prevention (AFSP) | http://www.afsp.org/ |
| International Association for Suicide Prevention: IASP Guidelines for suicide prevention | www.med.uio.no/iasp/english/guidelines.html |
| National Suicide Prevention Resource Center | http://www.edc.org/projects/national_suicide_prevention_resource_center |
| Risk Management Foundation Harvard Medical Institutions | http://www.rmhf.harvard.edu/files/documents/suicideAs.pdf |
| Substance Abuse and Mental Health Services Administration (SAMHSA) Suicide Assessment Five-Step Evaluation and Triage (SAFE-T) | http://store.samhsa.gov/product/SMA09-4432 |
| Suicide Awareness Voices of Education | http://www.save.org |
| Suicide Prevention International | http://www.suicidepreventioninternational.org/ |
| Suicide Prevention Resource Center | http://www.sprc.org/ |
| WHO Suicide Prevention | http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/ |

premium on maintaining a collaborative therapeutic frame, attending to the therapeutic alliance as well as alliance ruptures, and maintaining an active curiosity regarding the triggers for the suicidal crisis.

Challenges to Suicide Assessment

Effectively assessing suicide risk is dependent on the availability of sensitive and specific measures of long-term risk factors, short-term warning signs, and an appreciation for the complexity and variability of suicide risk over time. Unlike many diagnostic procedures assessing relatively stable phenomena, we do not yet possess a single test, or panel of tests that accurately identifies the emergence of a suicide crisis. Among the many reasons is that suicide risk is fluid, highly state-dependent, and variable over time (Rudd, 2006). It should not be a terrible shock, then, to realize that most of our research efforts to diagnose risk for suicide and suicide attempts fall short. Historically, research demonstrates statistical associations among various risk factors aggregated across large groups of individuals; however, translating elevated risk to the single individual falters because specific predictors are found among many individuals who are not suicidal (resulting in high false-positive prediction).

Thus, despite decades of research, accurate prediction of suicide and suicide attempts remains elusive. The American Psychiatric Association (APA) Guidelines on Suicidal Behavior (APA, 2003) concluded that predicting suicide appears impossible in large part due to the rarity of suicide, even among high-risk individuals such as psychiatric inpatients. Beyond statistical challenges posed by low base rates, longitudinal prediction using relatively distal variables such as psychiatric diagnoses, demographics, and self-reported psychological states consistently yield high false-positive prediction rates, limiting their predictive value (Goldsmith et al., 2002; Rudd et al., 2006; Oquendo, Halberstam, & Mann, 2003). Complicating the assessment strategy is the fact that most studies assess single risk factors, leaving clinicians and expert panels to estimate how risk factors interact to influence outcomes.

While prediction appears unlikely at this stage, clinicians are nonetheless responsible for assessing suicide risk, and for providing treatment to decrease risk (APA, 2003). Modifiable risk factors include the short-term safety of patients, and treating psychiatric

symptoms/disorders using evidence-based treatments. Among the hundreds of interventions for suicidality, the following treatments appear particularly effective in randomized clinical control trials: lithium prophylaxis for mood disorders (Baldessarini et al., 2006), clozapine for psychotic disorders (Glick et al., 2004; Meltzer et al., 2003), psychosocial treatments for suicidal patients with borderline personality disorder (Bateman & Fonagy, 2008; Clarkin, Levy, Lenzenweger, & Kernberg, 2007; Doering et al., 2010; Levy et al., 2006; Linehan et al., 2006), and outreach via communicating caring and concern remotely (Motto & Bostrom, 2001; Fleishmann, Bertolote, Wasserman et al., 2008) or in-home psychodynamic consultations (Guthrie et al., 2001).

The aforementioned psychosocial interventions demonstrate the efficacy of developing and maintaining a caring interpersonal contact (even if by letter or phone) in reducing suicide risk. As will be discussed in a later section, the quality of social relationships can either serve as a protective or risk factor, and it stands to reason that the quality of a collaborative therapeutic relationship, the clinician's ongoing care and interest in the patient, and efforts to repair ruptures in the alliance may exert a powerful influence on the patient's degree of hope for the future, and the degree to which suicidal related behaviors decrease. Recent open trials of a suicide prevention strategy based on collaboration, therapeutic alliance, and enhancing social contacts reduced rates of suicidality (Ellis, Green, Allen, Jobes, & Nadorff, in press; Jobes, Wong, Conrad, Drozd, & Neal-Walden, 2005; Jobes, Kahn-Greene, Greene, & Goeke-Morey, 2009). It is therefore recommended that clinicians work to enhance the therapeutic alliance, consider recent ruptures that may contribute to suicidal ideation, and work to develop a collaborative approach to understanding the underlying causes for suicidal ideation (Jobes, 2011). With this practice heuristic in mind, the brief review of suicide research will touch on the evidence for those risk and protective factors with the strongest evidence base, then turn to a pragmatic and clinically sensitive approach to discussing suicide risk with patients.

Static Risk Factors for Suicide and Suicide Attempts

Suicide research began, and for the most part continues to focus on single, static risk factors such as demographic factors, psychiatric diagnoses, past high-risk behaviors, and more recently, ge-

Table 2
Selected Static Risk Factors Associated With Individual Risk for Suicide and Suicide Attempts

| Variable | Relative predictive strength | False-positive risk |
|--|---|---------------------|
| Past suicide attempts | Strongest consistent predictor for both suicide attempts and completed suicide across many studies | Moderate-high |
| Co-morbid psychiatric diagnoses | Risk increases with greater co-morbidity, especially for substance, mood and personality disorders | High |
| Single diagnoses | Eating disorders, and substance abuse disorders carry the highest risk, mood, and personality disorders carry moderately high risk, anxiety disorders carry lower risk | High |
| Severity of mental illness | Limited studies suggest severity of impairment may be a risk factor beyond the specific diagnosis | High |
| Algorithms of multiple domains | Diagnoses, symptoms, demographic and past history of hospitalization result in moderate true positive prediction but high false positive | High |
| Psychological vulnerabilities | Impulsivity/aggression, depressive symptoms, anxiety, hopelessness, and self-consciousness/social disengagement increase risk, yet some studies are inconclusive | High |
| Genetic markers | 5-HTT serotonin gene most studied with moderate association: other candidate genes vary by study | Unknown |
| Demographic (gender, age, race, economic status) | Males complete more suicides, females attempt more, nonmarried marital status, elderly, adolescent and young adult age groups, and Caucasian race are all associated with increase risk | Extremely high |

netic markers. Researchers contribute an impressive list of factors demonstrating the presence of specific signs or markers that increase the odds of suicide and suicide attempt—Table 2 includes a sample of static risk factors associated with increase risk. A good example of the epidemiological research is the cross-national survey of 84,850 adults assessing sociodemographic and psychiatric risk factors for suicidal behaviors. Results indicated that being younger than 25 years of age, female, less educated, unmarried, and having a mental disorder (mood disorders in high income countries, and impulse disorders in middle and low income countries) each imparted a degree of risk for suicide-related behaviors, with risk increasing with greater psychiatric comorbidity (Nock, Borges, Bromet et al., 2008). From epidemiologic and social policy perspectives, this information may be useful in developing targeted programs for intervention and prevention; yet, distal data alone are marginally helpful to clinicians—the odds of any of these factors predicting suicide-related behaviors is relatively low, with excessively high false-positive rates for each risk factor.

Retrospective and psychological autopsy studies indicate that a diagnosable mental illness is present in at least 90% of all completed suicides (Isometsa et al., 1995; Rich, Young, & Fowler, 1986; Conwell et al., 1996). Clinicians and researchers have long presumed that some psychiatric disorders convey greater risk for suicide than others. Harris and Barraclough (1998) found increased suicide risk for all psychiatric disorders except mental retardation. Suicide mortality rates were highest for individuals diagnosed with substance abuse and eating disorders, moderately high rates for mood and personality disorders, and relatively low rates for anxiety disorders (Harris & Barraclough, 1998). The difficulty with such evidence is the fact that the majority of individuals suffering from psychiatric disorders never make a suicide attempt. Furthermore, over 70% of individuals with a psychiatric disorder have co-occurring disorders (Kessler et al., 2003), making prediction based on single diagnoses somewhat spurious.

Efforts to assess comorbidity and severity of psychiatric disorders demonstrate some promising trends. Recent evidence from a 10-year prospective study of suicidal ideation, suicide plans and attempts revealed that the total number of co-occurring psychiatric

disorders was consistently more predictive of subsequent suicide-related behaviors than types of disorders (Borges, Angst, Nock, Ruscio, & Kessler, 2008). A 3-year prospective study revealed that individuals with comorbid substance abuse disorders and BPD were more likely to make future suicide attempts (Yen et al., 2003). Soloff and Fabio (2008) found that comorbid major depression and BPD, in combination with poor social adjustment was predictive of suicide attempts at 12-month follow-up. Severity of personality pathology (defined as meeting criteria for two or more personality disorders) was correlated with recurrent suicide attempts, but this effect held true only for younger females with severe personality disorders (Blasco-Fontecilla et al., 2009).

Efforts to predict suicide using finer grain psychiatric variables such as previous hospitalization, depression, hopelessness, bipolar disorder, psychotic spectrum disorders, impulsivity, and plans or thoughts of dying fail to provide sensitive and specific metrics to function as diagnostic tests (even when combined in risk factor algorithms). For example, the 5-year prospective study predicting suicide risk among 4800 psychiatric inpatients found the following: During the follow-up period the best algorithm correctly identify 35 of 63 future suicides; yet, 1206 false positive predictions resulted in a positive prediction value of less than 3%, thus diminishing the prospect of utilizing the algorithm for diagnostic purposes (Pokorny, 1983). Focusing on 743 subjects identified as a high-risk cohort, the results were only slightly improved: the algorithm correctly identify 21 out of 28 future suicides; yet, 164 false positive predictions resulted in a positive prediction value of approximately 11 percent.

Assessment of psychological vulnerabilities (an even finer grained analysis) seemed a logical approach, yet a review of empirical literature yielded mixed results for the most consistently studied psychological constructs of impulsivity/aggression, depression, anxiety, hopelessness, and self-consciousness/social disengagement (Conner, Duberstien, Conwell, Seidnitz & Caine, 2001). While impulsivity/aggression has a substantial genetic loading, and shows strong family affinity in those whose family members have made suicide attempts, there are a number of factors that

affect that association, thus reduce the predictive validity of this single risk factor (Turecki, 2005).

Currently, the strongest risk factor for predicting suicide and suicide-related behavior is the history of suicide attempts. While some distinctive clinical and psychological features differentiate those who attempt suicide from those who die from suicide; most experts agree that a history of suicide attempt(s) is the greatest risk factor for future attempts, and death by suicide (Brown, Comtois, & Linehan, 2002; Cavanagh, Owens, & Johnstone, 1999; Joiner et al., 2005). Medically serious suicide attempts are strongly associated with the increased risk of mortality and repeated suicide attempts: a 5-year follow-up study found that individuals who made a single suicide attempt were 48 times more likely to die by suicide than the average person (Beautrais, 2004). In a recent Finnish epidemiological study of 18,199 cases of suicide attempt, the risk of repeated attempted suicide within 5 years was 30% and the risk of death by suicide was 10% (Haukka, Suominen, Partonen, & Lonnqvist, 2008). Suicide attempts confer considerable future risk, but the risk is far from absolute—calculating false-positive predictions from Haukka's data (2008), we find 12,739 false positive predictions for future suicide attempts, and 16,379 false-positive predictions for completed suicide when using past suicide attempt as the sole predictor.

The promise of genetic markers for predicting suicide and suicide attempt (including the extensively studied serotonin transporter gene 5-HTTLPR) has yet to be fully realized (Arango, Huang, Underwood, & Mann, 2003). This may be due to gene-environment interactions influenced by the cascade of early adverse events on neurological development, and adult response to stressful life events (Currier & Mann, 2008). The lesson to date is that no single static risk factor provides an adequate diagnostic tool for assessing future risk given the unmanageable number of false-positive predictions.

Proximal Warning Signs

The American Association of Suicidology formed a work group to address problems associated with detecting suicide risk, recog-

nizing that static, distal risk factors fail to provide adequate diagnostic clarity. A research agenda was proposed to focus on near-term indicators of imminent suicide risk (Rudd, Berman, Joiner et al., 2006). Whereas risk factors are generally static, warning signs such as thoughts of suicide, preparatory acts, stressful life events, and cognitive/affective states are episodic, and therefore may be more predictive of an imminent suicidal crisis. Table 3 includes a selection of proximal warning signs associated with increased risk.

Self-report measures and interview strategies for assessing warning signs of suicidal ideation, intent, and availability of means have generally failed to produce the anticipated diagnostic clarity and appear better suited for screening out suicide risk (for extensive reviews of self-report and interview approaches, see Brown, 2002, and Nock, Wedig, Janis, & Deliberto, 2008). Despite the apparent ubiquity of suicidal ideation before suicide attempts, the relationship is complicated—most individuals contemplating suicide do so for extended periods without following through on the thoughts. A closer examination of the 10-year prospective study cited earlier (Borges, Angst, Nock, Ruscio, & Kessler, 2008) highlights the limited predictive utility of suicidal ideation: Using data from two National Comorbidity Surveys, 5001 subjects were interviewed regarding suicidal ideation, suicidal plans, gestures, and serious attempts. Suicide ideation was predictive of future suicidal ideation, but was negatively related to risk of future suicide attempt in the absence of a past plan or attempt. Furthermore, past suicide plans predicted the likelihood of future suicidal ideation and suicide plans, but not future attempts—only a history of prior suicide attempt was significantly and positively related to future suicide attempt (Borges, Angst, Nock, Ruscio, & Kessler, 2008). The results of a second study are chilling: a prospective study of 76 psychiatric inpatients found that 78% of individuals who completed suicide had denied suicidal ideation or intent during their last human contact before their death (Busch, Fawcett, & Jacobs, 2003).

Increasingly, researchers are questioning the reliance on self-report from suicidal individuals who may be motivated to dissimulate, are unable to accurately assess their emotional states, or are

Table 3
Selected Warning Signs Associated With Individual Risk for Suicide and Suicide Attempts

| Variable | Relative predictive strength | False-positive risk |
|--|--|---------------------|
| Suicidal ideation/plan | Suicidal ideation is assumed to be present in the majority of suicide attempts and completed suicides; however, suicide attempters frequently deny suicidal ideation prior to attempt, and many individuals have suicidal thoughts without making attempts | High |
| Stressful life events | Stressful life events involving interpersonal loss, humiliation, betrayal, and/or involve legal issues are associated with increase risk, but this effect tends to be true for those with genetic and psychological vulnerabilities | Moderate-high |
| Implicit measures assessing suicide-related outcomes | Implicit cognitive and affective measures, as well as interview approaches focusing on intense affect states are predictive of later suicide related behaviors with relatively low false positive prediction. Limited studies and small samples | Low-moderate |
| Gene X stressful life events | Promising results linking 5HTTLPR-SS and number of stressful life events to later onset of depression and suicide attempt. More studies needed | Unknown |
| Posthospitalization transition | Suicide rates spike immediately following discharge from psychiatric hospitalization, and remain high during the first week and first month following discharge. Patients who make unilateral decisions to discharge are at greater risk | Moderate-high |

poor prognosticators of future risk (Hendin, Maltsberger & Szanto, 2007; Nock & Banaji, 2007). Several research teams investigating short-term risk circumvent problems associated with self-report bias by developing computer-based measures that assess implicit psychological processes (Cha, Najmi, Park, Finn, & Nock, 2010; Nock & Banaji, 2007), use interview strategies focusing on current affective states while intentionally avoiding reference to suicide (Hendin et al., 2007; Hendin, Al Jurdi, Houck, Haas, & Turner, 2010), or extract dimensions of cognition and affective functioning using the Rorschach Inkblot Method (Affra, 1982; Exner & Wiley, 1977; Fowler, Piers, Hilsenroth, Holdwick, & Padawer, 2001; Fowler, Hilsenroth & Piers, 2001; Fowler et al., under review; Silberg & Armstrong, 1992). These indirect measures show considerable predictive validity with uncharacteristically low levels of false-positive prediction. Of considerable importance is the fact that two implicit measures (Cha et al., 2010; Fowler et al., in press) demonstrated incremental validity over and above a history of past suicide attempt.

Stressful life events, particularly those involving loss or threat to the stability of interpersonal relationships are associated with suicide risk (Heikkinen et al., 1997; Paykel, Prusoff, & Myers, 1975). More recently, researchers from the Collaborative Longitudinal Personality Disorders Study examined the link between personality disorders and specific negative life events in the month preceding a suicide attempt—those who made attempts were more likely to have experienced a negative stressful life event related to love and marriage problems, or legal troubles such as incarceration (Yen et al., 2005). This held true even after controlling for baseline diagnoses of BPD, major depressive disorders, substance use disorders, and history of childhood sexual abuse.

Psychiatric hospitalization may function as a stressful life event, despite the intended purpose of decreasing suicide risk. Numerous studies demonstrate that risk of future suicide is greater shortly after admission and discharge (Appleby et al., 1999; Goldacre, Seagroatt, & Hawton, 1993; Rossau & Mortensen, 1997). While hospitalization is likely a proxy for sustained suicide crisis, one study sheds light on the risks involved in admissions that are too brief—using Danish national registries, Qin and Nordentoft (2005) examined the temporal relationships among hospitalization and suicide risk, discovering that suicide risk spikes immediately after admission and 1-week postdischarge, and the risk of suicide is greatest for individuals with hospital stays less than the national median (estimated at 17 days). A second study (Hunt et al., 2009) found that the first day, first week, and first month postdischarge were the highest risk periods, and were strongly associated with patient-initiated discharge and failure to follow-up with postdischarge care, but not duration of hospitalization. This suggests that patients discharging from hospital against the recommendations of the attending physician, and without adequate planning or follow-up care may be motivated to flee the protective constraints of a hospital unit.

Diathesis-Stress Models of Risk

There is growing consensus among researchers that suicide risk is best conceptualized as a complex diathesis-stress phenomenon. Most theories posit an underlying genetic vulnerability that is triggered by early adverse events, resulting in impaired development and function of neurobiological systems regulating behavior,

affect, and cognitive function. Impairments in stress response systems may then be overwhelmed (during adolescence and adulthood) in response to episodic negative life events, increasing the likelihood of triggering a suicidal crisis. Thus, underlying genetic and psychological vulnerabilities are assumed to be triggered by environmental stressors, increasing likelihood of negative outcomes including suicidal behavior (Currier & Mann, 2008; Mann, Waternaux, Haas, & Malone, 1999; Turecki, 2005; Rudd, 2006). Studies generally support diathesis-stress models for predicting suicide risk—interactions between early adverse events and current impulsivity (Brodsky et al., 2001) loneliness and recent stressful life events (Chang, Sanna, Hirsch, & Jeglic, 2010), and level of psychopathology and recent stressful life events in alcoholics (Conner, Beautrais & Conwell, 2003) confer increase risk of suicide-related behaviors. Diathesis-stress models appear to impart added risk for suicide above and beyond assessment of these factors in isolation. The one exception is individuals who have made multiple suicide attempts in which stressful life events did not correlate with intensity of suicide crisis (Joiner & Rudd, 2000). Multiple suicide attempts may lead to habituation by reducing normal barriers such as pain, fear of death, and negative social consequences (Joiner, 2005).

An intriguing gene-environment study demonstrated a link between the serotonin transporter functional promoter polymorphism (5-HTTLPR), recent stressful life events, and suicide-related behavior (Caspi et al., 2003). In this study, a combination of four or more stressful life events was associated with increased suicidal ideation and attempts for individuals with two copies of the short form of the 5-HTTLPR gene, but had minimal effect on those with two long forms of the gene.

Protective Factors

Pathological risk factors dominate suicide research, and yet protective factors that impart a degree of resilience against suicidal behaviors are crucial because the interplay of risk and protective factors may ultimately determine the outcome for individuals (Goldsmith et al., 2002). It is curious why protective factors were not more salient in earlier studies because clinicians routinely work to enhance modifiable protective factors when treating suicidal patients. With the rise of the positive psychology movement and greater emphasis on resilience as a viable psychological construct, protective factors are increasingly included in studies, but the measurement and mechanisms of specific protective factors remain unclear. Some leading protective factors are discussed in the following section (Table 4).

The ability to maintain a cognitive set regarding reasons for living appears to function as a protective factor (Malone et al., 2000; Linehan, Goodstein, Nielsen, & Chiles, 1983). For example, in a cross-sectional study, depressed patients who had not previously attempted suicide were found to have expressed more feelings of responsibility toward their children and families, feared social disapproval, had more moral objections to suicide, greater survival and coping skills, as well as greater fear of suicide than a matched cohort of depressed patients who had previously attempted suicide (Malone et al., 2000). In a 2-year prospective study, reasons for living were a protective factor against future suicide attempts among depressed female inpatients, but not for

Table 4
Selected Protective Factors Associated With Individual Risk for Suicide and Suicide Attempts

| Variable | Relative predictive strength |
|-------------------------------|---|
| Religious affiliation/beliefs | Strength of religious conviction, social supports, and spiritual practices serving as coping strategies all serve as protective factors |
| Reasons for living | Incorporates aspects of social and religious/moral protective factors into a single scale. Demonstrates protective factor in cross sectional studies of adult and adolescents, but was only protective for females in a prospective study of depressed inpatients |
| Marriage | Protective factor except in the presence of a high-conflict or violent relationship when marriage becomes a risk factor |
| Children in the home | Protective factor except in the cases of post-partum mood or psychotic disorders, teen pregnancy, and extreme economic hardships. Children in the home increase risk of suicidal ideation, suggesting heightened emotional strain associated with childrearing |
| Supportive social networks | Religious organizations, close familial ties, supportive school and neighborhood environments have been linked to decreased risk of suicide attempts |
| Therapeutic contacts | Randomized clinical trials of psychosocial treatments of Borderline Personality disorder reduce suicide attempts and hospitalizations. The Collaborative Assessment and Management of Suicidality intervention reduces suicidality in open trials |
| Psychotropic medications | Randomized clinical trials of lithium prophylaxis for mood disorders and clozapine for psychotic disorders reduce suicide attempts |
| Brief supportive contacts | Randomized clinical trials demonstrate reduced occurrence of suicide attempts using outreach via communicating caring and concern remotely or in-home psychodynamic consultations |

their male counterparts (Lizardi et al., 2007). Healthy and well-developed coping skills may provide a buffer against stressful life events, decreasing the likelihood of suicidal behavior (Josepho & Plutchik, 1994).

Among protective factors, moral objections and strength of religious convictions appear protective. In general, individuals are less likely to act on suicidal thoughts when they hold strong religious convictions and a belief that suicide is morally incompatible with belief (APA, 2003; Maris, 1981; Neeleman, Wessley & Lewis, 1998). Religious and spiritual beliefs and techniques may decrease suicide risk by providing coping strategies and a sense of hope and purpose (APA, 2003). Involvement in religious organizations may also increase resiliency by enhancing more stable supportive social networks (Pescosolido & Georgianna, 1989).

Marriage imparts a degree of protection against suicide (Kposowa, 2000; Kreitman, 1988; Smith, Mercy, & Conn, 1988), yet the presence of a high-conflict or violent marriage can function as a risk factor (APA, 2003). Pregnancy is also a time of significantly reduced suicide risk for healthy women (Harris & Barraclough, 1998); however, risk is significantly greater for pregnant teenagers, pregnant women of lower socioeconomic status, and women who are psychiatrically hospitalized postpartum (Appleby, Mortensen, & Faragher, 1998; Yonkers et al., 2001). For women, the presence of children in the home may provide an additional protective effect (Marzuk et al., 1997; Qin & Mortensen, 2003; Nock, Borges, Bromet et al., 2008). Curiously, while having children in the home is a protective factor against suicide and suicide attempts, it increases the likelihood of suicidal ideation, suggestive of marked stress involved in child rearing (Nock, Borges, Bromet et al., 2008).

With national focus of bullying and adolescent suicide, considerable research interest is now trained on the social environment and social supports (or lack thereof) for teens. In a reanalysis of a national survey of adolescents, Winfree and Jiang (2010) found that feeling safe at school was one of the most consistent protective factors against suicidal ideation and suicide attempts. Strong fam-

ily attachment when coupled with a cohesive neighborhood network also reduces the risk of adolescent suicide attempts (Maimon, Browning, & Brooks-Gunn, 2010).

One of the prime, modifiable protective factors is the experience of positive supportive relationships between patient and clinician (APA, 2003). Clinicians of all theoretical persuasions work to establish and enhance a positive therapeutic relationship, and many focus significant attention on improving the quality of communication in marital and family relationships through individual, couples, and family therapy. A number of randomized clinical trials demonstrate the efficacy of interventions providing a caring and concerned social support through letters, phone contacts, or brief interviews in reducing suicide-related behaviors (Motto & Bostrom, 2001; Fleischmann et al., 2008; Guthrie et al., 2001). The collaborative assessment and management of suicidality intervention (CAMS; Jobes et al., 1998; Jobes, 2011) is a suicide-specific manualized treatment to help patients and clinicians to establish and maintain a therapeutic alliance while the pair works to understand the meanings and functions of suicidal ideation. Open trials of CAMS demonstrate decreased suicidality among outpatients (Jobes et al., 2005) and psychiatric inpatients (Ellis et al., 2011). Thus numerous studies identify therapeutic, family, and social relationships as protective, but the quality and stability of relationship and social structures appear to determine the valence as a protective or risk factor.

Pragmatic Approaches to Risk Assessment

When initiating treatment with high-risk patients, it is best to negotiate a collaborative treatment approach to suicidal thoughts and behaviors that includes, (1) a clear plan for de-escalating a suicidal crisis, (2) negotiation of the mutual and individual responsibilities of clinician and patient in establishing and maintaining the patient's safety, and (3) agreement to explore the precipitants and meaning of the crisis once it has past (Jobes, 2011). The CAMS approach is one systematic method to help patients and

clinicians address these issues and to establish and maintain a therapeutic alliance while working to understand the meanings and functions of suicidal ideation. The centrality of collaboration and negotiation within the context of the therapeutic alliance helps clinician and patient avoid power struggles, rescue fantasies, pathological dependency, and false compliance. If suicidality emerges in course of treatment, CAMS or other treatment heuristics can be implemented, but the immediate issue of assessment and intervention remains.

Given the fact that the accuracy of suicide risk assessment is less than perfect, what is a clinician to do when faced with assessing suicidal patients? Knowing that patients frequently deny suicidal thoughts before suicide attempt and death, clinicians should remain appropriately circumspect regarding declarations of safety when a patient recently expressed suicidal ideation, feelings of hopeless, desperation, and/or affective flooding. This does not mean we should adopt a suspicious or adversarial stance—on the contrary, curiosity, concern, and calm acceptance of the patient's emotional and cognitive states may serve to enhance the therapeutic alliance, encourage the patient to directly explore her or his current distress, and aid in the accurate evaluation of current functioning. In this way, a positive and cooperative therapeutic relationship can serve as ballast against suicidal urges (APA, 2003). At the same time, the clinician must be mindful of personal reactions that can lead to nontherapeutic (re)actions such as conveying an adversarial or hostile tone, taking on a savior role, blurring professional boundaries, and avoidance or overcompensation for negative feelings that emerge (Hendin, 1991; Maltsberger & Buie, 1980).

Before conducting a formal suicide assessment, clinicians should conduct an introspective review of recent stressful life events facing the patient, including recent ruptures in the therapeutic alliance, and disturbances in social relationships (Truscott, Evans, & Knish, 1999). Maintaining a therapeutic stance of curiosity and concern (while simultaneously remaining open to the possibility that an alliance rupture may be a precipitant to the crisis) is difficult to sustain when anxieties are running high; however, communicating genuine curiosity and concern about the causes for their unbearable suffering is critical.

Although risk factors and measures rarely provide consistent evidence of efficient diagnostic tests, experts generally agree that a multidimensional assessment incorporating the best known risk and protective factors is the most reasonable course of action (APA, 2003; Brown, 2002; Goldsmith et al., 2002; Nock, Wedig, Janis et al., 2008; Rudd et al., 2006; Oquendo et al., 2003). While several systems exist, few provide guidelines for summarizing findings, provide heuristics for benchmarking risk, and fewer suggest interventions when heightened risk is the outcome. A notable exception is the Substance Abuse and Mental Health Services Administration sponsored Suicide Assessment Five-step Evaluation and Triage (SAFE-T; go to: <http://store.samhsa.gov/product/SMA09-4432> to download or order a free pocket guide). Derived from data and recommendations from the American Psychiatric Association Practice Guidelines (2003), the SAFE-T is a comprehensive, practical, and efficient assessment strategy that partially overcomes the limitations of single risk factors by including recent stressful life events and current patterns of ideation and motivation for suicide, while providing the necessary counterweight of protective factors that may mitigate the likelihood of suicidal behavior in some individuals. Clinicians working with

high-risk individuals are guided through the following steps: (1) identifying relevant risk factors (noting those that are modifiable and therefore targeted for treatment), (2) identifying protective factors, (3) conducting a suicide inquiry including current suicidal thoughts, plans, behavior, and intent, (4) determining level of risk and select interventions to reduce risk, and (5) documenting the assessment of risk, the rationale for the chosen interventions, and follow-up after assessment and interventions.

Assessments are conducted at first contact and whenever the clinician anticipates that risk may be elevated. Clinicians assess static risk factors such as history of abuse, history of suicide attempts, diagnostic risk factors, family history of suicide attempts, as well as presenting symptoms of anhedonia, impulsivity, hopelessness, insomnia, and command hallucinations. Warning signs are incorporated into the assessment including potentially triggering events of loss, humiliation, current family chaos, and spikes in alcohol abuse and intoxication. Protective factors such as internal coping resources, religious beliefs, and external reasons for living (responsibility for children, positive therapeutic relationships, and social supports) provide ballast for risk factors, but are considered minimally influential when strong risk factors and triggering events are present. Following a thorough evaluation of risk and protective factors, clinicians should conduct a sensitive inquiry into current suicidal ideation, plan, behaviors (such as rehearsals and preparation), taking pains to express concern and attending to the alliance in order to communicate caring and maximize the likelihood of accurate reports. Determining relative risk must rely on the clinician's judgment in weighing the combination of risk and protective factors, assessing the patient's social supports, the state of the therapeutic alliance, and the patient's sense of desperation.

Once the assessment is complete, clinicians can benchmark the results against the SAFE-T guidelines for relative risk (high, moderate, low). Determining interventions (including medication consult, providing additional psychosocial supports, developing a crisis plan, providing emergency phone number/crisis hotline numbers, and hospitalization) should be negotiated, if possible, with the patient as a partner in the decision making process. The risk level and rationale for the treatment plan to address and reduce current risk and any plans for follow-up assessments should be clearly and concisely documented. Resources for documentation of risk are available at: <http://www.rmhf.harvard.edu/files/documents/suicideAs.pdf>.

When clinicians face a potential suicide crisis, they are multitasking and are usually in a state of heightened alert and anxiety. Under such stressful circumstances, it is easy to get swept up in personal emotional reactions and lose sight of the patient's suffering and their efforts to communicate distress. Conducting the SAFE-T or other multidimensional assessments requires not only thorough evaluative skills, it requires the clinician's skill in communicating caring and concern, active curiosity about the precipitants, and the role of enhancing the alliance, or repairing alliance ruptures in de-escalating crises.

Conclusions

Diagnostic tests for accurately predicting individual level risk remain elusive; yet, several research developments hold considerable promise, such as combining measures from multiple domains and using implicit measures of affect and cognition that circum-

vent some of the limitations of self-report approaches. Researchers and clinicians will continue to search for markers that may hold the key for developing a truly sensitive and accurate diagnostic test or panel that can alert clinicians to ongoing vulnerability and imminent heightened risk.

Throughout this review emphasis has been placed on exceedingly high false-positive rates as a limiting step to individual patient suicide risk assessment, and many suicide experts imply that false positive predictions are the unfortunate cost of such assessments. While patient safety is the prime objective, there are unanticipated consequences to suspending another person's basic civil rights when hospitalizing patients (especially when based on inaccurate data from suicide assessments). Unnecessary hospitalization can lead to a sense of betrayal, alliance ruptures, unilateral termination of treatment, and conceivably, an inadvertent stressful life event that increases future suicide risk.

Given these high stakes, clinicians are advised to negotiate how the therapeutic pair will deal with suicidal ideation, preferably well in advance of a crisis. Discussing the possible interventions in the event of a suicide crisis, and negotiating a strategy may help the patient take some authority and ownership over decisions, and may ultimately mitigate the interventions being experienced as a betrayal. When assessment and exploration of meaning are built into the treatment frame clinician and patient have a greater chance of avoiding or circumventing power struggles and are in a better position to repair alliance ruptures. Focusing on the therapeutic relationship, and using the therapeutic alliance as a platform for exploring the causes and meaning of suicidal thoughts, clinician and patient may increase the likelihood of working together to avert suicide-related outcomes.

References

- Affra, S. (1982). Predicting adolescent suicidal behavior and the order of Rorschach measurement. *Journal Personality Assessment*, *46*, 563–568.
- American Psychiatric Association. (2003). *American Psychiatric Association Practice Guideline for the assessment and treatment of suicidal behaviors*. Arlington, VA: American Psychiatric Publishing.
- Appleyby, L., Mortensen, P. B., & Faragher, E. B. (1998). Suicide and other causes of mortality after postpartum psychiatric admission. *British Journal of Psychiatry*, *173*, 209–221. doi:10.1192/bjp.173.3.209
- Appleyby, L., Shaw, J., Amos, T., McDonnell, R., Harris, C., McCann, K., . . . Parsons, R. (1999). Suicide within 12 months of contact with mental health services: National clinical survey. *British Medical Journal*, *318*, 1235–1239.
- Arango, V., Huang, Y., Underwood, M. D., & Mann, J. J. (2003). Genetics of the serotonergic system in suicidal behavior. *Journal of Psychiatric Research*, *37*, 375–386. doi:10.1016/S0022-3956(03)00048-7
- Baldessarini, R. J., Tondo, L., Davis, P., Pompili, M., Goodwin, F. K., & Hennen, J. (2006). Decreased risk of suicides and attempts during long-term lithium treatment: A meta-analytic review. *Bipolar Disorder*, *8*, 625–639. doi:10.1111/j.1399-5618.2006.00344.x
- Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. *American Journal of Psychiatry*, *165*, 631–638. doi:10.1176/appi.ajp.2007.07040636
- Beautrais, A. L. (2004). Further suicidal behavior among medically serious suicide attempters. *Suicide and Life-Threatening Behavior*, *34*, 1–11. doi:10.1521/suli.34.1.1.27772
- Blasco-Fontecilla, H. H., Baca-Garcia, E. E., Dervic, K. K., Perez-Rodriguez, M. M., Saiz-Gonzalez, M. D., Saiz-Ruiz, J. J., & de Leon, J. J. (2009). Severity of personality disorders and suicide attempt. *Acta Psychiatrica Scandinavica*, *119*(2), 149–155. doi:10.1111/j.1600-0447.2008.01284.x
- Borges, G., Angst, J., Nock, M. K., Ruscio, A., & Kessler, R. C. (2008). Risk factors for the incidence and persistence of suicide-related outcomes: A 10-year follow-up study using the National Comorbidity Surveys. *Journal of Affective Disorders*, *105*, 25–33.
- Brodsky, B. S., Oquendo, M., Ellis, S. P., Haas, G. L., Malone, K. M., & Mann, J. J. (2001). The relationship of childhood abuse to impulsivity and suicidal behavior in adults with major depression. *American Journal of Psychiatry*, *158*, 1871–1877. doi:10.1176/appi.ajp.158.11.1871
- Brown, G. K. (2002). A review of suicide assessment measures for intervention research with adults and older adults. Retrieved from <http://sbsirvntweb.uqac.ca/archivage/15290520.pdf>. Retrieved November 14, 2008.
- Brown, M. Z., Comtois, K. A., & Linehan, M. M. (2002). Reasons for suicide attempts and nonsuicidal self-injury in women with borderline personality disorder. *Journal of Abnormal Psychology*, *111*, 198–202. doi:10.1037/0021-843X.111.1.198
- Busch, K. A., Fawcett, J., & Jacobs, D. G. (2003). Clinical correlates of inpatient suicide. *Journal of Clinical Psychiatry*, *64*, 14–19. doi:10.4088/JCP.v64n0105
- Caspi, A., Sugden, K., Moffitt, T. E., Taylor, A., Craig, I. W., Harrington, H., . . . Poulton, R. (2003). Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene. *Science*, *301*, 386–389. doi:10.1126/science.1083968
- Cavanagh, J. T., Owens, D. G., & Johnstone, E. C. (1999). Suicide and undetermined death in southeast Scotland: A case-control study using the psychological autopsy method. *Psychological Medicine*, *29*, 1141–1149. doi:10.1017/S0033291799001038
- Centers for Disease Control and Prevention (CDC). Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. (2007). National Center for Injury Prevention and Control, CDC (producer). Available from www.cdc.gov/injury/wisqars/index.html
- Cha, C., Najmi, S., Park, J., Finn, C., & Nock, M. (2010). Attentional bias toward suicide-related stimuli predicts suicidal behavior. *Journal of Abnormal Psychology*, *119*, 616–622. doi:10.1037/a0019710
- Chang, E. C., Sanna, L. J., Hirsch, J. K., & Jeglic, E. L. (2010). Loneliness and negative life events as predictors of hopelessness and suicidal behaviors in Hispanics: Evidence for a diathesis-stress model. *Journal of Clinical Psychology*, *66*, 1242–1253. doi:10.1002/jclp.20721
- Chemtob, C. M., Bauer, G. B., Hamada, R. S., Pelowski, S. R., & Muraoka, M. Y. (1989). Patient suicide: Occupational hazard for psychologists and psychiatrists. *Professional Psychology: Research and Practice*, *20*, 294–300. doi:10.1037/0735-7028.20.5.294
- Clarkin, J. F., Levy, K. N., Lenzenweger, M. F., & Kernberg, O. F. (2007). Evaluating three treatments for borderline personality disorder: A multiwave study. *American Journal of Psychiatry*, *164*, 922–928. doi:10.1176/appi.ajp.164.6.922
- Conner, K. R., Beautrais, A. L., & Conwell, Y. (2003). Risk factors for suicide and medically serious suicide attempts among alcoholics: Analyses of Canterbury suicide project data. *Journal of Studies on Alcohol*, *64*, 551–554.
- Conner, K. R., Duberstein, P. R., Conwell, Y., Seidlitz, L., & Caine, E. D. (2001). Psychological vulnerability to completed suicide: A review of empirical studies. *Suicide and Life-Threatening Behavior*, *31*, 367–385. doi:10.1521/suli.31.4.367.22048
- Conwell, Y., Duberstein, P. R., Cox, C., Herrmann, J. H., Forbes, N. T., & Caine, E. D. (1996). Relationships of age and axis I diagnoses in victims of completed suicide: A psychological autopsy study. *American Journal of Psychiatry*, *153*, 1001–1008.
- Currier, D., & Mann, J. J. (2008). Stress, genes and the biology of suicidal behavior. *Psychiatric Clinics of North America*, *31*, 247–269. doi:10.1016/j.psc.2008.01.005

- Doering, S., Hörz, S., Rentrop, M., Fischer-Kern, M., Schuster, P., Benecke, C., . . . Buchheim, P. (2010). Transference-focused psychotherapy vs. treatment by community psychotherapists for borderline personality disorder: Randomised controlled trial. *British Journal of Psychiatry, 196*, 389–395. doi:10.1192/bjp.bp.109.070177
- Ellis, T. E., Green, K. L., Allen, J. G., Jobes, D. A., & Nadorff, M. (in press). *Collaborative assessment and management of suicidality in an inpatient setting: Results of a pilot study. Psychotherapy.*
- Exner, J. E., & Wiley, J. (1977). Some Rorschach data concerning suicide. *Journal of Personality Assessment, 41*, 339–348. doi:10.1207/s15327752jpa4104_1
- Fleischmann, A., Bertolote, J. M., Wasserman, D., De Leo, D., Bolhari, J., Botega, N. J., . . . Thanh, H. T. (2008). Effectiveness of brief intervention and contact for suicide attempters: A randomized controlled trial in five countries. *Bulletin of the World Health Organization, 86*, 703–709. doi:10.2471/BLT.07.046995
- Fowler, J. C., Hilsenroth, M. J., Groat, M., Biedermann, C., Biel, S., & Ackerman, S. (In Press). Risk factor for medically serious suicide attempts: Evidence for a psychodynamic formulation of suicide crisis. *Journal of the American Psychoanalytic Association.*
- Fowler, J. C., Hilsenroth, M. J., & Piers, C. (2001). An empirical study of seriously disturbed suicidal patients. *Journal of the American Psychoanalytic Association, 49*, 161–186. doi:10.1177/00030651010490010901
- Fowler, J. C., Piers, C., Hilsenroth, M. J., Holdwick, D. J., & Padawer, J. R. (2001). The Rorschach suicide constellation: Assessing various degrees of lethality. *Journal of Personality Assessment, 76*, 333–351. doi:10.1207/S15327752JPA7602_13
- Glick, I. D., Zaninelli, R., Hsu, C., Young, F. K., Weiss, L., Gunay, I., & Kumar, V. (2004). Patterns of concomitant psychotropic medication use during a 2-year study comparing clozapine and olanzapine for the prevention of suicidal behavior. *Journal of Clinical Psychiatry, 65*, 679–685. doi:10.4088/JCP.v65n0513
- Goldacre, M., Seagroatt, V., & Hawton, K. (1993). Suicide after discharge from psychiatric inpatient care. *Lancet, 342*, 283–286. doi:10.1016/0140-6736(93)91822-4
- Goldsmith, S. K., Pellmar, T. C., Kleinman, A. M., & Bunney, W. E. (2002). *Reducing suicide: A national imperative (Committee on Pathophysiology and Prevention of Adolescent and Adult Suicide, Board on Neuroscience and Behavioral Health, Institute of Medicine of the National Academies)*. Washington, DC: The National Academies Press.
- Guthrie, E., Kapur, N., Mackway-Jones, K., Chew-Graham, C., Moorey, J., Mendel, E., . . . Tomenson, B. (2001). Randomised controlled trial of brief psychological intervention after deliberate self poisoning. *British Medical Journal, 323*, 135–138. doi:10.1136/bmj.323.7305.135
- Harris, E., & Barraclough, B. (1998). Excess mortality of mental disorder: Erratum. *British Journal of Psychiatry, 173*, 11–53. doi:10.1192/bjp.173.1.11
- Haukka, J., Suominen, K., Partonen, T., & Lonnqvist, J. (2008). Determinants and outcomes of serious attempted suicide: A nationwide study in Finland, 1996–2003. *American Journal of Epidemiology, 167*, 1155–1163. doi:10.1093/aje/kwn017
- Heikkinen, M. E., Henrikson, M. M., Isometsa, E. T., Marttunen, M. J., Aro, H. M., & Lonnqvist, J. K. (1997). Recent life events and suicide in personality disorders. *Journal of Nervous and Mental Disease, 185*, 373–381. doi:10.1097/00005053-199706000-00003
- Hendin, H. (1991). Psychotherapy and suicide. *American Journal of Psychotherapy, 35*, 469–480.
- Hendin, H., Al Jurdi, R. K., Houck, P. R., Hughes, S., & Turner, B. L. (2010). Role of intense affects in predicting short-term risk for suicidal behavior: A prospective study. *Journal of Nervous and Mental Disease, 198*, 220–225. doi:10.1097/NMD.0b013e3181d13d14
- Hendin, H., Maltzberger, J. T., & Szanto, K. (2007). The role of intense affective states in signaling a suicide crisis. *Journal of Nervous and Mental Disease, 195*, 363–368.
- Hunt, I. M., Kapur, N., Webb, R., Robinson, J., Burns, J., Shaw, J., & Appleby, L. (2009). Suicide in recently discharged psychiatric patients: A case-control study. *Psychological Medicine, 39*, 443–449. doi:10.1017/S0033291708003644
- Isometsa, E., Henriksson, M., Marttunen, M., Heikkinen, M., Aro, H., Kuoppasalmi, K., & Lonnqvist, J. (1995). Mental disorders in young and middle aged men who commit suicide. *British Medical Journal, 310*, 1366–1367.
- Jobes, D. A. (1995). The challenge and the promise of clinical suicidology. *Suicide and Life-Threatening Behavior, 25*, 437–449.
- Jobes, D. A. (2011). Suicidal patients, the therapeutic alliance, and the collaborative assessment and management of suicidality. In K. Michel, D. A. Jobes, K. Michel, & D. A. Jobes (Eds.), *Building a therapeutic alliance with the suicidal patient* (pp. 205–229). Washington, DC: American Psychological Association. doi:10.1037/12303-012
- Jobes, D. A., Kahn-Greene, E., Greene, J., & Goeke-Morey, M. (2009). Clinical improvements of suicidal outpatients: Examining suicide status form responses as moderators. *Archives of Suicide Research, 13*, 147–159.
- Jobes, D. A., Luoma, J. B., Jacoby, A. M., & Mann, R. E. (1998). *Manual for the collaborative assessment and management of suicidality (CAMS)*. Washington, DC: The Catholic University of America.
- Jobes, D. A., Wong, S. A., Conrad, A., Drozd, J. F., & Neal-Walden, T. (2005). The Collaborative assessment and management of suicidality vs. treatment as usual: A retrospective study with suicidal outpatients. *Suicide and Life-Threatening Behavior, 35*, 483–497. doi:10.1521/suli.2005.35.5.483
- Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.
- Joiner, T. E., Conwell, Y., Fitzpatrick, K., Witte, T. K., Schmidt, N. B., Berlim, M. T., . . . Rudd, M. D. (2005). Four studies on how past and current suicidality relate even when “everything but the kitchen sink” is covaried. *Journal of Abnormal Psychology, 114*, 291–303. doi:10.1037/0021-843X.114.2.291
- Joiner, T. R., & Rudd, M. (2000). Intensity and duration of suicidal crisis vary as a function of previous suicide attempts and negative life events. *Journal of Consulting and Clinical Psychology, 68*, 909–916. doi:10.1037/0022-006X.68.5.909
- Josepho, S. A., Plutchik, R. (1994). Stress, coping, and suicide risk in psychiatric inpatients. *Suicide and Life-Threatening Behavior, 24*, 48–57.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . Wang, P. S.; National Comorbidity Survey Replication. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association, 289*, 3095–3105. doi:10.1001/jama.289.23.3095
- Kposowa, A. J. (2000). Marital status and suicide in the National Longitudinal Mortality Study. *Journal of Epidemiology and Community Health, 54*, 254–261. doi:10.1136/jech.54.4.254
- Kreitman, N. (1988). Suicide, age, and marital status. *Psychological Medicine, 18*, 121–128. doi:10.1017/S0033291700001951
- Levy, K. N., Clarkin, J. F., Yeomans, F. E., Scott, L. N., Wasserman, R. H., & Kernberg, O. F. (2006). The mechanisms of change in the treatment of borderline personality disorder with transference focused psychotherapy. *Journal of Clinical Psychology, 62*, 481–501. doi:10.1002/jclp.20239
- Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., . . . Reynolds, S. K. (2006). Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry, 63*, 757–766. doi:10.1001/archpsyc.63.7.757
- Linehan, M. M., Goodstein, J. L., Nielsen, S. L., & Chiles, J. A. (1983).

- Reasons for staying alive when you are thinking of killing yourself: The reasons for living inventory. *Journal of Consulting and Clinical Psychology*, *51*, 276–286. doi:10.1037/0022-006X.51.2.276
- Lizardi, D., Currier, D., Galfalvy, H., Sher, L., Burke, A., Mann, J., & Oquendo, M. (2007). Perceived reasons for living at index hospitalization and future suicide attempt. *Journal of Nervous and Mental Disease*, *195*, 451–455.
- Maimon, D., Browning, C. R., & Brooks-Gunn, J. (2010). Collective efficacy, family attachment, and urban adolescent suicide attempts. *Journal of Health and Social Behavior*, *51*, 307–324. doi:10.1177/0022146510377878
- Malone, K. M., Oquendo, M. A., Haas, G. L., Ellis, S. P., Li, S., & Mann, J. J. (2000). Protective factors against suicidal acts in major depression: Reasons for living. *American Journal of Psychiatry*, *157*, 1084–1088. doi:10.1176/appi.ajp.157.7.1084
- Maltsberger, J. T., & Buie, D. H. (1980). The devices of suicide. *International Review of Psychoanalysis*, *7*, 61–71.
- Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behavior in psychiatric patients. *American Journal of Psychiatry*, *156*, 181–189.
- Maris, R. W. (1981). *Pathways to suicide: A survey of self-destructive behaviors*. Baltimore, MD: Johns Hopkins University Press.
- Marzuk, P. M., Tardiff, K., Leon, A. C., Hirsch, C. S., Portera, L., Hartwell, N., & Iqbal, M. I. (1997). Lower risk of suicide during pregnancy. *American Journal of Psychiatry*, *154*, 122–123.
- Meltzer, H. Y., Alphas, L., Green, A. I., Altamura, A. C., Anand, R., Bertoldi, A., . . . Potkin, S.; International Suicide Prevention Trial Study Group. (2003). Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). *Archives of General Psychiatry*, *60*, 82–91. doi:10.1001/archpsyc.60.1.82
- Motto, J. A., & Bostrom, A. G. (2001). A randomized controlled trial of postcrisis suicide prevention. *Psychiatric Services*, *52*, 828–833. doi:10.1176/appi.ps.52.6.828
- Neeleman, J., Wessely, S., & Lewis, G. (1998). Suicide acceptability in African- and white Americans: The role of religion. *Journal of Nervous and Mental Disease*, *186*, 12–16. doi:10.1097/00005053-199801000-00003
- Nock, M. K., & Banaji, M. R. (2007). Prediction of suicide ideation and attempts among adolescents using a brief performance-based test. *Journal of Consulting and Clinical Psychology*, *75*, 707–715. doi:10.1037/0022-006X.75.5.707
- Nock, M. K., Borges, G., Bromet, E. J., Alonso J, Angermeyer M, Beautrais, A., . . . Williams D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *British Journal of Psychiatry*, *192*, 98–105. doi:10.1192/bjp.bp.107.040113
- Nock, M. K., Wedig, M., Janis, I., & Deliberto, T. (2008). Self-injurious thoughts and behaviors. In J. Hunsley & E. J. Mash (Eds.): *A guide to assessments that work* (pp. 158–177). New York: Oxford University Press.
- Oquendo, M. A., Halberstam, B., & Mann, J. J. (2003). Risk factors for suicidal behavior: Utility and limitations of research instruments. In M. B. First (Ed.), *Standardized evaluation in clinical practice* (Vol. 22, pp. 103–130). Washington, DC: APPI Press.
- Paykel, E. S., Prusoff, B. A., & Myers, J. K. (1975). Suicide attempts and recent life events: A controlled comparison. *Archives of General Psychiatry*, *32*, 327–333.
- Pescosolido, B. A., & Georgianna, S. (1989). Durkheim, suicide, and religion: Toward a network theory of suicide. *American Sociological Review*, *54*, 33–48. doi:10.2307/2095660
- Plakun, E. M. (1994). Principles in the psychotherapy of self-destructive borderline patients. *Journal of Psychotherapy Practice Research*, *3*, 138–148.
- Pokorny, A. D. (1983). Prediction of suicide in psychiatric patients. *Archives of General Psychiatry*, *40*, 249–257.
- Qin, P., & Mortensen, P. B. (2003). The impact of parental status on the risk of completed suicide. *Archives of General Psychiatry*, *60*, 797–802. doi:10.1001/archpsyc.60.8.797
- Qin, P., & Nordentoft, M. (2005). Suicide risk in relation to psychiatric hospitalization. *Archives of General Psychiatry*, *62*, 427–432. doi:10.1001/archpsyc.62.4.427
- Rich, C. L., Young, D., & Fowler, R. C. (1986). San Diego suicide study, I: Young vs old subjects. *Archives of General Psychiatry*, *43*, 577–582.
- Rossau, C. D., & Mortensen, P. B. (1997). Risk factors for suicide in patients with schizophrenia: Nested case-control study. *British Journal of Psychiatry*, *171*, 355–359. doi:10.1192/bjp.171.4.355
- Rudd, M. D. (2006). Fluid vulnerability theory: A cognitive approach to understanding the process of acute and chronic suicide risk. Cognition and suicide: Theory, research, and therapy. In T. E. Ellis (Ed.) *Cognition and suicide: Theory, research, and therapy*, (pp. 355–368). Washington, DC: American Psychological Association. doi:10.1037/11377-016
- Rudd, M. D., Berman, A. L., Joiner, T. E., Nock MK, Silverman MM, Mandrusiak M, . . . Witte T. (2006). Warning signs for suicide: Theory, research, and clinical applications. *Suicide and Life-Threatening Behavior*, *36*, 255–262. doi:10.1521/suli.2006.36.3.255
- Smith, J. C., Mercy, J. A., & Conn, J. M. (1988). Marital status and the risk of suicide. *American Journal of Public Health*, *78*, 78–80. doi:10.2105/AJPH.78.1.78
- Soloff, P. H., & Fabio, A. (2008). Prospective predictors of suicide attempts in borderline personality disorder at one, two, and two-to-five year follow-up. *Journal Personality Disorders*, *22*, 123–134. doi:10.1521/pedi.2008.22.2.123
- Truscott, D., Evans, J., & Knish, S. (1999). A process model for clinical decision making in high-risk outpatient situations: The therapeutic alliance and suicide. *Canadian Journal of Counselling*, *33*, 307–316.
- Turecki, G. (2005). Dissecting the suicide phenotype: The role of impulsive-aggressive behaviours. *Journal of Psychiatric Neuroscience*, *30*, 398–408.
- Winfrey, L. R., & Jiang, S. (2010). Youthful suicide and social support: Exploring the social dynamics of suicide-related behavior and attitudes within a national sample of US adolescents. *Youth Violence and Juvenile Justice*, *8*, 19–37. doi:10.1177/1541204009338252
- World Health Organization. (2005). *World Health Organization: Suicide Prevention*. Retrieved October 26, 2005, from http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/
- Yen, S., Pagano, M., Shea, M. T., Grilo, C. M., Gunderson, J. G., Skodol, A. E., . . . Zanarini, M. C. (2005). Recent life events preceding suicide attempts in a personality disorder sample: Findings from the collaborative longitudinal personality disorders study. *Journal of Consulting and Clinical Psychology*, *73*, 99–105. doi:10.1037/0022-006X.73.1.99
- Yen, S., Shea, M. T., Pagano, M., Sanislow, C. A., Grilo, C. M., McGlashan, T. H., . . . Morey, L. C. (2003). Axis I and axis II disorders as predictors of prospective suicide attempts: Findings from the collaborative longitudinal personality disorders study. *Journal of Abnormal Psychology*, *112*, 375–381. doi:10.1037/0021-843X.112.3.375
- Yonkers, K. A., Ramin, S. M., Rush, A. J., Navarrete, C. A., Carmody, T., March, D., . . . Leveno, K. J. (2001). Onset and persistence of postpartum depression in an inner-city maternal health clinic system. *American Journal of Psychiatry*, *158*, 1856–1863. doi:10.1176/appi.ajp.158.11.1856