

Enhancing Suicide Risk Assessment Through Evidence-Based Psychiatry

Robert I. Simon, M.D.*

*Clinical Professor of Psychiatry

Director, Program in Psychiatry and Law

Georgetown University School of Medicine

Washington, DC

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Abstract

Suicide risk assessment is a core competency. Evidence-based psychiatry can enhance suicide risk assessment by dispelling reliance on lore, tradition and on aided clinical impression. The preferred study designs for determining risk are cohort and case-control studies. Online evidence-based psychiatric information sources are provided. Non-evidence based information regarding suicide risk and protective factors include case reports, case series and clinical opinion and consensus. Frequently occurring suicide risk and protective factors are subjected to evidence-based analysis. Ultimately, evidence-based studies must be interpreted through the psychiatrist's reasoned clinical judgment.

Suicide risk assessment is a core competency that psychiatrists are expected to acquire (1). The purpose of suicide risk assessment is to identify treatable and modifiable risk and protective factors that inform the patient's treatment and safety management. Evidence-based psychiatry can enhance suicide risk assessment by diminishing reliance on lore, tradition and unaided clinical impression. Acceptance of expert opinion solely based upon respect for authority is giving way to evidence-based medicine.

Patients at risk for suicide often confront the psychiatrist with life-threatening emergencies. Most clinicians rely on the clinical interview and certain valued questions and observations to assess suicide risk (2). The psychiatrist, unlike the general physician, does not have laboratory tests and sophisticated diagnostic instruments available to assess the suicidal patient. For example, in evaluating an emergency cardiac patient, the clinician can order a number of diagnostic tests and procedures, e.g., EKG, serial enzymes, imaging, catheterization. The psychiatrist's diagnostic instrument is systematic suicide risk assessment that is informed by evidence-based psychiatry. Risk factor severity is assessed according to intensity and magnitude and evidence-based association with suicide. For example, in a depressed patient, anxiety may be chronic and intermittent or acute and persistent. Anxiety, especially when comorbid with depression, is a high risk factor supported by evidence-based association with suicide (3).

No suicide risk assessment *method* has been empirically tested for reliability and validity (4). The standard of care encompasses a range of reasoned approaches to suicide risk assessment. Utilizing evidence-based psychiatry is best practice, an essential component of core competency. It is not, however, a standard of care requirement. The law does not require that mental health professionals provide ideal, best practice, or even good patient care. The clinician's legal duty is to provide adequate patient care.

Sackett (5) defined evidence-based medicine as: “The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.”

The method of evidence-based psychiatry is described by Gray (6). The preferred study designs for determining harm (risk) are cohort and case-control studies. On-line evidence-based psychiatric information sources include: National Electronic Library for Mental Health (comprehensive sources); Evidence-Based Mental Health (structured abstracts); Cochrane Database of Systematic Reviews (systematic reviews); PubMed (original articles).

Evidence-Based Suicide Risk and Protective Factors: Some Examples

In Table 1, examples of evidence-based suicide risk factors are arranged according to the hierarchy of supporting evidence. The hierarchy of evidences for studies of harm (risk) include: systematic reviews (meta-analysis) the highest

level of evidence, followed by cohort studies (prospective or retrospective) and case control studies (retrospective) (6). In a retrospective cohort study, a historical cohort is identified through existing records for outcomes of interest at initiation of the study. Dependence on existing records, however, raises questions of data quality (6). Nonevidence-based suicide risk factors are based upon case reports, case series, and lastly, clinical opinion and clinical consensus. Clinical opinion and consensus are important in suicide risk assessment, when buttressed by evidence-based studies. In the absence of evidence-based research, it is certainly acceptable to rely upon clinical consensus and expert opinion. The extensive suicide literature contains many well designed studies regarding suicide risk factors that go beyond the scope of this article.

Systematic Reviews (Meta-Analysis)

Psychiatric Diagnosis:

Harris and Barraclough (7), in a systematic review (meta-analysis), abstracted 249 reports from the medical literature regarding the mortality of mental disorders. They compared the numbers of suicide in individuals with mental disorders with those expected in the general population. The standardized mortality ratio (SMR) is a measure of the relative risk of suicide for a particular disorder compared with the expected rate in the general population (SMR of 1).

The SMR was calculated for each disorder by dividing observed mortality by expected mortality (see Table 2).

The highest relative risk for suicide was associated with eating disorders. The SMR for eating disorders was significantly higher than that for major affective disorders and substance abuse disorder. Virtually all psychiatric disorders, except mental retardation, are associated with an increased risk of suicide. The importance of making an accurate psychiatric diagnosis, one of the most important indicators of risk for suicide, is essential to competent suicide risk assessment (8).

Physical Illness:

Physical illness, especially in the elderly, is associated with suicide risk. Quan et al. (9), in a systematic review (meta-analysis), found that the psychiatrically ill elderly with any of the following illnesses were more likely to complete suicide than those without the illness: cancer; prostatic disorder (excluding prostatic cancer); and chronic pulmonary disease.

Harris et al. (10) identified, by statistical overview, a number of specific medical illnesses that were associated with increased suicide risk: HIV/AIDS; malignant neoplasms as a group; head and neck cancers; Huntington's chorea; multiple sclerosis; peptic ulcer; renal disease; spinal cord injury and systematic

lupus erythematosus. Recognizing specific medical conditions that are associated with increased risk of suicide aids the clinician's suicide risk assessment.

Cohort Studies

Deliberate Self-Harm:

In a prospective cohort study of 7,968 deliberate self-harm (DSH) patients, Cooper et al. (11) found an approximate 30-fold increase in risk of suicide compared with the general population during a 4-year follow-up period. Suicide rates were highest within the first 6 months after the initial self-harm. The authors underscored the importance of early intervention following self-harm. Female patients were at high risk for suicide.

Hawton et al. (12) conducted a follow-up study of 11,583 patients who presented to a hospital between 1978-1997. The authors found a significant and persistent risk of suicide. In this study, the risk was far higher in men than in women. In both genders, suicide increased markedly with age at initial presentation.

Anxiety:

Fawcett, et al. (13) identified short-term suicide risk factors derived from a 10-year prospective study of 954 patients with major affective disorders that were

statistically significant for suicide within 1 year of assessment. The risk factors included panic attacks, psychic anxiety, loss of pleasure and interest, moderate alcohol abuse, diminished concentration, global insomnia and depressive turmoil (agitation). Clinical interventions directed at treating the anxiety-related symptoms in patients with major affective disorders can rapidly diminish suicide risk (14).

Child Abuse:

Dube et al. (15) conducted a retrospective cohort study of 17,337 adult HMO members from 1995 to 1997. Compared to individuals report no sexual abuse, a history of suicide was more than twice as likely among both men and women who experienced childhood sexual abuse.

Brown et al. (16) studied a cohort of 776 randomly selected children from a mean age of 5 years to adulthood over a 17-year period. Adolescents and young adults with a history of childhood abuse were 3 times more likely to become depressed or suicidal than individuals without such a history. Childhood sexual abuse effects were the largest and most independent of associated factors. The risk of repeated suicide attempts was 8 times greater with a history of sexual abuse.

The nature and extent of childhood sexual abuse is associated with the severity of suicide risk. Fergusson et al. (17) followed a birth cohort of 1,019

males and females from birth to age 18. There was a consistent relationship between the extent of child sexual abuse and risk of a psychiatric disorder. Individuals reporting intercourse were at highest risk for psychiatric disorders and suicidal behaviors.

An essential part of the psychiatric examination and systematic risk assessment is inquiry about childhood abuse.

Case Control Studies

Violent Threats: Impulsivity and Aggression

Violent threats or behavior toward others is a suicide risk factor. Clinicians more commonly encounter patients who threaten violence against themselves. Violence, however, has a vector. It can be directed at oneself, at others or both, as in murder-suicide.

Conner et al. (18), in a case control study, found that violent behavior in the last year of life was a significant risk factor for suicide. The relationship was especially strong in individuals with no history of alcohol abuse, in younger individuals and in women. In the study, 753 suicide victims were compared with 2,115 accident victims. Violent behavior distinguished suicide victims from accident victims. The findings were not attributable to alcohol use disorders alone.

Dumais et al. (19), using a case control design, found that higher levels of impulsivity and aggression were associated with suicide. One hundred four male suicide completers who died during an episode of major depression were compared to 74 living depressed male subjects. Current (6 month prevalence) alcohol abuse/dependence, current drug abuse/dependence disorders increased the risk of suicide in individuals with major depression. Impulsive and aggressive behaviors underlied these risk factors.

Mann et al (20), in a retrospective study of 408 patients with mood, schizophrenia spectrum or personality disorders who externally directed aggression, distinguished past suicide attempters from non-attempters. The risk of future suicide attempts was also increased in the aggression group.

Melancholia:

Do melancholic features associated with Major Depressive Disorder confer a higher risk of suicide attempts than in non-melancholic major depression? Grunebaum et al. (21), in a case control study, compared suicide attempts in 377 melancholic with non-melancholic patients. Melancholia was associated with more serious past suicide attempts and the increased probability of suicide attempts during follow-up. While major depression is associated with a high risk of suicide, melancholia is a less commonly recognized feature of major depression that may further increase the risk of suicide attempts or completions.

Comorbidity:

Psychiatric patients often present with more than one psychiatric disorder. For example, a bipolar patient may be diagnosed with borderline personality disorder and substance abuse. Beautrais et al. 1996 (22) found that individuals who made serious suicide attempts had high rates of comorbid mental disorders. Three hundred and two consecutive individual who made serious suicide attempts were compared with 1,028 randomly selected subjects. The risk of suicide increased with increasing comorbidity: subjects with 2 or more disorders were at 89.7 times increased risk for suicide than those with no psychiatric disorder. Comorbidity is an independent suicide risk factor.

Employing a case control design, Hawton et al. (23) assessed 111 patients who attempted suicide (72 female and 39 male). They found that more patients with comorbid disorders had made previous attempts and repeated attempts during the follow-up period. Comorbidity of Axis I disorders and personality disorders was present in 44% of patients.

In a national population survey of 5,877 respondents between 1990 to 1992, Kessler et al. (24) discovered that a dose-response relationship existed between the number of comorbid psychiatric disorders and suicide attempts.

Protective Factors: Reasons for Living

Malone et al. (25) assessed 84 patients with a DSM-III-R diagnosis of major depression. Of the 84 patients, 45 had attempted suicide and 39 had not. The depressed patients who had not attempted suicide expressed more responsibility toward family, more fear of social disapproval, more moral objections to suicide, greater coping and survival skills and more fear of suicide than depressed patients who had attempted suicide. The authors concluded that the assessment of reasons for living should be part of the assessment of patients at risk for suicide.

The Linehan Reasons for Living Inventory (26) assesses the strength of a patient's commitment not to die. The inventory is a 48-item self-report measure that takes about 10 minutes to administer. A 72-item version is also available. Internal consistency is high. The inventory's test-retest reliability is moderately high for 3 weeks. The inventory is sensitive to improvements in depression, hopelessness and in suicidal patients with borderline personality disorder receiving treatment.

How important are religious beliefs for preventing suicide? Dervic et al. (27) assessed 371 depressed inpatients for religious affiliation. Patients without a religious affiliation had significantly more suicide attempts and more first-degree relatives who completed suicide than patients with religious affiliations. Unaffiliated patients were younger, less often married, fewer had children. They

also had less contact with family members. Patients with no religious affiliation had fewer reasons for living, especially moral objections to suicide. There was no difference in subjective and objective depression, hopelessness or stressful life events. The authors concluded that greater moral objection to suicide and lower aggression level in religiously affiliated patients may act as protective factors against suicide attempts.

Religious beliefs may not necessarily be a protective factor against suicide. In some patients, religious beliefs can be challenged by severe mental illness. For example, a bipolar patient stated hopelessly that “God has forsaken me.” A devout, severely depressed patient hurled “blasphemous” insults at God. In a twist, where religion became a facilitating risk factor, a suicidal patient stated, “God will forgive me if I kill myself.” Severe mental illness can overcome a patient’s protective factors.

Clinical Experience and Consensus

Case reports, case series and clinical consensus, though not evidence-based, can aid suicide risk assessment. For example, in systematic review of the relevant literature, Hansen (28) found that akathisia could not be definitively linked to suicidal behavior. In individual cases, however, clinical judgment may determine that akathisia adds to the patient’s total illness burden, thus potentially increasing suicide risk. Evidence-based studies must be interpreted through the

lens of the clinician's education, training, experience and reasoned clinical judgment.

Lore, tradition, myths, caprice, anxiety, defensiveness, preconceptions and other factors can lead to uncritical acceptance and perpetuation of substandard, pseudo suicide assessments. Mental health professionals must do more than merely ask patients if they are suicidal and then record, "No SI, HI or CFS (no suicidal ideation, homicidal ideation, contracts for safety). Suicide risk assessment necessitates identifying multiple risk and protective factors and ranking their relative importance. The so-called "suicide prevention contract" (SPC), also referred to as a "no-harm" contract, is a classic example of misconception. The SPC often masquerades as a protective factor but it can be an iatrogenic suicide risk factor. The SPC can falsely reassure the clinician, pre-empting adequate suicide risk assessments, and increasing the patient's risk for suicide (8). No studies demonstrate that the SPC is effective in preventing suicide attempts or completions (29). Clinician anxiety is unavoidable in the treatment of suicidal patients. It is a reality of clinical practice. Evidence-based suicide risk assessments can help increase the clinician's comfort in treating and managing suicidal patients.

Managed care settings can become a potential suicide risk factor, if clinicians permit third party payer dictated short length of stay, that result in the

premature discharge of suicidal patients. Safety contracts are often relied upon with severely mentally ill suicidal patients, who are rapidly treated and discharged, compounding suicide risk.

Beyond evidence-based general suicide risk factors, suicidal patients have individual “signature” symptoms and behaviors that are associated with suicide risk. “Signature” risk factors recur during subsequent suicide crises. A patient’s distinctive suicide risk factor patterns should receive high priority in the identification and assessment of suicide risk (30). For example, a guarded, schizophrenic patient with a severe stutter would speak clearly, when at high risk for suicide. Once his stutter returned, he was discharged from the hospital at low suicide risk. This individual specific behavior was repeated a number of times. It was considered by the clinician to be a reliable behavioral indicator of suicide risk. The assessment of behavioral risk factors is important, especially with guarded or deceptive suicidal patients (31). Employing evidence-based risk factors in suicide assessment is essential, but knowing a patient’s unique suicide risk profile is critical.

Conclusion

Suicide risk assessment is a core competency that psychiatrists are expected to possess. The purpose of suicide risk assessment is to identify treatable and modifiable risk and protective factors that inform the patient’s treatment and

safety management requirements. Unaided clinical experience can lead to impressionistic, substandard suicide risk assessments. The psychiatrist's diagnostic instrument is systematic suicide risk assessment that is informed by evidence-based psychiatry. The acquisition of core competency in suicide risk assessment and evidence-based psychiatry early in psychiatrists' training should facilitate a more standardized approach to suicide risk assessment.

Clinician anxiety is unavoidable in the treatment of suicidal patients. Evidence-based suicide risk assessments can help increase clinicians' confidence in their assessments. Ultimately, evidence-based studies must be interpreted through the psychiatrist's reasoned clinical judgment.

Table 1

Suicide Risk and Protective Factors: Examples of Evidence-Based Studies

Suicide Risk Factors

Systematic Reviews (Meta-analysis)

- Psychiatric Diagnosis (Harris et al. 1997; Kessler et al. 1999)
- Physical Illness (Quan et al. 2002; Harris et al. 1994)

Cohort Studies

- Deliberate Self-Harm (Cooper et al. 2005)
- Anxiety (Fawcett et al. 1990)
- Child Abuse (Dube et al 2005; Brown et al. 1999)

Case Control Studies

- Violent Threats: Impulsivity and Aggression (Conner et al. 2001; Dumais et al. 2005; Mann et al. 2008)
- Melancholia (Grunebaum et al. 2005)
- Comorbidity (Beautrais et al. 1997; Hawton et al. 2003)

Suicide Protective Factors

Case Control Studies

- Protective Factors (Malone et al. 2000)
- Religious Affiliation (Dervic et al. 2004)
- Reason for Living Inventory (Linehan et al. 1983)

Table 2

Mental and physical disorders and mortality

Disorder	SMR*
Eating disorders	23.14
Major depression	20.35
Sedative abuse	20.34
Mixed drug abuse	19.23
Bipolar disorder	15.05
Opioid abuse	14.00
Dysthymia	12.12
Obsessive-compulsive disorder	11.54
Panic disorder	10.00
Schizophrenia	8.45
Personality disorders	7.08
AIDS	6.58
Alcohol abuse	5.86
Epilepsy	5.11
Child and adolescent disorders	4.73
Cannabis abuse	3.85
Spinal cord injury	3.82
Neuroses	3.72
Brain injury	3.50
Huntington's chorea	2.90
Multiple sclerosis	2.36
Malignant neoplasma	1.80
Mental retardation	0.88

*Standardized mortality ratio (SMR) is calculated by dividing observed mortality by expected mortality.

Source: Adapted from Harris and Barraclough (1997).

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