Introduction

Effects of Medical Interventions on Suicidal Behavior

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Background: Knowledge of effective means of preventing suicide, based on research evidence, is strikingly limited, but there are indications that specific treatments may reduce suicidal risk in patients with major affective disorders. ***Method:*** An international symposium was held in Miami, Fla., February 26–28, 1998, to discuss current knowledge of the *Effects of Medical Interventions on Suicidal Behavior*. Participant experts prepared summary reports of their contributions. ***Results:*** Participants considered what is known about the effects of medical treatments on suicidal risk, as well as proposed approaches to future research. This supplement summarizes the proceedings of the symposium. ***Conclusion:*** The symposium strongly supported the proposition that suicide is amenable to ethical scientific investigation, suggested that evidence supporting suicide risk-reduction can be developed, and strongly encouraged studies to test the effects of specific interventions on suicidal risk. It also encouraged greater efforts at public and professional education to understand suicide as a result of mood and other psychiatric disorders, and to improve their early recognition and enhance timely access to effective treatment by the psychiatric and general medical community.

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> Resolved, That the Senate—
>
> ...recognizes suicide as a national problem and declares suicide prevention to be a national priority...encourages initiatives dedicated to...promoting safe and effective treatment for persons at risk for suicidal behavior...
>
> —Resolution S-84, U.S. Senate, May 6, 1997[1]

This resolution by the United States Senate in 1997 is a landmark in the modern evolution of public perceptions of the problem of suicide.[1] While suicide often remains clouded in secrecy and shame, and its impending risk is often poorly appreciated by professionals as well as the general public, attitudes about suicide are changing. It is increasingly perceived as a manifestation of severe emotional distress and, most often, associated with a diagnosable and treatable form of depression or other mental illness.

Nevertheless, rates of suicide continue to be high, with a worldwide annual incidence of about 10–20 per 100,000 in the general population, ranging from less than 10 to nearly 40/100,000 in different countries, and with rates of attempted suicide at least 15-fold higher.[2,3] The U.S. rate is about 11/100,000, accounting for at least 31,000 deaths annually.[3] Rates of completed suicides are at least 4-times higher in men than women, differ greatly in specific ethnic groups, and show striking regional and ethnic variation in the United States. For example, Native Americans have higher risks than African Americans,[2–5] and the American Southwest and Mountain States have much greater suicide rates than other parts of the country.[6] Among adolescents and young adults, fatalities from all forms of violence (homicides and accidents as well as suicides) are the leading causes of death.[6,7] Such high risks of violent deaths in young Americans probably reflect,

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in part, relatively easy access to firearms, drugs, and alcohol.[7]

Suicidal acts are associated with diagnosable psychiatric or substance abuse disorders in nearly all cases and can be triggered by acute stress, shame, cult behavior, or incarceration.[2–5,8,9] Risks are also increased in the elderly and chronically medically ill.[4] Nevertheless, the great majority of suicidal acts arise in association with psychiatric illnesses, most often mood disorders including major depression and bipolar manic-depression, and psychotic disorders or in association with primary or comorbid abuse of alcohol or other substances.[2–5,9,10]

Depressive and manic-depressive disorders, as recurring and sometimes chronic illnesses, are associated with high levels of physiologic stress and comorbid abuse of alcohol or drugs. These factors contribute to higher general mortality rates-for-age than in the general population, due to cardiovascular and other medical conditions affected by prolonged emotional distress and the effects of highly prevalent comorbid abuse of alcohol and other substances, in addition to mortality due to suicide.[10–12]

Suicides are reported to account for 10% to 25% of deaths in persons with severe nonbipolar major depressive disorders,[2,3,8,9] and similar rates have been reported in bipolar disorders[11–14] and in psychotic disorders.[15] Standard mortality ratios (SMRs, or rates compared with expected rates in the matched general population) due to suicide in major depression and bipolar disorders may be as high as 15 to 20.[6,9] While such alarmingly high risks are found with relatively severe mental illness, and particularly in persons who have required psychiatric hospitalization, suicide rates in more broadly representative samples with a wide spectrum of illness severity are correspondingly lower. For example, a recent estimate of suicidal risk among all cases of major depression was 3.5%.[16] Nevertheless, suicide is a sufficiently common outcome in severe mental illnesses of various kinds as to be a matter of major public health concern.

Despite the close association of mood disorders or other psychiatric illnesses with suicidal behavior, and despite the remarkable advances in medical treatment of major psychiatric disorders in the past half-century,[17] the timely recognition and treatment of such disorders continue to be far from ideal. For example, recent studies indicate that rates of diagnosis of major depressive or bipolar mood disorders are well below half, and possibly as low as one quarter of diagnosable cases.[13,18] Moreover, once diagnosed, only a fraction—perhaps one quarter or less—receive minimally adequate medical treatment.[19–22] Among completed suicides, fewer than a third were in treatment with a mental health professional, although many had recent contact with a primary care physician.[2–5,14] However, rates of appropriate antidepressant treatment were remarkably low among persons who completed suicide.[21–23] It is likely that the proportion of persons with potentially diagnosable and treatable major mood disorders may be 10- to 20-times greater than is now recognized. These considerations suggest that underdiagnosis and undertreatment probably contribute to suicidal risk. This factor accounts for an unknown proportion of suicidal acts, and even patients who are competently treated and closely followed clinically die by suicide.

The general syllogism that clinical depression is the leading condition associated with suicidal behavior, that depression is a highly treatable disorder, and that adequate treatment of depression should reduce suicide risk seems to be self-evident. Nevertheless, documentation of that conclusion, based on adequate research studies involving at-risk populations is remarkably hard to find.[2–5,12,14,21–24] There is substantial evidence that lithium contributes to limiting risk of suicidal behavior and fatalities in bipolar and perhaps other major affective disorders,[25–27] and suggestive evidence that antidepressant treatment may be having at least moderate beneficial effects on population suicide rates.[22,23] However, proof remains elusive that any medical intervention, including the recent development of safer antidepressants that are not lethal on acute overdose, has produced a measurable impact on suicide rates in the general population.[21–23,28,29] It follows that a scientific basis for sound clinical or public health policies concerning suicide prevention remains to be developed.[30]

This need for information strongly encouraged organization of an international symposium cosponsored by the American Foundation for Suicide Prevention, the Johns Hopkins University School of Medicine, and the Long Island Jewish Medical Center, with the cooperation of the Suicide Prevention Advocacy Network, and with the support of an educational grant from Solvay Pharmaceutical Corporation. This special supplement to *The Journal of Clinical Psychiatry* summarizes the results of that meeting.

This supplement includes summaries and selected discussions of presentations by symposium participants and their colleagues on (1) the neurobiology and genetics of suicide (John Mann and Alec Roy, with discussion by Raymond DePaulo), (2) mechanisms of action of drugs that may limit suicidal risk (Robert Lenox and Husseini Manji), (3) suicide risks in specific diagnostic and clinical groups (Jules Angst, Herbert Hendin, and Kay Jamison), (4) relationship of substance use disorder to suicide risk (Leonardo Tondo), (5) clinical efforts at suicide prevention (Douglas Jacobs and David Shaffer), and (6) effects of treatment interventions on suicide risk (Ross Baldessarini, Frederick Goodwin, Bruno Müller-Oerlinghausen, Agneta Nilsson, Harold Sackheim, and Richard Wyatt), as well as conclusions and recommendations emerging from discussions at the meeting.

This *Journal* supplement represents the third major report of symposia held within the past year in the United States that were aimed at improving understanding of various aspects of suicide. They include a review of the bio-

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logical aspects of suicidal behavior sponsored by the NIMH in 1997[31] and a general clinical and research overview held at Harvard University in late 1997.[32] This supplement presents a first effort at systematically evaluating the effects of medical treatments on suicidal behavior. These meetings and their reports, collectively, indicate that a great deal of interest has developed in the field of biomedical research on suicide in recent years that may, in turn, help to fulfill the hopes expressed in Senate Resolution S-84 of 1997.[1]

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