Indicators of Suicide Over 10 Years in a Specialist Mood Disorders Unit Sample

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Background: There are few firm data to guide the clinician in identifying individual depressed patients who may be at high risk for completing suicide. In particular, there have been few prospective studies of well-characterized depressed patients to determine indicators of such future events.

Method: Eight hundred thirteen patients with a major depressive episode (DSM-III, DSM-III-R, or DSM-IV criteria) were assessed in detail in a specialist Mood Disorders Unit (MDU) over a 10-year period. Follow-up at the end of that period (mean = 5.1 years) confirmed that 31 patients (3.8%) had completed suicide. The suicide completers were compared on a broad range of clinical and demographic variables obtained at baseline with (1) the total remaining depressed sample, (2) 31 age- and sex-matched subjects who were confirmed to be alive and had never attempted suicide, and (3) 24 age- and sex-matched living subjects who had made at least 1 suicide attempt.

Results: The most consistent finding, across all 3 comparisons, was that the suicide completers were more likely to have been inpatients at the time of the index MDU assessment. Other characteristics of completers were a greater number of prior admissions for depression, being older and in a relationship, and being male and married or female and single. Somewhat paradoxically, suicide completers also evidenced fewer previous suicide attempts and less suicidal ideation compared with living subjects who had attempted suicide at the time of index assessment.

Conclusion: Overall, we were able to find few predictors of later suicide in this sample. Those who completed suicide demonstrated evidence of more severe illness over a lifetime (for example, having more admissions), but revealed less suicidal ideation at the time of the index MDU assessment. While these features were statistically significant, they are of limited usefulness in predicting suicide in an individual patient.

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While there is a well-documented association between depression and completed suicide,[1,2] there are few firm data to guide the clinician in identifying individual depressed patients who may be at particularly high risk. Many studies have examined community populations for broad demographic and clinical correlates of suicide, but few investigations have focused specifically on samples of depressed patients. The 2 main methodologies used in such studies to determine indicators of future completed suicide have been the use of "psychological autopsies"[3,4] and prospective follow-up of well-characterized depressed subjects.

The major advantage of prospective suicide studies is the capacity to assess patients in detail without the limitations of missing data and retrospective interpretations that are implicit in the psychological autopsy methodology. There have been few long-term prospective studies reporting predictors of later completed suicide, presumably because of the logistical difficulties of recruiting and assessing cohorts of sufficient size over an adequate duration to identify predictors of such a relatively uncommon event. Table 1 summarizes the 5 published prospective studies of suicide predictors in depressed groups.[5–9] Those studies, such as the one by de Moore and Robertson,[10] which only followed up groups defined by the occurrence of an index suicide attempt, have been excluded.

The prospective follow-up investigation reported in this article involved depressed patients referred during a 10-year period for detailed assessment and/or treatment by a specialist Mood Disorders Unit (MDU). The aims of the study were, first, to determine any clinical and/or demo-

Table 1. Prospective Studies of Predictors of Suicide in Depressed Samples

Reference	Sample: Setting	Sample: N	Follow-Up Period	Completed Suicides, N (%)	Predictors	Comments
Motto et al, 1985[5]	Inpatients because of depressive and/or suicidal state	2753	2 y	136 (4.9)	Older age Higher status occupation Greater financial resources Emotional disorder in family Sexual orientation More previous admissions Threatened financial loss More hours of sleep at night Weight change Ideas of persecution or reference Suicidal impulses Severity of suicide attempt Interviewer's reaction to patient	
Beck et al, 1985[6]	Hospitalized because of suicidal ideation, not suicide attempt	207	5–10 y	14 (6.8)	Hopelessness scale score Score on pessimism item of Beck Depression Inventory	Score of > 10 on hopelessness scale currently, identified 91% of eventual suicides
Fawcett et al, 1987[7]	Major affective disorder 80% Inpatients Psychiatric setting	954	Mean of 4 y	25 (2.6)	Hopelessness Loss of pleasure or interest Mood cycling during index episode Fewer previous episodes of major affective disorder	32% completed suicide within 6 months of entry to study 52% completed suicide within 1 year of entry to study
Fawcett et al, 1990[8a]					Within 1 year Panic attacks, severe psychic anxiety, diminished concentration, global insomnia, moderate alcohol abuse, severe loss of interest or pleasure After 1 year Severe hopelessness, suicidal ideation, history of previous suicide attempts	
Nordstrom et al, 1995[9]	Research patients in studies on depression and suicidal behaviors	346	Average of 6 y (range, 1–11 y)	27 (7.8)	Suicide attempt at index assessment	

[a]Sample, follow-up period, and completed suicides data are the same for references 7 and 8; reference 8 reflects a further analysis of the same data set.

graphic features that distinguished those patients who completed suicide from the surviving subjects and, second, to identify the prevalence of completed suicide in this cohort.

METHOD

Population

Patients referred to a specialist MDU at Prince Henry Hospital in Sydney, Australia, during its first decade of operation were assessed in detail using structured interviews and self-rating scales. The sample comprised 1604 patients, 813 of whom fulfilled DSM-III, DSM-III-R, or DSM-IV criteria for a current primary major depressive episode. Diagnoses were made using structured clinical interviews undertaken by research psychiatrists.[11] This group was mainly a tertiary-referral population, with most of the patients suffering from treatment-refractory depression. No patients had schizophrenia or dementia.

Although 3 successive distinct data sets were collected during the 10-year period,[12–14] there was substantial uniformity overall, with many common variables and scales.

Ascertainment of Suicide Completers

During the 10-year period, the MDU carried out a routine follow-up of these 813 patients (usually after 12 months) that involved contact by phone and structured review interviews where possible. Further information about patients was sought formally at the end of the 10 years as now detailed. All MDU psychiatrists were given a comprehensive list of those patients whom they had assessed or treated at the MDU. They were asked to provide as much information as possible about the patients' current status and/or information about recent contact of

patients with other mental health care providers. Patients for whom no definite information could be obtained by this method were followed up through telephone contact with various sources of last known contact, such as general practitioners and other referring organizations, until patient status was determined. Families were not contacted. The mean time to follow-up was 5.1 years (range, 1–10 years).

For all patients known to be deceased, information concerning the nature of their death was obtained from MDU consultant psychiatrists, inpatient hospital files and case notes, MDU patient research files, general practitioners and/or referring psychiatrists, and relevant death certificates requested from the state death registry. "Completed suicide" status was confirmed only if all sources of information were consistent.

Thirty-one individuals were confirmed as having completed suicide (3.8% of the 813 patients with a major depressive episode). For 3 other patients, suicide was suspected, but could not be confirmed due to the possibility of accidental causes.

Assessment

First, the group of confirmed suicide completers was compared with the total remaining depressed sample on a number of demographic and clinical variables common to the 3 data sets. These included age, sex, marital status, employment, inpatient or outpatient status, 21-item Hamilton Rating Scale for Depression (HAM-D)[15] score, and type of depression (specifically, rates of melancholic and psychotic depression). Hopelessness and pessimism were both assessed using single self-report questions, with options being "nil," "mild," "moderate," or "severe." (These latter scores were available for most [97%] of the sample as a total, but for only 19 of the suicide cases, due to inconsistencies in collecting such data in the first data set.) In the analyses, hopelessness and pessimism were considered absent for "nil" or "mild" ratings and present for "moderate" or "severe" ratings.

Second, and more importantly, the group of suicide completers was compared with 2 matched groups from the total sample: (1) a group of 31 age- (within 5 years) and sex-matched subjects who were confirmed to be alive and who had never made a suicide attempt (hereafter termed "nonattempters") and (2) a group of 24 age- (within 10 years) and sex-matched subjects who were confirmed to be living and had made at least 1 suicide attempt (hereafter termed "attempters"). Since there were, in the total sample, very few older male patients who had attempted suicide, it was possible to match the suicide completers with only 24 attempters, even within an age range extended to 10 years. Such matching for age and sex was undertaken in view of the consistent relationship between completed suicide and these variables in the suicide literature.[3]

Patients were not included in the age- and sex-matched comparisons if they had any history of self-mutilating behavior, to avoid confounding self-injurious behavior due to personality disorder with true suicide attempts. The suicide completers were compared with the matched groups on demographic features (employment status, marital status, urban/rural dwelling) and the following clinical variables: 21-item HAM-D scores, rates of self-reported hopelessness and pessimism, type of depression (reactive, neurotic, melancholic, or psychotic, as defined by MDU clinical descriptors), age at first depressive episode, number of years since first episode, number of episodes, number of admissions for depression, inpatient or outpatient status, personality dysfunction, alcohol or drug abuse, rates of specific treatments for depression during the index contact, family history of depression, family history of suicide, and details of previous suicidal behavior (only for the comparison between suicide completers and attempters). Where such information was not available from a particular data set, it was obtained from contemporaneous MDU clinical files.

Statistical Methods

Dimensional data were analyzed using unpaired t tests (for the initial unmatched comparison with all other depressed subjects), paired t tests (for the matched group comparisons), or univariate analyses of variance (when controlling for patient age). Categorical data were analyzed using either the chi-square statistic or the McNemar test for paired data (binomial exact 2-tailed p). Statistical significance was set at $p < .05$. Separate stepwise logistic regression analyses were also undertaken for each of the 3 comparisons.

RESULTS

Demographic Characteristics of Suicide Completers

The 31 suicide completers had a mean ± SD age of 49.8 ± 16.6 years at the time of presentation to the MDU and a mean age of 51.1 ± 16.4 years at the time of suicide. Eighteen (58%) of the subjects were male. At the time of index MDU assessment, 22 (71%) of the suicide completers were married or in a de facto relationship, 5 (16%) were separated or divorced, and 4 (13%) were single and had never been married. Eleven were in paid employment, 8 had retired, 8 were in receipt of a pension or sickness benefit, 3 were unemployed, and 1 was involved in home duties. Twenty-four subjects were from urban areas, and 7 lived in rural localities.

Clinical Characteristics of Suicide Completers

Most of the suicide completers (N = 26; 84%) were MDU inpatients at index assessment, while the remaining 5 patients received outpatient assessment or treatment only. The suicide completers had experienced their first

depressive episode at a mean age of 37.1 ± 14.6 years and had a mean lifetime total of 4.0 ± 4.0 psychiatric admissions. Eighteen of the 31 reported previous episodes of depression (with those 18 having a mean of 3.0 prior episodes). A family history of affective disorder was evident in 18 cases (58%), while a completed suicide in first- or second-degree relatives was reported in 7 (23%).

The MDU clinical diagnoses at index assessment were as follows: 6 (19%) with psychotic depression, 12 (39%) with melancholic depression, 10 (32%) with neurotic depression, and 3 (10%) with reactive depression. Twenty-six patients had unipolar depression, and 5 (16%) had bipolar disorder. The mean 21-item HAM-D score at baseline was 20.1 ± 8.6, with a mean score for the suicide item of 1.4 ± 1.27 (range, 0–4). Twenty-four (77%) of the 31 suicide completers had clinical evidence of either personality disorder or dysfunctional personality style, all cluster B or C (9 dependent, 7 obsessional, 4 borderline, 2 histrionic, and 1 each avoidant and narcissistic). Three patients showed evidence of cognitive impairment at index, and 8 had a history of alcohol or other drug dependence.

The suicide completers had made a mean number of 1.5 ± 1.3 (range, 0–4) previous suicide attempts, with 8 (26%) not reporting any previous attempt. Of the 23 completers who had made a previous suicide attempt, the mean age at first attempt was 46.6 ± 17.3 years. Completers made their first attempt (i.e., either attempted or completed) a mean of 5.4 ± 13.0 years after the onset of their mood disorder and completed suicide a mean of 56.7 ± 62.9 weeks after the onset of the episode associated with the referral to the MDU. Inpatients at the MDU index assessment (N = 26) completed suicide a mean of 13.0 ± 17.5 weeks after discharge.

Mode of Suicide

The majority of suicide completers used nonviolent means, with 16 taking their lives by ingestive overdose or other self-poisoning. For 1 subject, the method of suicide could not be confirmed. The remaining 14 cases used violent methods, including 5 deaths by hanging, 4 by jumping from a height, 2 by throwing themselves under a train, and 1 each by firearm, incineration, and driving over a cliff.

Suicide Completers (N = 31) Compared With All Other Patients (N = 782)

There was no significant difference in age between the suicide completers and the remaining sample. The suicide completers were significantly more likely to be male (58% vs. 33%; $\chi^2 = 8.0$, $p < .01$), to be married or in a de facto relationship (71% vs. 48%; $\chi^2 = 8.0$, $p < .01$), and to have been MDU inpatients at the index assessment (84% vs. 49%; $\chi^2 = 12.0$, $p < .001$) compared with the total depressed sample. There were nonsignificant trends for the suicide completers to have higher rates of hopelessness (79% vs. 61%; $\chi^2 = 2.4$, $p = .12$) and pessimism (84% vs. 66%; $\chi^2 = 2.7$, $p = .09$). There were no differences in employment status, severity of depression as measured by the HAM-D, or subtype of depression.

A stepwise logistic regression was undertaken with the above significant factors being entered. Inpatient status at MDU index assessment remained significantly more likely in completed suicides (odds ratio [OR] = 1.96, $p < .01$). The following interactions were also significantly associated with completed suicide: being older and being in a married or de facto relationship (OR = 1.23, $p < .001$) and being either male and married or female and unmarried at index assessment (OR = 1.72, $p < .01$).

Comparison of Age- and Sex-Matched Suicide Completers and Living Nonattempters (N = 31)

Since the nonattempters were older, despite matching for closest possible age (51.2 vs. 49.8 years; $t = 3.1$, $p < .01$), analyses were covaried for age where possible. Suicide completers had been more frequently admitted to the hospital for depression during their lifetime (4.0 vs. 1.3 admissions; $F = 8.5$, $p < .01$) and were more likely to have been MDU inpatients at the time of index assessment (84% vs. 39%; $p < .001$) than were nonattempters. However, there was no difference in the number of lifetime depressive episodes between these groups. Suicide completers were also more likely to have evidence of either a personality disorder or a dysfunctional personality style (77% vs. 19%; $p < .001$). There were no differences in the rates of alcohol or other substance abuse.

Interestingly, there were no significant differences (or even trends) between these groups for the following variables: urban versus rural locality, employment status, marital status, age at onset of depression, HAM-D total score, HAM-D suicide item score, family history of suicide or mood disorder, and rates of psychotic or melancholic subtypes. Rates of self-reported hopelessness and pessimism were equivalent between groups, with high rates on both items affirmed by completers (92% and 96%) and nonattempters (80% and 83%). The only difference between groups in individual HAM-D items was the "general somatic symptom" score, with the suicide completers having lower scores at baseline than nonattempters (0.8 ± 0.7 vs. 1.4 ± 0.6; $t = 3.9$, $p < .01$). There were no significant differences between groups in the frequencies of treatments received at the index contact (i.e., antidepressants, psychotherapy, or electroconvulsive therapy [ECT]), with ECT being received by 7 completers (23%) and 5 nonattempters (16%, $p = .75$).

After logistic regression, being an inpatient (OR = 2.25, $p < .05$) and having had more lifetime admissions (OR = 1.60, $p < .05$) were still significantly associated with suicide, but personality dysfunction did not remain significantly predictive.

Comparison of Matched Suicide Completers and Living Suicide Attempters (N = 24)

It was possible to match only 24 of the suicide completers with attempters within an age range of 10 years. Comparisons were therefore based on these 24 matched pairs. Surprisingly, the suicide completers reported less suicidal ideation (1.4 vs. 2.8; $t = 3.2$, $p < .01$) and less weight loss (0.5 vs. 1.0; $t = 2.2$, $p < .05$) on the HAM-D, had made fewer previous suicide attempts (1.4 vs. 2.8; $t = 3.2$, $p < .01$), and were older at their first attempt (43.3 vs. 35.8 years; $t = 2.5$, $p < .05$) compared with attempters. Once more, the suicide completers were more likely to have been MDU inpatients at index assessment (84% vs. 54%; $p < .05$).

There were no differences in urban versus rural locality, employment status, marital status, age at index assessment, age at depression onset, severity of depression as measured by total HAM-D score, number of psychiatric admissions or episodes of depression, weeks between onset of depression and first suicide attempt, evidence of alcohol or other drug abuse, family history of mood disorder or suicide, or subtype of depression. Similarly, rates of self-reported hopelessness and pessimism were high for both completers (89% and 94%) and attempters (100% and 88%). There were also no significant differences between groups in the frequencies of treatments (i.e., antidepressants, psychotherapy, or ECT), with 6 (25%) of the matched completers having received index ECT compared with 2 (8%) of the attempters ($p = .13$). Furthermore, the 2 groups did not differ significantly in rates of personality disorder or disordered functioning (completers, 75% vs. attempters, 58%; $p = .40$).

Logistic regression demonstrated that the risk of completed suicide was associated with fewer past suicide attempts (OR = 0.31, $p < .01$) and being an inpatient at index assessment (OR = 2.25, $p < .05$).

Suicide Completers: Within-Group Comparisons

Female suicide completers had more psychiatric admissions (6.0 ± 5.4 vs. 2.6 ± 1.7; $t = 2.3$, $p < .05$) and more previous depressive episodes (5.0 ± 4.8 vs. 1.7 ± 1.3; $t = 1.8$, $p < .05$) than did men. Women were also younger when first depressed (32.5 vs. 40.3 years) and at their first suicide attempt (41.2 vs. 50.6 years) and on average had made more past attempts (2.0 vs. 1.1) than men, although these differences did not reach significance. Violent techniques were more likely in those living in rural compared with urban areas (85.7% vs. 34.8%; $\chi^2 = 5.6$, $p < .05$). However, violent methods were not more frequent in men, those with psychosis, or those who had a relative who had completed suicide.

Twenty-one (68%) of the completers committed suicide within the 12 months after their baseline assessment, while the remaining 10 (32%) completed suicide at a later stage (range, 2–6 years after baseline). We examined for differences between these 2 groups of completers while controlling for baseline age. The only significant findings were that those who completed suicide in the 12 months after baseline had higher scores on the HAM-D (23.2 ± 1.7 vs. 13.6 ± 2.5; $F = 9.65$, $p < .01$) and were more likely to use a violent method of suicide (65% vs. 10%; Wald = 6.38, $p < .05$). There were no differences in sex, marital status, rates of hopelessness and pessimism, history and characteristics of depression, number of admissions for depression, or suicidal behavior history.

DISCUSSION

There have been few prior prospective studies of well-characterized depressed cohorts that have been able to identify risk factors for later occurrence of suicide (Table 1).[5–9]

This article compared 31 depressed patients who were confirmed to have completed suicide with all other depressed subjects in the original sample, living age- and sex-matched subjects who had never attempted suicide, and living age- and sex-matched subjects who had made at least 1 suicide attempt.

The most consistent finding, across all 3 comparisons, was that the suicide completers were more likely to have been inpatients at the time of the index MDU assessment. This result remained significant after logistic regression for each of these comparisons and is in line with other reports. Simon and VonKorff[16] recently reported on suicide mortality of patients treated for depression in a large health plan in western Washington in the United States. They found a marked gradation, with a rate of 224 per 100,000 among those who had received any inpatient psychiatric treatment, 64 per 100,000 for those who had received only outpatient speciality mental health treatment, 43 per 100,000 for those treated only with antidepressants in primary care, and a zero rate among those treated in primary care without antidepressants. These findings would suggest that inpatient status is an index of depression severity—in terms of either symptoms or complexity of associated problems—and hence risk.

An alternate explanation is that hospitalization is a "toxic" experience for some depressed patients. Repeated hospital admissions may led to a sense of powerlessness or a further reduction of self-esteem, consequently heightening any propensity to suicide.

Related to this association between inpatient status and completed suicide is our finding that the suicide event occurred relatively soon after discharge from the hospital; on average, within 13 weeks of the MDU index admission. This finding is also consistent with other reports. Fawcett et al.,[7] studying a combined inpatient and outpatient major affective disorders population, found that 32% of the suicides occurred within 6 months of index assessment and 52%, within 1 year. They did not, however, look separately at their inpatient and outpatient groups.

There is also a repeated finding in the general psychiatric literature of high risk for suicide in the interval soon after discharge from the hospital. For example, in a prospective study of American war veterans attending an inpatient psychiatric facility, Pokorny[17] found that 61% of patients who eventually completed suicide did so within 6 months of their discharge from the hospital. In an earlier study, which traced 618 war veterans assessed at baseline for suicidal behavior,[18] the same researcher found that the highest risk for completed suicide was in the first 3 months after initial consultation. Appleby et al.[19] found that 24% of a national English and Welsh sample of 2177 suicides occurred within 3 months of hospital discharge, peaking within the first week. Goldacre et al.[20] calculated from a study in the Oxford health region in the United Kingdom that the suicide rate in the first 28 days after discharge was 7.1 times higher for male patients and 3.0 times higher for female patients than that found during the remaining 48 weeks of the first year after discharge. These figures are consistent with a recent Danish report,[21] which found that the strongest risk factor for suicide was mental illness necessitating hospital admission. The risk of suicide was particularly high during admission (relative risk = 62.6) and during the year after discharge (relative risk = 6.5).

In a psychological autopsy study investigating completed suicides in general psychiatric outpatients, Earle et al.[22] also found that a third of patients who completed suicide did so within a month of discharge from an inpatient setting and that most completers (73%) did not express suicidal intent or ideation during their most recent contact with mental health professionals.

As expected from the general suicide literature, we found that gender was a significant variable in the comparison between suicide completers and all other patients, with interactions between age or gender and marital status remaining significant after logistic regression. Older subjects in a relationship were more likely to complete suicide. There was a distinction between the genders, with married men and single women being at highest risk.

Intriguingly, there were no differences in the ratings of hopelessness or pessimism between the subjects who had completed suicide and any of the 3 comparison groups, although there was a trend when completers were compared with the total group. Hopelessness had been reported to be a significant predictor of eventual suicide by both Beck et al.[6] and Fawcett et al.[7,8] In the study by Beck et al.,[6] hopelessness (as measured by Beck's Hopelessness Scale) and the pessimism item of the Beck Depression Inventory were the only significant predictors of eventual suicide. Fawcett et al.[7] found hopelessness (rated as a Schedule for Affective Disorders and Schizophrenia-Change Version item) to be 1 of 4 predictors of suicide (see Table 1), with their later study[8] demonstrating it to be associated with suicide occurring more than 1 year after the index assessment. Our failure to replicate these findings may be partly explained by differences in measurement. As previously mentioned, we assessed hopelessness using a single question (on a 4-point rating scale), which may well have been a less sensitive measure of this construct than Beck's Hopelessness Scale. Furthermore, hopelessness and pessimism data were available for only 19 of the suicide patients. Although this limited population reduced the statistical power of the comparisons, there were no trends suggesting any true difference between groups.

When we compared subjects who completed suicide with surviving subjects who had never attempted suicide, the only other variable remaining significant after logistic regression (in addition to inpatient status) was that the subjects who completed suicide had been hospitalized more frequently. This finding provides further support for our contention (consistent with other authorities[21]) that repeated hospitalizations heighten the risk for later completed suicide. This is probably because such a pattern reflects a high degree of depression severity, but may also be a consequence of other factors such as increased demoralization. However, the salience of additional factors that may lead to frequent hospitalizations, such as poor community psychiatric services and lack of family or social supports, cannot be excluded.

Other significant differences between these groups that were evident before logistic regression were that suicide completers were more likely to have personality dysfunction and have fewer general somatic symptoms on the HAM-D. There were no differences in HAM-D somatic or psychic anxiety items. Neither the total HAM-D score nor the suicide item was able to discriminate these groups. This finding is consistent with a study by Mann et al.,[23] who found that scores on clinician-rated measures of depression severity, including the HAM-D, were no different for a group of attempters compared with nonattempters. They also found that attempters had more episodes of major depression over their lifetime, a finding again consistent with our report.

In comparison with those survivors who had made at least 1 previous attempt, the suicide completers had made fewer prior attempts (with this difference remaining significant after logistic regression, in conjunction with inpatient status). Other significant differences prior to regression were consistent with this apparently paradoxical finding. Those who later completed suicide reported less suicidal ideation and less weight loss on the HAM-D. Suicide completers were also older at the time of their initial suicide attempt than survivors who had attempted suicide. These findings add further weight to previous literature, indicating that suicide completers and attempters are distinct groups, although there is no doubt that a substantial proportion of attempters do go on to later suicide.[10]

When we compared those who completed suicide in the 12 months post index assessment with those who completed suicide some time after that interval, we found that

the former group could be distinguished only on the basis of higher HAM-D scores and a greater tendency to use more violent methods of suicide.

Although several studies (including the present report) have identified various factors associated with completed suicide, prediction remains a difficult task, and eventual suicide, even in uniquely "high-risk" groups, is often characterized more by unpredictability. In a review of this issue, Goldney[24] outlined many of the challenges confronting prediction studies, underscoring the limitations of such research findings in relation to the identification of specific "at-risk" individuals.

Establishing an exact prevalence of suicide rates in this cohort was not the central aim of this study, as we did not seek formal notification of death for all 813 depressed subjects. We found a completed suicide rate of 3.8% over the 10-year period, with the mean time to follow-up being 5.1 years. While possibly representing an underestimation in view of our methodology, this rate is not unlike those of previous reports with figures ranging from 2.6% to 7.8% (Table 1) for similar periods of follow-up.

The strengths of this study lay in its prospective design, detailed index assessment, large sample size, and comparisons of suicide completers with both attempters and nonattempters. The latter comparisons have not been undertaken in previous such reports. The major limitation of the study was that, despite the thorough follow-up procedure and the obtaining of death certificates to confirm details where cause of death was unknown from all other sources of contact, we did not routinely check the status of all subjects with the state death registry. Consequently, we cannot exclude the possibility that some of the remaining depressed group in the first (nonmatched) comparison had, in fact, completed suicide. We did, however, use only subjects who were confirmed to be alive in the matched comparison groups.

In conclusion, the group who later completed suicide was distinguished most strongly by their inpatient status at the index assessment, greater number of prior admissions for depression, fewer previous suicide attempts, being older and in a relationship, and being male and married or female and single. The overall picture was, however, somewhat paradoxical, with a number of indicators of more severe depressive illness over a lifetime, but less evidence of suicidal ideation at the time of index MDU assessment. In contrast to 3 previous reports,[6–8] the predictive value of hopelessness and pessimism was not apparent, perhaps reflecting limitations in our methodology. Finally, the high risk of suicide in the months after discharge indicates the need for vigilant outpatient monitoring, especially in such a treatment-refractory population.

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