Psychosocial Approaches to Suicide Prevention: Applications to Patients With Bipolar Disorder

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Hopelessness, dysfunctional attitudes, and poor problem-solving abilities are psychosocial risk factors that have been identified as predictors of suicide. These psychosocial risk factors may help clinicians apply specific therapies and treatments to patients with bipolar disorder at risk for suicide. A search of the literature on suicide prevention revealed 17 randomized, controlled studies, which the authors reviewed to determine the efficacy of strategies aimed at eliminating psychosocial risk factors for suicide. Three strategies emerged as efficacious: (1) applying interventions to elicit emergency care by patients at times of distress; (2) training in problem-solving strategies; and (3) combining comprehensive interventions that include problem solving with intensive rehearsal of cognitive, social, emotional-labeling, and distress-tolerance skills. On the basis of their review of the literature, the authors make recommendations for suicide prevention for patients with bipolar disorder.

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Each year in the United States, suicide is responsible for over 30,000 deaths, and approximately half a million individuals require emergency medical treatment as a result of attempted suicide.[1–3] Recent calls to action to prevent suicide, issued by the U.S. Surgeon General[3] and the World Health Organization,[4] have brought suicide to the forefront of public health attention. However, although much has been said about this growing public health problem, frustratingly little progress has been made by way of determining effective ways to prevent it.

Preventive strategies are particularly needed for patients with affective disorders, and especially for patients with bipolar disorder. Among patients seeking outpatient care, bipolar disorder appears to confer particular risk of death by suicide. In a recently published study, Brown and colleagues[5] evaluated nearly 7000 psychiatric outpatients in Pennsylvania over the course of 20 years. Patients were diagnosed according to DSM-IV criteria, and death certificates for deceased individuals were later obtained to determine the number of deaths by suicide. Approximately 1% of the sample were found to have died by completed suicide, nearly all of whom (96%) had a primary Axis I diagnosis, the most common being major depressive disorder

(69%), bipolar disorder (14%), and dysthymic disorder (12%). Nearly half (49%) had been diagnosed with an Axis II personality disorder.[5] Among the diagnostic categories, patients with bipolar disorder had the strongest risk for completed suicide, followed by major depression and personality disorders. Specifically, bipolar patients were found to have a nearly 4-fold increase in suicide risk compared with the average psychiatric patient studied, whereas major depression accounted for a 3-fold increase in risk.[5]

From the perspective of a treating clinician, the value of risk-factor research is in enhancing the clinical management of suicidal acts by helping a clinician address the question, "Who in my practice should I target for more intense monitoring of suicidality?" Risk-factor research also holds the promise of directing attention toward factors that may be important targets of treatment efforts that have the goal of protecting patients from suicidal acts. Among risk factors identified to date, diagnostic information may convey the least important information for clinicians who are routinely engaged in the care of higher-risk patients. As long as the clinician is fully engaged in treatment of the high-risk disorder—e.g., bipolar disorder, major depression, borderline personality disorder—diagnostic risk factors convey no additional information that is valuable for enhancing treatment. This is not the case for other psychosocial risk factors for suicide; these risk factors may guide clinicians to apply specific therapeutic strategies or hone treatment toward specific factors to try to reduce suicide risk. In the following sections, we provide a brief review of psychosocial risk factors other than diagnosis and an evaluation of the outcome data to date for psychosocial suicide-prevention programs. Using this review as a basis,

we then consider which interventions should be considered as part of a psychosocial program for suicide prevention among higher-risk patients, particularly in patients with bipolar disorder.

PSYCHOSOCIAL RISK FACTORS FOR SUICIDAL BEHAVIOR

Among individuals with affective disorders, a number of psychosocial factors have been identified as predictors of suicidal behaviors. Perhaps the most consistently identified factor is a high degree of hopelessness. In several studies, Beck and colleagues[6,7] have shown that hopelessness, as assessed by the Beck Hopelessness Scale,[8] is a sensitive although not specific predictor of suicide.[9] Although hopelessness is relatively common among patients with depression, higher hopelessness scores may help identify individuals at particular risk of suicide. Moreover, Cannon et al.[10] examined factors that may be particularly related to the expression of hopelessness in depressed patients. They found that in addition to overall severity of depression, hopelessness was linked to higher levels of dysfunctional attitudes as well as poor problem-solving abilities. To the extent that suicidal behavior is seen as a desperate and maladaptive attempt to escape from overwhelming emotions or problems, it follows that hopelessness would be intensified in individuals who had more self-defeating and negative expectations and beliefs about themselves and their performance and who had fewer skills for adaptively managing problems.

Supporting evidence for the role of negative cognitions, poor problem solving, and hopelessness in predicting suicidal behavior is also provided by additional studies of coping strategies. Nierenberg et al.[11] found that cynicism (defined as "a pessimistic outlook on life in general") was particularly associated with suicidal ideation among a sample of 42 depressed outpatients. Moreover, in a study of patients with posttraumatic stress disorder (PTSD), Amir and colleagues[12] found that patients' coping/problem-solving styles were meaningfully linked with suicidal risk. PTSD and non-PTSD patients were administered questionnaires designed to assess suicide risk as well as coping styles and problem-solving skills. Patients who tended to cope with problems by trying to find alternative solutions, collecting information about the problem, or minimizing the problem (i.e., looking on the bright side) had lower suicidal risk. In contrast, patients who tended to adopt avoidance strategies for problems had significantly higher suicidal risk.[12]

In addition to adaptive coping strategies, certain beliefs appear to offer protective benefits against suicide. In a search for such protective factors, Malone and colleagues[13] questioned 84 depressed inpatients with past suicidal behavior and administered the Reasons for Living Inventory.[14] As have other researchers, Malone et al.[13] found that

hopelessness was more prevalent in individuals who had attempted suicide, but that suicidal behavior was less frequent in individuals who endorsed specific beliefs, including a moral objection to suicide, fears of social disapproval, feelings of responsibility toward family (e.g., "It would hurt my family too much and I would not want them to suffer"), and stronger survival and coping beliefs (e.g., "I believe I can find other solutions to my problems" and "I have future plans I am looking forward to carrying out").

Given evidence for the role of hopelessness, poor coping/problem-solving strategies, and dysfunctional attitudes in suicidal tendencies, as well as the evidence in favor of protective factors such as reasons for living, it stands to reason that therapeutic attention to these factors may help reduce suicidal risk. Research with unipolar depressed patients indicates that both dysfunctional attitudes and dysfunctional problem-solving styles are linked to the intensity of depression and appear to be ameliorated when the depression is treated.[15–17] A number of cognitive-behavioral treatments specifically focus on the modification of dysfunctional attitudes and the enhancement of problem-solving skills,[18] and there is some evidence that these treatments may outperform pharmacotherapy at this task, despite similar effects on depression. For example, McKnight and colleagues[19] found that while both pharmacotherapy and cognitive therapy treated depression and reduced dysfunctional attitudes in depressed outpatients, reductions in dysfunctional attitudes were greater for patients who received cognitive therapy. Perhaps more importantly, similar findings have been reported for the modification of hopelessness; Rush et al.[20] found that treatment with imipramine or cognitive therapy significantly improved depression, but that cognitive therapy was associated with stronger effects on hopelessness.

Additionally, other psychosocial risk factors for suicide, such as joblessness[5] and social isolation,[21] are associated with an increased suicidal risk. Accordingly, practical strategies to increase supportive social contacts as well as problem-solving strategies for such issues may be crucial therapeutic targets. Overall, the data presented above encourage the further application of cognitive restructuring and problem-focused treatment elements in the modification of suicidal risk. As is detailed below, there is encouraging evidence for the efficacy of these strategies for the reduction of suicidal behaviors among patients at higher risk for self-harm.

CONTROLLED OUTCOME STUDIES OF SUICIDE PREVENTION

To provide a perspective on psychosocial interventions that have received the most empirical support to date, we conducted a review of existing studies of suicide prevention. We restricted our search to studies that had the primary aim of reducing suicidal or parasuicidal behaviors in

cohorts identified as at-risk for these actions. Our search of the literature identified 17 randomized, controlled studies that were published during the past 3 decades. These studies differed widely in the size of study groups and type of participants under investigation, and accordingly we relied on effect-size analyses (rather than significance tests that are dependent on the varying power of individual studies) to determine the strength of interventions.

In evaluating these effect sizes, we selected as our outcome measure only the rates of suicidal behavior reported in these studies. This allowed us to report a more or less consistent metric, although we are sensitive to the fact that alternative measures (e.g., the time to a suicidal event) may offer a more sensitive analysis of treatment effects. Also, we did not compute effect sizes for the other beneficial elements that may have been offered by treatments. For example, reductions in affective distress, improvements in relationships, or improvements in well-being may have been additional effects of the treatments under investigation, but for our review, we focused exclusively on the reduction of suicidal behavior.

In evaluating the strength of interventions relative to a comparison treatment, we used the conversion tables of percentages to the Cohen d value.[22] According to Cohen's standards, a d of 0.2 represents a small effect size; 0.5, a medium effect size; and 0.8, a large effect size.[23] Empirical reviews of the effects of pharmacotherapy relative to placebo treatment, for example, often reveal a moderate effect size for active treatment relative to placebo.[24] In the case of the treatment of suicidal behavior, studies tended to use a treatment-as-usual comparison condition. These comparison conditions represented the standard of care in the community, helping ensure that ethical issues associated with restriction of treatment to suicidal patients were minimized. Readers will note that in many cases the community standard in these studies was that for the public health service in Great Britain, where 11 of 17 studies were completed (other studies were conducted in the United States, Canada, Germany, the Netherlands, Belgium, and Ireland). In all cases, effect sizes should be evaluated relative to the type of comparison condition used.

Table 1 provides an overview of the samples, interventions, and effect sizes obtained for the 17 studies in our review. In the following sections, we provide a more detailed accounting of the methods and results of these studies.

Brief Hospitalization

Two studies examined the efficacy of brief hospitalization relative to standard outpatient treatment. In a study of 77 patients, Waterhouse and Platt[25] examined very brief hospitalization (median length = 17 hours) relative to discharge home for patients who presented to an emergency room following a parasuicidal episode. At a short follow-up interval (16 weeks), the brief hospitalization intervention was associated with a very small effect size (0.22), with an 8% parasuicide rate for the treatment group and a 10% rate for the comparison group. In contrast, no beneficial effects of brief hospitalization were evident in a large sample (N = 274) of 588 patients studied by Van Der Sande et al.[26] In that study, standard outpatient treatment was compared with a 1- to 4-day hospitalization followed by an unreported number of weekly problem-solving treatments. The hospitalization treatment was associated with a subtle negative effect size (d = –0.12), with 17% of the sample making suicidal gestures, compared with 15% of the comparison group. Hence, at this point in time, brief hospitalization of patients presenting to emergency rooms for suicidal and parasuicidal behaviors cannot be supported as a routine strategy for preventing such behaviors.

These studies, however, do not comment on the value of hospitalization for individuals assessed to be at particular risk by their clinicians. Moreover, these studies do not comment on the value of facilitating hospital entry or enhanced care for individuals who themselves select this option. This strategy—facilitated hospital entry/physician care—does show promise for reducing suicidal behaviors, based on 2 studies of individuals who have made repeated suicide attempts or gestures. These studies, both conducted in Great Britain, employed an experimental intervention involving a "green card" that allowed easy reentry into a hospital ward. Morgan and colleagues[27] studied 212 individuals who presented with a first-time episode of deliberate self-harm. Similarly, Cotgrove et al.[28] studied the effects of offering a "green card" for readmission to the pediatric ward for youths (mean age = 14.9 years) who had deliberately poisoned or injured themselves. Both of these studies found benefit for the rapid–treatment access cards, with reductions of suicidal or self-harm acts in the range of a small-to-moderate effect size (d = 0.41 for both studies).

Together, these studies provide consistent support for the efficacy of easy-access strategies for care, in particular for the single-step strategies, i.e., using a card that offers automatic readmission to the hospital when needed. Although all patients may be aware that care is available at their local clinic or emergency rooms, it appears that simple strategies to facilitate the call for help at a time of distress should be considered for more routine application. However, the value of this intervention may be most evident when applied to individuals presenting with their first episode of self-harm, as opposed to those with longer histories of suicidal behavior, who were not included in these 2 studies.

Strategies to Enhance Treatment Utilization

Five studies examined the efficacy of special outreach services to enhance care of suicidal patients. These studies examined the provision of special home services, outreach, or continuity of care interventions to try to enhance the outcome of suicide attempters. In general, these strategies

Table 1. Patient Samples, Interventions, and Effect Sizes in 17 Randomized, Controlled Studies of Prevention of Suicidal Behaviors in At-Risk Patients[a]

Source	Population	Interventions	Results Repetition Rates	Effect Size (d)
Hospitalization				
Waterhouse and Platt, 1990[25]	N = 77 (48 females, 29 males); mean age range, 26.8–33.7 y	Hospitalization for a median length of 17 h (range, 10–88 h) (N = 38) vs discharge home (N = 39)	E: 3/38 (8%), C: 4/39 (10%)	0.22
Van Der Sande et al, 1997[26]	N = 274 (180 females, 94 males); mean age = 36 y; diagnoses: mood disorder (32%), adjustment disorder (14.5%); no substance use disorders, psychiatric hospitalization, or psychosis	1- to 4-day hospitalization followed by an unreported number of weekly problem-solving treatments (N = 140) vs TAU (N = 134)	E: 24/140 (17%), C: 20/134 (15%)	–0.12
Easy access to hospital				
Morgan et al, 1993[27]	N = 212; mean age range, 27.4–32.5 y; depressive disorder most common disorder	"Green card" for immediate access to a physician when needed (N = 101) vs TAU (N = 111)	E: 5/101 (5%), C: 12/111 (11%)	0.41
Cotgrove et al, 1995[28]	N = 105 (89 females, 16 males); 6% with psychiatric disturbances; mean age = 14.9 y	"Green card" as a passport to readmission to pediatric ward (N = 47) vs TAU (N = 58)	E: 3/47 (6%), C: 7/58 (12%)	0.41
Intensive interventions				
Allard et al, 1992[29]	N = 150 (83 females, 67 males; mean age not reported; diagnoses: depression (87%), substance abuse (53%)	Intense intervention with 18 therapy visits and 1 home visit (N = 76) vs TAU (N = 74)	E: 22/63 (35%), C: 19/63 (30%)	–0.13
Adherence to treatment				
Chowdhury et al, 1973[30]	N = 155 (87 females, 68 males); mean age not reported; diagnoses: no psychiatric disorder (23%), depression (9%), depression plus personality disorder (23%); patients at high risk for suicide were excluded from analyses	Special care treatment (3 weekly outpatient clinics and home visits for patients who did not show up) (N = 71) vs TAU (N = 84)	E: 16/68 (24%), C: 20/87 (23%)	–0.03
Welu, 1977[31]	N = 120 (gender not reported); mean age = 29 y; diagnoses not reported	Special outreach program (weekly or biweekly contact and personalized psychotherapy) (N = 63) vs TAU (N = 57)	E: 3/62 (5%), C: 9/57 (16%)	0.64
Hawton et al, 1981[32]	N = 96 (67 females, 29 males; mean age = 25.3 y; no current psychiatric treatment or substance use treatment needed	Domiciliary problem-oriented treatment (N = 48) vs outpatient problem-oriented treatment (N = 48) (both treatments lasted up to 1 h/wk for up to 3 mo)	E: 5/48 (10%), C: 7/48 (15%)	0.24
Möller, 1989[33]	N = 141 (gender not reported; mean age not reported; diagnoses: mostly neurosis, personality disorders, and substance use disorders	Aftercare with individual psychotherapy (N = 68) vs community suicide prevention services (N = 73)	E: 9/68 (13%), C: 3/70 (4%)	–0.60
Van Heeringen et al, 1995[34]	N = 516 (292 females, 224 males); mean age = 34 y; no psychiatric hospitalization needed	Special care (home visits when patients did not show up for appointments) (N = 258) vs TAU (N = 258)	E: 21/196 (11%), C: 34/195 (17%)	0.28
Harrington et al, 1998[35]	N = 162 (145 females, 17 males); mean age = 14.5 y; diagnoses: depression (67%), conduct disorder (10.5%)	Routine care plus an assessment session and 4 home visits focused on familial dysfunction (N = 85) vs TAU (N = 77)	E: 11/74 (15%), C: 11/75 (15%)	0.00
Problem-solving–based interventions				
Gibbons et al, 1978[36]	N = 400 (gender not reported); mean age not reported (range, 17 y and over); diagnoses not reported	Task-centered social work treatment (N = 200) vs TAU (N = 200)	E: 27/200 (14%), C: 29/200 (15%)	0.05
Hawton et al, 1987[37]	N = 80 (53 females, 27 males); mean age = 29.3 y; no intense psychiatric intervention needed	Brief problem-solving orientation (mean = 3 sessions) (N = 41) vs general practitioner care control (N = 39)	E: 3/41 (7%), C: 6/39 (15%)	0.50
Salkovskis et al, 1990[38]	N = 20 (10 females, 10 males; mean age = 27.3 y; nonpsychotic and no immediate psychiatric intervention needed	Cognitive-behavioral problem solving (some at home, some inpatient; five 1-hour sessions) (N = 12) vs TAU (N = 8)	6-mo: E: 0/12 (0%), C: 3/8 (38%); 18-mo: E: 3/12 (25%), C: 4/8 (50%)	1.45 (6-mo follow-up) 0.67 (18-mo follow-up)
McLeavey et al, 1994[39]	N = 39 (29 females, 10 males; mean age = 24 y; IQ ≥ 80; diagnoses: dysthymia (23%), dependent personality disorder (15%), alcohol abuse (14%), none (44%)	Interpersonal problem-solving skills training (N = 19) vs brief problem-oriented treatment control (N = 20)	E: 2/19 (11%), C: 5/20 (25%)	0.58
Evans et al, 1999[40]	N = 34 (gender not reported); mean age not reported (range = 16–50 y); diagnoses: described as all having personality disorders (antisocial, histrionic, and emotionally unstable, [ie, impulsive and borderline])	Manual-assisted cognitive-behavioral therapy (N = 18) vs TAU (N = 16)	E: 10/18 (56%), C: 10/14 (71%)	0.39
Intensive treatment (dialectical behavior therapy)				
Linehan et al, 1993[41]	N = 39 (all female); mean age not reported (range, 18–45 y); borderline personality disorder	Dialectical behavior therapy (N = 19) vs TAU (N = 20)	E: 5/19 (26%), C: 12/20 (60%)	0.89

[a]"TAU" refers to a standard of care comparison condition offering some form of "treatment as usual." "E" and "C" designate the experimental intervention and control groups, respectively.

resulted in only modest reductions in suicide risk. Chowdhury and colleagues[30] and Harrington and colleagues[35] found no benefit of special outreach services for parasuicidal patients (d = –0.03). Likewise, Möller[33] found no benefit for a "continuity of care" intervention designed to enhance the likelihood of treatment compliance. Although a continuity of care strategy resulted in greater compliance, outcome was dependent on the type of treatment received; referral to a separate suicide prevention service outperformed the continuity of care intervention offering individual (primarily psychodynamic and supportive) psychotherapy in terms of prevention of suicidal behavior (d = –0.60). Further, Allard and colleagues[29] found no benefit for an 18-session therapy intervention, which included 1 home visit (d = –0.13).

The exception to this general trend was a larger effect size found for a study that combined outreach efforts with weekly psychotherapy. This study by Welu[31] reported a 3-fold rate of suicidal behaviors in a treatment-as-usual comparison condition relative to a 4-month weekly or biweekly home-based intervention combining psychotherapy, crisis intervention, and family therapy (d = 0.64). While it is clearly a daunting and challenging responsibility for health care workers to travel to the homes of suicidal individuals on a weekly basis, the impressive effectiveness of such an intervention remains noteworthy. Promising results, reflecting small-to-medium effect sizes, were found for home visits designed to motivate patients to comply with outpatient referrals by Van Heeringen and others[34] (d = 0.28) and for problem-solving interventions (see Problem-Solving Interventions) delivered at home rather than at a clinic (d = 0.24).[32]

Problem-Solving Interventions

Three studies[36–38] conducted in Great Britain provide encouraging results for brief problem-focused treatments, with some evidence that this treatment can provide reductions in suicidal behavior in the moderate-to-large effect-size range. Each of these studies used a similar comparison condition: routine care of referral to the patient's primary care physician or to a psychiatric physician.

The first study[36] utilized social workers to deliver a problem-focused treatment to a large sample of individuals who received emergency treatment for an intentional overdose ("self-poisoning"). These patients (N = 400) were randomly assigned to a brief program of problem-focused social work or to routine follow-up (referral primarily to a general or psychiatric physician). As the authors report, the sample of 400 represents "relatively lower-risk self-poisoners, living in more stable conditions with relatively less personal and social pathology,"(p116) due to the exclusion of individuals already in psychiatric care, with immediate suicidal risk, or with serious psychiatric disorders requiring immediate treatment. Among these individuals, problem-focused treatment was not sig-

nificantly more effective in preventing repeated self-poisoning than routine care (d = 0.05).

Almost a decade later, Hawton et al.[37] obtained much more promising results for a structured intervention delivered by psychiatric counselors. Again, the sample was of overdose patients (N = 80), who were identified as not needing intensive psychiatric care. Over the 9-month follow-up period, the group referred for general care had roughly twice the attempt rate (15.4% vs. 7.3%) as did patients randomly assigned to problem-focused psychotherapy (d = 0.50). The intervention reported by Hawton et al., relative to the earlier study, was based on a more comprehensive model of the care needed by suicide attempters and included examination of the meaning of the overdose, identification of current problems and goals for treatment (with assigned homework), communication training, and examination of past attempts to cope with similar issues.

The problem-solving focus of this treatment was adopted by Salkovskis et al.,[38] who combined these strategies with other formal problem-solving approaches (i.e., those described by Bancroft in 1986[42]). Similar to the previous studies, Salkovskis et al.[38] provided randomized care only to patients who had made a suicide attempt but were not judged by the evaluating psychiatrist as requiring immediate psychiatric care. However, unlike the previous studies, they specifically selected individuals who had made 2 or more previous attempts and were at higher risk for a subsequent attempt. This sample (N = 20) was randomly assigned to referral to a general practitioner or brief (5 sessions) problem-focused treatment. At the 6-month follow-up point, 0 of 12 patients in the problem-focused treatment made a suicide attempt, compared with 3 of 8 in the comparison treatment (0% vs. 38%, d = 1.45). At an 18-month follow-up assessment, 3 of 12 of patients in the problem-focused treatment made a suicide attempt, compared with 4 of 8 in the comparison treatment (25% vs. 50%, d = 0.67).

The large effect size obtained by Salkovskis et al.[38] may reflect the instability in efficacy estimates that is inherent to such small studies. However, it is noteworthy that Salkovskis et al. specifically included patients identified as at risk for further suicidal behavior. Indeed, patients in their comparison condition exhibited suicidal rates 2 to 3 times as high as similarly treated patients in the Gibbons et al.[36] and Hawton et al.[37] studies that did not select higher-risk patients. As such, the study by Salkovskis et al.[38] may not have been hampered by the floor effect that may have obscured the degree of benefit achieved in earlier samples. Salkovskis et al. also utilized similar problem-focused interventions as those studied by Hawton et al.,[37] and both of these studies demonstrated greater benefit than the social-work intervention studied by Gibbons et al.[36]

There is also initial evidence that problem-solving training around interpersonal conflicts may be especially useful for reducing the risk of suicidal behavior. Hawton et al.[37]

reported trends indicating better outcomes for problem-solving efforts aimed at relationship difficulties. Moreover, in a controlled trial, McLeavey et al.[39] compared an interpersonal problem-solving skills training (IPSST) treatment to a brief problem-oriented treatment control, which involved less focus on improving problem-solving abilities than the IPSST condition. In a randomized trial of 39 patients, advantages were evident for the IPSST intervention: 2 (11%) of 19 of patients receiving this treatment made a subsequent suicide attempt, compared with 5 (25%) of 20 patients receiving the standard problem-oriented intervention (d = 0.58).

An alternative version of a problem-solving treatment, designed specifically for patients at risk for repeated self-harm, was examined in a pilot study by Evans et al.[40] These researchers applied a brief treatment (2 to 6 sessions) of cognitive-behavioral therapy (CBT) emphasizing problem solving, cognitive restructuring, distress tolerance, and relapse-prevention strategies, accompanied by written self-help materials on these topics. The treatment is initiated with an analysis of the events leading up to the last episode of self-harm. Problem-solving and cognitive interventions are then targeted to these issues. In a randomized trial of 34 patients (with 32 providing outcome data), repetitions in self-harm were found in 10 (56%) of 18 patients receiving the CBT intervention in addition to standard treatment and 10 (71%) of 14 patients receiving treatment as usual alone (a combination of inpatient, day hospital, and community care). This advantage for CBT reflected a small-to-moderate effect size (d = 0.39) and was achieved with patients attending a mean of only 2.7 sessions (in addition to the self-help materials). This study is of particular importance because it provides a perspective on the addition of a care strategy to standard psychiatric care. That is, the comparison condition represents the higher-intensity care (follow-up in day hospitals or community clinics) likely to be offered to bipolar patients, in contrast to the referral to primary care physicians that marked earlier studies. As such, this study provides a perspective on the benefits of additive care to patients who already have access to specialty psychiatric care.

Intensive Treatments

Use of a comparison condition that represented a community standard of psychiatric care was also a hallmark of the investigation of Linehan and colleagues[41,43] of dialectical behavior therapy (DBT) for parasuicidal borderline patients. Intensive treatment (1 year's duration) with DBT was compared with community treatment. Over the year of treatment, parasuicidal acts were observed in 5 (26%) of 19 patients treated with DBT and 12 (60%) of 20 patients in the comparison condition, reflecting a large effect size (d = 0.89).

Linehan's DBT is modeled around a number of key strategies, including education pertaining to emotion vali-

dation and labeling. Borderline patients, by definition, have extreme difficulty regulating their emotions, and the root of this dysfunction lies with a lower capacity to detect, label, and adaptively respond to emotions. Additionally, Linehan's DBT relies heavily on a problem-solving focus; patients learn skills that are essential for preventing further self-harm episodes and, because of the intensive yearlong design of DBT, have ample opportunity to rehearse and practice those skills within the therapy groups. DBT patients also gain and rehearse distress tolerance and self-control skills,[43] which may include use of less drastic alternatives should a patient experience overwhelming urges for self-harm. For example, instead of cutting or burning one's skin, patients may be taught to snap a rubber band or tightly grasp an ice cube to create similar sensations of pain while minimizing tissue damage and harm.[43]

Individuals with bipolar disorder have been hypothesized to share with borderline patients these difficulties of regulating and stabilizing their emotions.[44] Moods in both populations are often dysthymic and irritable, and individuals with these disorders tend to present similar affective temperamental dysregulations.[44] Accordingly, DBT interventions may offer benefit to patients with bipolar disorder.

Summary of Empirical Review

Our review of the treatment-outcome literature for the prevention of suicidal acts supports attention to 3 separate factors: (1) facilitation of a patient's ability to elicit care using simple interventions ("green cards") that can be applied at times of distress (mean effect size [ES] = 0.41); (2) brief training in problem-solving strategies (mean ES = 0.59), with encouraging evidence for the benefit of targeting social problem-solving skills (ES = 0.58); and (3) more comprehensive interventions that combine a problem-solving emphasis with intensive rehearsal of cognitive, social, emotional-labeling, and distress-tolerance skills (ES = 0.64).

These empirical results are consistent with our initial model of suicide reduction derived from the risk-factor studies reviewed above. It appears that, aside from diagnostic factors, suicidal acts are more likely among individuals who are hopeless and cynical about the future. Both hopelessness, as operationalized by Beck et al.,[8] and cynicism, as defined by Nierenberg et al.,[11] focus attention on an individual's perceived ability to effect adaptive changes in life. Accordingly, Cannon et al.[10] found that hopelessness, in addition to being fundamentally linked to depressed mood, was itself predicted by poor problem-solving skills and dysfunctional attitudes. Further evidence for the role of problem-solving skills is provided by research on PTSD.[12] All of these studies encourage the application of problem-solving skills for relevant life problems, and, indeed, our review of outcome studies supports the value of these interventions.

It is important to note that perceived problem-solving ability is linked with severity of depression; when major depression is present, problem solving is impaired and stressors are seen as more overwhelming. It also appears that vigorous treatment of depression, regardless of modality, is one method to help return adaptive problem-solving skills and reduce dysfunctional and pessimistic attitudes (M. W. Otto, Ph.D., N. Reilley-Harrington, Ph.D., J. N. Kogan, Ph.D., et al., unpublished manual, 2000).

Of psychosocial treatments, there is a wealth of evidence for the efficacy of CBT and interpersonal therapy; CBT appears to be effective for treating acute episodes of depression and helping prevent relapse over several-year intervals.[45] There is also encouraging evidence for the application of CBT to medication-resistant depression.[15] A number of studies support the role of CBT in helping prevent relapse among bipolar patients.[46-48] Moreover, one study[48] found that brief treatment with adjunctive CBT (a mean of 16 sessions) resulted in significantly fewer episodes, lower depression, and, notably, lower hopelessness scores as compared with routine pharmacologic care alone.

Indeed, of the psychosocial treatments that have shown promise for helping reduce relapse among bipolar patients—family-focused therapy (FFT),[49] interpersonal therapy with a social rhythm component (IPSRT),[50] and CBT—all include a focus on social problem–solving interventions. This suggests that these treatments hold promise for addressing diagnostic risk factors for suicide (e.g., unipolar or bipolar depression) as well as providing the problem-solving skills that may have more direct protective effects on suicidality.

RECOMMENDATIONS FOR PATIENTS WITH BIPOLAR DISORDER

Given the available evidence, we recommend the following as standard elements of a suicide prevention program for patients with bipolar disorder: (1) vigorous treatment of the bipolar disorder; (2) overrehearsal of help options for times of distress, including the facilitation of help from support networks; (3) training in problem-solving skills; (4) cognitive restructuring for hopelessness-based cognitions; (5) enhancement of "reasons for living"; and (6) training in emotional tolerance/regulation skills. These components are discussed in turn.

The foundation of a suicide prevention program for bipolar individuals must be vigorous treatment of the bipolar disorder. As noted, a number of psychosocial strategies—CBT, FFT, and IPSRT—hold promise for offering effective treatment, although to date the primary evidence supporting their efficacy lies with their ability to reduce relapse. Specific evidence for the ability of these treatments to treat bipolar depression is currently unavailable, although the efficacy of some of these treatments (i.e., CBT and IPT) in unipolar depression encourages such applications.

Preventing suicide, however, goes well beyond treating the disorder; patients must learn what their best options are when distressing situations do arise. For instance, patients must learn where they can turn in times of distress. Research on "green cards" suggests that the value of simple procedures to elicit help at times of distress can have important effects on reducing suicide risk. Therapists and patients should overrehearse procedures for getting care at times of need, and these efforts should probably include rehearsal of actions to be taken by the patient's support network (e.g., family and friends) either when the patient asks for help or when concerning symptoms, such as hopelessness, emerge.

Next, converging evidence supports the potential efficacy of training in problem-solving skills. Even brief training in such skills appears to reduce the likelihood of self-harm. Cognitive restructuring also appears to be helpful in reducing the pessimistic and dysfunctional thoughts linked to hopelessness and poor problem solving. Recent research also provides encouraging emphasis on the potential value of protective beliefs. As part of cognitive-restructuring efforts, clinicians may want to target the specific elucidation and rehearsal of "reasons for living."

Finally, intensive treatment programs have underscored the potential importance of distress-tolerance skills. Training in the adaptive management of periods of high distress has the potential for offering additional protection at moments of crisis and may include training in less lethal strategies of self-harm for patients who feel unable to resist those urges altogether.

In the application of all these strategies, regular practice of the skills may be important, especially given that these skills are likely to be needed at times of high distress, when new or tentative skills are least accessible. Accordingly, regular review of skills with the patient, and with the support network if warranted, may offer a better level of protection. In addition, the use of written contracts for early intervention may have some value, although it is notable that, to our knowledge, these contracts have not been the target of a randomized study. Despite the absence of evidence, the use of suicide contracts—in which a patient agrees to abstain from suicidal action and inform a relative or provider of suicidal intent—appears to be relatively common. In a recent survey, 57% of a sample of 267 psychiatrists in Minnesota reported using suicide contracts, with 62% using verbal contracts and 38% employing written contracts.[51] Among the psychiatrists using contracts, approximately 27% reported having a patient who had attempted suicide after entering into a no-suicide contract. The absence of comparable data for nonusers of contracts prevents assessment of whether the contracts had a protective effect. Nonetheless, these data are a clear reminder that a no-suicide contract is not a replacement for clinical vigilance.

CLOSING REMARKS

The limited empirical evidence available for judging the efficacy of strategies for suicide prevention speaks to the difficulties inherent in doing this research. In the studies reviewed above, many of the highest-risk patients were excluded for ethical reasons. Accordingly, it is an open question whether some of these findings can be generalized to the highest-risk patients. Nonetheless, some studies (e.g., those by Linehan et al.,[41,43] Salkovskis et al.[38]) did study more severe patients and obtained promising results.

Overall, our review of the literature provided some converging evidence for the efficacy of a complementary set of strategies to help patients develop more effective problem-solving, cognitive, and emotional-regulation skills, as well as practical help strategies, to reduce suicide risk. All of these strategies have potential application to patients with bipolar disorder, either as part of a more comprehensive psychosocial treatment for the bipolar disorder or as a specific risk-reduction intervention. Further research and clinical application of these strategies is warranted. Some of these additional data will be provided by the ongoing, multisite, National Institutes of Health–funded Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD), which will be providing randomized outcomes of psychosocial treatment for up to 1000 patients with bipolar disorder. Data from this program will allow examination of the efficacy of intensive psychotherapy—CBT, FFT, or IPSRT—as added to ongoing medication management of bipolar disorder.

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