

Suicide in the mentally ill

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It has been estimated that mental disorder is associated with an 11-fold increase in the risk of suicide.¹ Half of those who complete suicide have previously been referred to psychiatric services, and a quarter have been in contact with services in the year before their death.² The current suicide prevention target in England is a reduction of the suicide rate by 20% by 2010.³ Effective interventions for patients with mental disorder may help services to achieve these targets.

Individual disorders and the risk of suicide

The 'psychological autopsy' approach

Many studies have involved 'psychological autopsies' – the collection of information on subjects who have completed suicide from interviews with family members, relatives, friends and healthcare staff. Psychological autopsy studies may be subject to recall bias but they have consistently found that psychiatric disorder is the most important risk factor for suicide, present in 90% of cases.⁴ Affective disorder is the most common diagnosis and is present in 60% of those who die by suicide.⁴

Follow-up studies

An alternative method of investigating the association between psychiatric disorder and suicide is the cohort or follow-up study. A meta-analysis combined the results of 249 studies,¹ and Table 1 summarizes the results. The standardized mortality ratio (SMR) indicates the mortality rate in the sample of interest when compared with the mortality rate that would be expected in a 'standard population' with a similar age and sex profile. SMRs greater than 100 indicate increased risk of suicide and most psychiatric disorders were associated with an increased risk.

Most studies were carried out in secondary care. These results may therefore not be generalizable to primary care settings.

Risk factors in individual psychiatric disorders

Recent systematic reviews have investigated risk factors for suicide in major mental illness.

The lifetime risk for suicide in those with schizophrenia has been estimated to be 5–10%. Specific risk factors for suicide

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What's new?

- Although the rate of suicide in England and Wales is falling, suicide in the mentally ill remains a major public health problem
- Risk factors for suicide may vary by diagnostic group, age, and treatment setting
- Rigorous assessment and treatment of depression may help to prevent suicide. Clozapine and lithium seem to exert a specific anti-suicidal effect in selected groups of patients
- As well as general suicide prevention strategies, specific measures to reduce suicide in the mentally ill are also likely to be important

include previous depressive disorders, previous suicide attempts, drug misuse, agitation or motor restlessness, fear of mental disintegration, poor adherence to treatment, and recent loss.⁵ Hallucinations appear to be protective.⁵ The lifetime risk for suicide in bipolar disorder has been estimated to be 10–15%, although this may represent an overestimate because it is based largely on studies of hospitalized patients. Specific risk factors for suicide include male gender, previous suicide attempts and hopelessness.⁶

The National Confidential Inquiry into Suicide

Much of what we know about suicide in the mentally ill in the UK is based on data collected by the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness. The methodology of the Inquiry is discussed in detail elsewhere.²

The figures presented below refer to the 4859 cases obtained during the first 4 years of data collection (1996–2000). This represents 24% of the total number of suicides in the general

Common mental disorders and risk of suicide

Disorder	SMR ^a (95% CI)
Alcohol misuse	586 (541–633)
Personality disorders	708 (477–1010)
Schizophrenia	845 (798–895)
Panic disorder	1000 (457–1898)
Dysthymia	1212 (1150–1277)
Substance use: opioids	1400 (1079–1788)
Bipolar disorder	1505 (1225–1844)
Substance use: hypnotics	2034 (1425–2816)
Major depression	2035 (1827–2259)
Eating disorders	2314 (1538–3344)

^aSMR, standardized mortality ratio. Figures over 100 indicate increased risk of suicide.

Source: Harris and Barraclough, 1997.¹

Table 1

population during this time. More recent figures are due to be published in an Inquiry report in 2006/2007 and are similar to those for the earlier period.

Because the Inquiry is essentially a descriptive study, firm aetiological conclusions regarding specific risk factors are difficult to draw. Relevant case-control studies are therefore also referred to where appropriate.

Sociodemographic and clinical characteristics of patients with mental disorder who complete suicide

Table 2 presents some data from the National Confidential Inquiry.

The age profile varied between the sexes, with a peak incidence for males in the 25–34 age group and a later, flatter peak for females (peak incidence in the 35–44 age group). There were important differences between age groups.⁷ Younger patients more often died by jumping from a height or in front of a moving vehicle, while older patients more often died by drowning. Suicide in young patients was more often characterized by schizophrenia, personality disorder, unemployment and alcohol or

drug misuse. In older patients, depression, living alone, physical illness and recent bereavement were more often found. Suicide pacts were more common in patients over 65.

A case-control study of 149 suicides and 149 controls matched for age, sex, diagnosis and date of last admission carried out in Greater Manchester suggested that the most important independent clinical predictors of suicide were a previous history of self-harm (odds ratio (OR) 3.7, 95% confidence interval (CI) 1.7 to 5.7) and expressing suicidal thoughts in the period between discharge and death (OR 1.9, 95% CI 1.0–3.5).⁸

Methods of suicide

In the Inquiry sample, the most common methods of suicide for males were:

- hanging (38%)
- self-poisoning (25%)
- jumping from a height or multiple injuries (13%)
- carbon monoxide poisoning (9%).

In females, the most common methods were:

- self-poisoning (42%)
- hanging (22%)
- jumping from a height or multiple injuries (13%)
- drowning (8%).

In both males and females, psychotropic drugs (e.g. tricyclic antidepressants or antipsychotics) were the most commonly used substances for self-poisoning.

Aspects of clinical care

Table 2 also lists aspects of clinical care for mentally ill suicides in the Inquiry sample. One-fifth of subjects were non-compliant with treatment.

In the Greater Manchester case-control study, no aspects of aftercare were independently associated with the risk of suicide, with the exception that the suicides were more likely to have had their care reduced at the final appointment before their death (OR 3.7, 95% CI 1.8–7.6).⁸

In-patients and those recently discharged

Patients who complete suicide while in-patients or shortly after discharge from hospital are a particularly important group because the circumstances of their death may highlight deficiencies in service provision.⁹

In-patients: 16% of the sample were in-patients at the time of their death. A quarter of in-patient suicides occurred during the first week of admission and 31% occurred on the ward itself. The majority of ward suicides involved hanging. Forty percent of suicides occurring off the ward involved patients who had left the ward without staff permission. A quarter of wards reported problems observing patients because of ward design; for example, because of ward offices being located on different corridors from patient areas.

A case-control study of 59 in-patient suicides and 106 controls matched for age, sex, diagnosis and admission date in one English region found seven independent risk factors for suicide:

- previous self-harm
- admission under the Mental Health Act
- involvement of the police in admission
- depressive symptoms

Characteristics of 4859 suicides in contact with mental health services in England and Wales

	Number (n = 4859)	% (95% CI)
Sociodemographic characteristics		
Median age (range)	41 yrs (13–95 yrs)	
Male	3198	66 (64–67)
Ethnic minority	282	6 (5–7)
Not currently married	3405	71 (70–73)
Unemployed/ long-term sick	2765	58 (58–60)
Living alone	2006	43 (44–44)
Clinical characteristics		
Any secondary diagnosis	2460	52 (51–54)
Over 5 previous admissions	712	16 (15–17)
History of previous self-harm	3077	64 (63–66)
History of violence	920	19 (18–21)
History of alcohol abuse	1899	40 (38–41)
History of drug misuse	1348	28 (27–30)
Aspects of clinical care		
Last contact with services within 7 days	2308	48 (47–50)
Symptoms at last contact	2990	64 (63–65)
Out of contact with services	1153	29 (27–30)
Non-compliant with treatment	929	22 (21–24)

Source: Appleby *et al.*, 2001.²

Table 2

- violence towards property
- going absent without leave
- a significant care professional being on leave.¹⁰

Recently discharged patients: almost a quarter of the Inquiry cases had completed suicide within 3 months of discharge from psychiatric in-patient care. Post-discharge suicides were most frequent in the 2 weeks after leaving hospital, with 30% of the post-discharge suicides occurring during this period.

A case-control study of 234 patients who completed suicide within 1 year of hospital discharge and 431 controls matched for age, sex, diagnosis and admission period found a number of independent risk and protective factors (Table 3).¹¹

Interventions

The relatively low incidence of suicide means that trials which aim to use it as an outcome measure require many thousands of patients in each treatment arm. It is therefore not surprising that data regarding the effectiveness of interventions for the prevention of suicide are lacking.

Treating mental disorder and suicide prevention

From a pragmatic viewpoint, the rigorous clinical assessment and treatment of mental disorder would seem to be a useful starting point for reducing suicide in the mentally ill.

A study carried out on the Swedish island of Gotland reported that educational programmes on the management of depression, which were attended by most of the island's general practitioners, reduced the suicide rate by 20–48% in the following year.¹² Two years after the programme, suicide rates rose again. It is possible that the short-term reduction may simply have been a random fluctuation. The findings of this study have been replicated to a

Risk and protective factors for completed suicide within 1 year of hospital discharge

Risk factors

- Non-white ethnic status
- Living alone
- History of self-harm
- Suicidal ideas precipitating admission
- Hopelessness
- Change of consultant since previous admission
- Relationship difficulties
- Loss of job
- Self-harm while an in-patient
- Unplanned discharge
- A significant care professional leaving or being on leave

Protective factors

- Shared accommodation
- Delusions at admission
- Misuse of non-prescribed substances
- Continuity of contact

Source: King *et al.*, 2001.¹⁰

Table 3

Specific strategies to reduce suicide in the mentally ill

- Regular staff risk-management training
- Patients with severe mental illness and self-harm to receive the most intensive level of care
- Individualized care plans
- Prompt access to services for patients in crisis
- Assertive outreach teams
- Availability of atypical antipsychotics
- Strategies for dual diagnosis
- In-patient wards to remove all likely ligature points
- Prompt follow-up following discharge from in-patient care
- Careful prescribing of medication
- Multidisciplinary post-incident review

Source: Appleby *et al.*, 2001.²

Table 4

greater or lesser extent in Hungary, Japan, and Slovenia but we should still be cautious in generalizing these findings to British health service settings.

Meta-analyses show no difference in suicide rates between those treated with antidepressants and those treated with placebo, but study samples are not always representative of typical clinical populations.¹³ However, lithium treatment for patients with affective disorder¹⁴ and clozapine treatment for schizophrenia¹⁵ have been associated with a reduced risk of suicide.

Ecological (area-based) studies have shown associations between increased rates of antidepressant prescribing and decreases in suicide rates in some countries but not others. However, even in the presence of a positive result, ecological studies are unable to demonstrate that the observed associations are causal. The situation has been further complicated by assertions that one particular class of antidepressant (the SSRIs) actually increases the risk of suicide, especially in adolescents. Nevertheless, pharmacological treatment for depression probably still represents a very important strategy for reducing an individual's risk of suicide.¹⁶

Strategies to prevent suicide in the mentally ill

General measures to prevent suicide are listed on pages 261–262. Specific measures to prevent suicide in the mentally ill are listed in Table 4 and were taken from *Twelve Points to a Safer Service*, a series of recommendations for clinical services arising from the 5-year report of the National Confidential Inquiry.² ◆

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