Long-term mortality after first psychiatric admission

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Background Little is known about the long-term mortality and causes of death after first psychiatric admission.

Method A consecutive series of 87 patients admitted for the first time from a strictly defined catchment area to Saxondale Hospital, Nottinghamshire, who were discharged in 1974 and 1975, were traced in 1992 to either their general practitioner or death. The causes of their deaths were ascertained and the observed mortality was compared with expected mortality.

Results Twelve subjects had died. None had committed suicide, and there were no open verdicts or accidental deaths. Although the observed mortality was higher than expected, there was no significant excess.

Conclusions There may be little scope for reducing suicide rates by targeting patients for careful follow-up after discharge from their first psychiatric admission. More research is required before large investments are made in potentially fruitless interventions to achieve the objectives of *The Health of the Nation*.

Suicide is the third most important contributor to life years lost (Gunnell & Frankel, 1994). Therefore it is not surprising that suicide reduction is included as a key target area in *The Health of the Nation* (Department of Health, 1992). Gunnel & Frankel (1994) stressed that the impact on suicide of attempting to maintain contact with former psychiatric patients defaulting from follow-up is uncertain. The value of such follow-up, and the role of more complex discharge procedures such as the Care Programme Approach, and the Supervision Register as means to reduce suicide rates, is equally debatable. This issue raises many questions regarding the relationship between mental illness and suicide. For instance, which diagnostic groups are most at risk, is there a difference in the risk between first admissions and subsequent admissions, and what proportion of first admissions commit suicide in the long term?

Previous studies have had their limitations in answering these questions. For instance, studies on consecutive series of suicides have been criticised for methodological deficiencies (e.g. they have been considered to overestimate the prevalence of psychiatric disorders). Even the most careful follow-up studies are flawed, and although many acknowledge possible biases, the generalisability of their findings remains uncertain. Only Blumenthal *et al* (1989) restrict themselves to first admissions, and most studies do not consider admissions from a strictly defined catchment area. Most studies have confined themselves to restrictively defined diagnostic groups. While this approach has the advantage of reducing heterogeneity, and adding to knowledge of the course of specific disorders, it may give a misleading picture of the overall group who experience a psychiatric admission. The length of follow-up is short in many cases. For example, Blumenthal *et al* (1989) followed patients for only five years. There is still a need for longer-term follow-up studies of mixed diagnostic groups of first psychiatric admissions from specified catchment areas. We have conducted a 16-year follow-up of such a series, comprising all 87 consecutive patients who were discharged from their first admission to Saxondale Hospital, Nottinghamshire, in 1974 and 1975. These patients were admitted from a well-defined catchment area, the Borough of Broxtowe. We present the mortality and the causes of death in the group over the next 16 years. We hope that the findings will contribute to a growing picture of the impact of a first psychiatric admission.

METHOD

The sample

This comprised all subjects, aged 16–65 years, discharged after their first psychiatric admission to Saxondale Hospital, Nottinghamshire, from the Borough of Broxtowe, Nottingham, in 1974 and 1975. Broxtowe has a stable population and a broad mixture of socio-economic groups. In 1974/5 the Borough of Broxtowe had a population of 101 600.

Review of case notes

A. M. B. and S. D. reviewed case notes relating to the index admission and the following details were obtained: marital status; socio-economic group (where possible); legal status on admission; duration of admission; the presence or absence of suicidal ideation and any suicidal act during or preceding admission. A DSM–III–R (American Psychiatric Association, 1987) diagnosis was made on the basis of all available information.

Sixteen-year follow-up

In 1992, P. C. N. traced 86 (99%) subjects either to their current general practitioner (GP) or to their death using the Nottingham Case Register, the Family Practitioner Health Services Committees and the NHS Central Register. Death certificates were obtained, and where appropriate the coroner's verdict was obtained.

Mortality

Observed risks were compared with expected risks, derived by constructing life tables year-by-year for each patient, using the age/sex/year-by-year-specific rates supplied by the Office of Population Censuses and Surveys. Statistical comparisons were made using a test statistic based on the normal approximation to the Poisson

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Table 1 Age, marital status and socio-economic group of cohort

	n
Age at index	
16–25	16
26–35	22
36–45	21
46–55	15
56–65	13
Marital status	
Single	21
Married	56
Widowed	5
Divorced/separated	2
Not known	3
Socio-economic group	
I	2
II	11
III	25
IV	10
V	5
Not known	34

Table 2 Admission details and diagnosis of the cohort

	n (%)
Legal status on admission	
Informal	72 (82.7)
Under a section	13 (14.9)
Not known	2 (2.4)
Suicidal ideation	
Absent	14 (16.0)
Present	36 (41.3)
Not known	37 (42.3)
Suicidal act	
No	54 (62.0)
Yes	28 (32.2)
Not known	5 (5.8)
Diagnosis (DSM–III–R)	
Organic disorder	7 (8)
Schizophrenia	9 (10.3)
Unipolar affective disorder	40 (46.0)
Bipolar disorder	3 (3.4)
Psychotic, other	5 (5.7)
Adjustment disorder	9 (10.3)
Substance abuse/dependence	5 (5.7)
Other	9 (10.6)

distribution. Observed cumulative mortality risks were also calculated for each of the further 16 years of follow-up, using survival analysis.

RESULTS

Demographic details

There were 47 males and 40 females, and their mean age in 1974/5 was 38.6 years. (range 16–65). The subjects' age distribution, marital status and socio-economic group are shown in Table 1.

Admission details and diagnosis

The duration of the subjects' admissions ranged from 1 to 211 days (mean 32 days). The subjects' legal status on admission, the presence or absence of suicidal ideation and suicidal act during or preceding admission, and the psychiatric diagnosis are shown in Table 2.

Mortality

Twelve subjects had died. None had committed suicide, and there were no open verdicts or accidental deaths. The causes of death for the 12 patients are shown in Table 3.

Figure 1 shows the mortality risks for the series. There was a trend towards a higher risk of death in the first 30 months of follow-up. Two-fifths of those subjects who had died did so within this period, and two-thirds had died within eight years of discharge. The observed mortality (12) was greater than that expected (8.81). The standardised mortality ratio was 1.36 (95% confidence interval 0.70–2.38). Although the observed mortality was greater than expected, the results were not significant (test statistic=1.07). There was an 87% chance that an individual would survive at least 16 years after the index admission.

DISCUSSION

Main finding

To our surprise, none of the traced subjects in our series had committed suicide in the 16 years of follow-up. This is despite the fact that at least one-third of our sample had attempted suicide at the time of admission. Our finding is in sharp contrast to the popular view associating completed suicide with psychiatric illness. For instance, Appleby (1992) concluded that suicide is the most important consequence of psychiatric disorder, and most major psychiatric disorders carry a high suicide risk.

Comparison with previous studies

Allebeck & Allgulander (1990) followed a cohort of Swedish men conscripted for military service for 13 years, and found that almost all in-patient diagnoses were associated with a significantly increased suicide risk. Our study was limited to first admissions, whereas their study population included those who had previous psychiatric admissions – subjects who are more likely to end their lives in suicide. Also, their sample was biased, being limited to those conscripted for military service. Blumenthal *et al* (1989) studied a cohort of 258 first-admission patients over a five-year period and found that 5% of their subjects had committed suicide. However, their sample may have been unusual as over 40% had a diagnosis of alcoholism or drug dependence,

Table 3 Details of the 12 deaths

Gender	Age at index	Survival (years)	Cause of death
M	59	0.1	Bronchopneumonia, cerebrovascular accident
F	64	1.8	Cerebral haemorrhage
M	58	2.2	Cerebral thrombosis, presenile dementia
M	43	2.3	Bronchopneumonia, reticulosis
M	47	2.4	Bronchopneumonia
F	41	5.0	Bronchopneumonia, carcinoma rectum
F	61	5.4	Pulmonary embolus, fractured femur
M	50	7.3	Heart failure, myocardial infarction
M	56	9.4	Carcinoma pancreas
F	56	13.0	Alzheimer's disease
M	64	14.1	Gastro-intestinal haemorrhage, peptic ulcer
M	47	14.7	Myocardial infarction, chronic bronchitis

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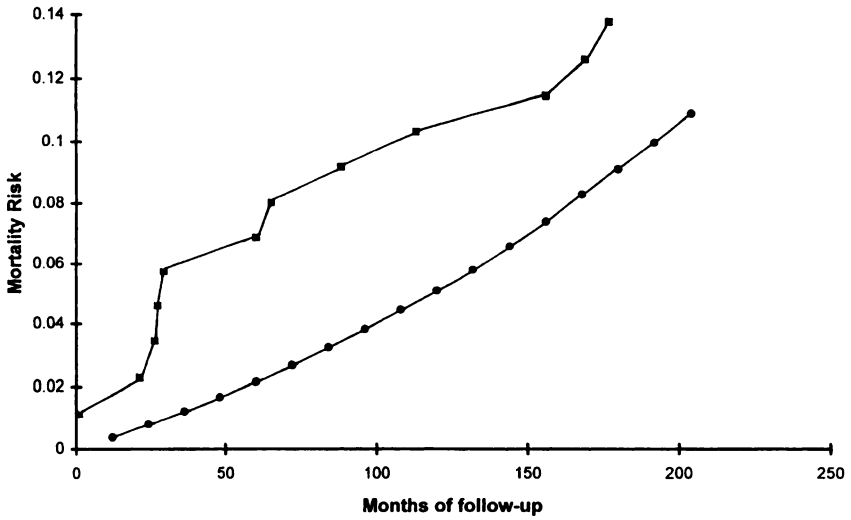

Fig. 1 Expected and observed cumulative mortality risk. ●, expected; ■, observed.

compared with only 5% in our series. This is an important difference, as they concluded that patients with chronic alcohol use had a higher suicide rate.

Why no suicides?

There are many possible reasons for our unexpected finding. For instance, the Borough of Broxtowe could have an unusually low suicide rate. Perhaps those at risk of suicide may not have been referred to psychiatric services by their GPs. Access to psychiatric services, largely in-patient based and several miles away, was more difficult compared with today's community teams. However, this seems unlikely to provide a full explanation for our results. One further possibility is that the subject we failed to trace had committed suicide. He was 37 years old, born in Scotland, and had been admitted with a diagnosis of alcohol misuse. The success rate of our tracing is very high, and it is easily possible that he could be alive but not traced at follow-up.

Appleby (1992) stresses that prevention of suicide requires an understanding of protective factors, which have been under-researched and are likely to lie in the nature of psychiatric care. Many studies (e.g. Geddes & Juszczak, 1995) have shown that the risk of suicide after discharge is highest in the first 28 days. It could be that Saxondale Hospital, a traditional asylum with large grounds, provided a more therapeutic environment, which could be considered as a protective factor. In the era of traditional asylums there was little pressure on beds and this could have been a further protective factor. Geddes & Juszczak (1995) recently concluded that an increase in the rate of suicide in the first 28 days following discharge occurred against the background of a reduction in psychiatric beds and a trend towards shorter admissions.

Mortality

Although in our series our observed mortality was greater than that expected, the difference was not significant. Previous studies have shown that subjects with psychiatric illnesses have significantly higher mortality rates. However, we focused on first admissions, whereas most previous studies (e.g. Kiloh *et al*, 1988) included re-admitted patients who are known to have higher mortality rates. We studied all psychiatric admissions, whereas previous studies were restricted to tightly defined diagnostic groups. This is especially important as the standard mortality ratio varies with psychiatric diagnosis. The mean age of our cohort was 38.6 years, whereas those aged 20–40 years have been observed to have the highest mortality rates.

In our study, the majority had died of cardiovascular causes and infections, which confirms findings from earlier studies (e.g. Gausett *et al*, 1992), and further illustrates the importance of ongoing follow-up of the physical health of psychiatric patients.

Implications

The introduction of more complex discharge procedures, together with the Care

CLINICAL IMPLICATIONS

- Suicide may be a rare event in first psychiatric admission cohorts, even in the longer term.
- Targeting first psychiatric admission for follow-up after discharge may not have any significant impact on *Health of the Nation* suicide indices.
- Diverting scarce resources from other high-risk groups may be counter-productive.

LIMITATIONS

- The sample size is small.
- The catchment area may be atypical.
- Effects of intervening variables such as treatment have not been studied.

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Programme Approach and the Supervision Register, have led to greater concentration on those who suffer severe mental illness. The lack of new resources to implement these procedures may lead to resources being directed away from other direct patient care, for example those presenting in crisis and recently discharged. In the absence of established high-risk groups, within limited and redirected resources we run the risk of focusing too narrowly and missing *The Health of the Nation* targets altogether. The lack of suicides in our series, in spite of apparent risk factors, suggests that first-admission patients should not be considered as a high-risk group and thus should not be targeted. It is suggested that further studies be carried out before there is a large investment of money and energy in potentially fruitless interventions driven by the targets of *The Health of the Nation*.

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