

Self-poisoning patients discharged from accident and emergency: risk factors and outcome

ABSTRACT— In a prospective audit of 1,096 consecutive attendances by deliberate self-poisoning patients at an accident and emergency department (A&E), such patients were discharged directly from A&E on 31% of occasions. Outcome and risk were compared for patients admitted to hospital and discharged directly from A&E. In the following year repetition of self-poisoning occurred in the same proportions of patients admitted to hospital and discharged from A&E (12%, relative risk 1.02). Suicide during the following three years occurred in 1.3% of patients admitted and 1.1% of those discharged (relative risk 1.2). Patients admitted to hospital from A&E were those likely to be at greater risk: they were older, reported more physical ill-health, expressed a threat or left a note more often, and had more frequently experienced psychiatric inpatient care. Thus, nearly one-third of deliberate self-poisoning attenders were discharged from A&E; outcomes were similar despite higher risk among admitted patients, suggesting that brief admission has some benefit.

In 1984 existing recommendations from the Department of Health and Social Security that all deliberately self-harming patients should receive psychiatric investigation before discharge were replaced by guidelines which acknowledged that professional workers other than psychiatrists might carry out the assessments [1]. A number of forces led to this change in official guidance. First, the incidence of deliberate self-poisoning had increased enormously during the late 1960s and the 1970s [2]. Second, physicians were unhappy about restriction of clinical freedom [3,4]. Third, a number of research studies suggested that doctors not trained

in psychiatry [5], as well as nurses [6] and social workers [7], were well able to assess self-harming patients,

Most research and debate on the assessment of deliberate self-harm has focused on the care of inpatients. Much less attention has been paid to the question of whether all such patients attending hospital should be admitted in the first place. Although not generally recognised, it has been the practice in a number of hospitals to discharge a substantial minority of patients directly from the accident and emergency department (A&E) [8]. Under certain conditions the latest guidelines sanction such discharges, and the proportion returning home from some A&E departments has risen to one-third or more [8–10]. Financial constraint and reduction in bed numbers seem likely to increase the pressures to minimise admissions. Unfortunately, research evidence about the risk or benefit of discharge from A&E is scanty and conflicting [11–13]. In Nottingham we had established, by retrospective pilot work [9], that about one in three self-poisoning patients were not admitted to hospital.

We therefore undertook a prospective examination of risk factors and outcome in patients discharged from A&E. The main purpose of the study was to compare patients admitted to hospital with those who returned home from A&E.

Subjects and methods

Nottingham has only one A&E unit, which deals with over 100,000 attendances each year. The study sample comprised all episodes of deliberate self-poisoning dealt with during the nine months between November 1985 and July 1986. Cases were included if, at their arrival, the A&E clerical staff recorded the presenting complaint as 'overdose' or 'self-poisoning'. At that stage they attached a research data-sheet to the clinical record-sheet. In order to include cases not identified at arrival but subsequently diagnosed as self-poisoning by A&E medical staff, we (D.O. and M.D.) examined A&E records of attendances every week between November 1985 and July 1986. This yielded 71 episodes (6% of the total number). A&E medical staff were asked to complete the data-sheet while dealing with each case. It consisted of a four-point rating of level of consciousness and a checklist of established risk factors in self-harm. Items chosen for the checklist were derived from established research findings [11,14–17], but included only those which we thought

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Table 1. Self-poisoning risk factors according to A&E management

Risk factors	Admitted		Not admitted		Percentage difference (95% confidence interval) between the two proportions
	Valid sample size No.	Risk factor present No. (%)	Valid sample size No.	Risk factor present No. (%)	
<i>From checklist</i>					
Recent physical illness	499	90 (18)	238	25 (11)	7 (2 to 13)
Expressed threat or left note	503	188 (37)	250	73 (29)	8 (1 to 15)
Past psychiatric contact	512	243 (48)	248	106 (43)	5 (-3 to 12)
Past psychiatric admission	490	136 (28)	236	51 (22)	6 (-0.4 to 13)
Married/cohabiting	628	212 (34)	292	84 (29)	5 (-1 to 11)
Previous overdose	540	259 (48)	252	109 (43)	5 (-3 to 12)
Living alone	572	109 (19)	269	54 (20)	1 (-5 to 6)
Not in paid employment	507	345 (68)	250	164 (66)	2 (-5 to 10)
<i>From case register</i>					
Past psychiatric contact	605	204 (34)	276	85 (31)	3 (-4 to 10)
Past psychiatric admission	605	101 (17)	276	32 (12)	5 (0.3 to 10)

might reasonably be collected by A&E doctors (Table 1). Demographic and clinical data for each episode were obtained from A&E case-records and completed data-sheets.

Three outcomes were examined:

- i Re-attendances due to a further self-poisoning episode were determined by scrutiny of records of A&E attendances.
- ii Deaths recorded as suicides or open verdicts were identified from coroner's records.
- iii Subsequent contacts with local psychiatric services were established by means of the Nottingham Psychiatric Case Register. This register has functioned in a service and research capacity for nearly 30 years, and all new and repeat contacts with psychiatric services in the city and certain county areas are recorded [18].

Outcomes were measured from the date of first attendance during the study period, but the duration of follow-up varied: suicide and contact with psychiatric services for 3 years; repetition of self-poisoning for 1 year.

Results

During the 9 months study period there were 1,096 attendances by self-poisoners at A&E; 104 (9%) episodes were repeat attendances of patients already included. There were therefore 992 separate patients, 600 women and 392 men (female to male ratio = 1.5). This study describes the management of *episodes* of self-poisoning ($n = 1,096$) unless stated otherwise.

Substances consumed were as follows: analgesics 50%, minor tranquillisers 34%, antidepressants 12%, other psychotropic drugs 8%, 'non-ingestible' substances 1%, and other drugs 22%. Many patients

Table 2. A&E management of self-poisoning

Patient management	Number of episodes ($n = 1096$)	
	No.	(%)
Admitted to medical ward	741	(68)
Admitted to psychiatric ward	20	(2)
Seen by psychiatrist and discharged from A&E	35	(3)
Seen by social worker and discharged from A&E	1	
Discharged with appointment for liaison psychiatrist	88	(8)
Discharged without any follow-up arrangements	184	(17)
Self-discharge against medical advice	23	(2)
Removed by police	4	

ingested more than one drug: 68% only one; 23% two; 6% three; and 3% four. Of the 1,096 episodes, 761 (69%) resulted in admission to hospital, almost all to medical wards, and 335 (31%) led to discharge from A&E (Table 2). Of those discharged by A&E staff, 26% (88/335) were given an outpatient appointment to return to the hospital for assessment by a registrar in liaison psychiatry. Thirty-seven patients (42%) failed to attend despite prompt appointments: 49% for the next day, 77% within two days, and 92% within three days.

Outcome

Each patient was followed up through the A&E attendance records for 12 months. Of the 992 patients, 116

Table 3. Repetition of self-poisoning according to A&E management at the first episode during the study

Patient management at first episode in study	Patients	
	Repeated No. (%)	Did not repeat No. (%)
Total patients in study	116 (12)	876 (88)
Admitted to medical ward	78 (12)	591 (88)
Admitted to psychiatric ward	3 (17)	15 (83)
Seen by psychiatrist or given appointment with liaison psychiatrist	16 (14)	98 (86)
Took own discharge against advice	4 (15)	22 (85)
Discharged by A&E doctor, no other arrangements made	15 (9)	150 (91)

Chi squared = 2.46; df = 4; $p = 0.7$

(12%) re-attended A&E due to self-poisoning within a year; of these, 16 (1.5%) repeated only twice but 11 (1%) more than twice. Repetition rate was almost identical for those admitted and discharged: of 687 patients admitted, 81 (11.8%) repeated, and of 305 discharged, 35 (11.5%) repeated—a relative risk of 1.02 (95% confidence interval 0.7 to 1.5). When repetition was examined according to management at first study attendance (Table 3) there were no clear differences, but patients whom the A&E doctors actively dis-

charged without follow-up arrangements had the lowest repeat rate.

During the three years of follow-up, 11 patients died and received a verdict of suicide or an open verdict at the Nottingham coroner's court. Of the 992 study patients, 881 lived in Nottingham Health District, and thus in the area of jurisdiction of the Nottingham coroner, and the following rates use that figure as a denominator. Four suicides had occurred during the first year (one-year rate 0.5%), five during the second year (two-year rate 1.0%), and two in the third (three-year rate 1.2%). Three of the 11 suicides occurred in patients who had been discharged from A&E during the study. Two of these deaths occurred more than a year after discharge; the other took place after only a month but it followed a further self-poisoning episode leading to attendance at A&E, which had resulted first in medical admission and then transfer to a psychiatric ward. Thus, none of the three deaths could plausibly have been prevented by medical admission at the time of A&E attendance. During the three years of follow-up, of the 881 Nottingham patients, suicide occurred in 1.3% (8/605) of patients admitted to hospital and 1.1% (3/276) of those discharged from A&E—a relative risk of 1.2 (95% confidence interval 0.3 to 4.6).

Subsequent psychiatric contact was determined for the 881 patients who lived in Nottingham Health District, the catchment area of the psychiatric case register. In the week following the first study-period attendance, more patients who had been admitted to hospital than were discharged from A&E became psychiatric inpatients or day patients (Table 4). This early

Table 4. Psychiatric care subsequent to first episode of study, according to A&E management.

	All patients No. (%)	A&E management		Relative risk (95% confidence interval)
		Admitted No. (%)	Not admitted No. (%)	
Number of patients living in case register area	881	605	276	
Psychiatric admission ^a within 3 years following first episode				
Total	159 (18)	124 (20)	35 (13)	1.6 (1.1 to 2.3)
Within 1 week	82 (9)	69 (11)	13 (5)	2.4 (1.4 to 4.3)
1 week to 1 year	52 (6)	38 (6)	14 (5)	
1-3 years	25 (3)	17 (3)	8 (3)	
Psychiatric outpatient contact during 3 years ^b following first episode				
Total	166 (19)	107 (18)	59 (21)	0.8 (0.6 to 1.1)
Within 1 month	86 (10)	53 (9)	33 (12)	0.7 (0.5 to 1.1)
1 month to 1 year	38 (4)	24 (4)	14 (5)	
1-3 years	42 (5)	30 (5)	12 (4)	

^a 11 of 159 admissions were to day care

^b Patients admitted to psychiatric care in the 3 years are excluded from outpatient values

excess was not found in the remainder of the three years of follow-up; psychiatric admissions after the first week were equally common in both groups. Of the patients who did not receive psychiatric inpatient or day care, the proportion who made outpatient (including domiciliary visit) psychiatric contact was similar throughout the follow-up period for patients who had been admitted to hospital or discharged from A&E.

Risk factors

A similar proportion of each sex was admitted, 69% of men and 70% of women. Younger patients were more likely to be discharged from A&E than older ones (Table 5); 34% of those aged under 35 years were discharged, but only 17% of those over 55 years. Recent physical ill-health, expressing a threat or leaving a note, and a record of previous psychiatric admission were clearly more prevalent among those admitted (Table 1). For all factors that showed any kind of trend, a higher proportion of admitted patients exhibited the risk factor. Medical staff in A&E co-operated actively throughout the study, but there was an inevitable shortfall in their completion of checklist items. For this reason, the valid sample size for each risk factor is included in Table 1; the median rate of responses to risk factors in the total sample was 71%. As we anticipated, completion was lower for patients attending during the night, and for those with impaired consciousness, but a similar proportion of checklists was filled in for admitted and discharged patients.

Discussion

In Nottingham, the great majority of self-poisoning patients admitted to hospital are first seen in A&E. The age-specific rates of self-poisoning [19,20], calculated from these A&E attendances, are close to or substantially higher than the best available estimates from elsewhere [21], suggesting reasonable completeness of the sample. We do not believe that the investigation itself had a serious influence on A&E management. The proportions of patients discharged four years earlier in a retrospective pilot study [9], and in a baseline check on the three months prior to this project, were very close to that seen here.

A retrospective study in London in the 1970s [11] found that patients discharged from A&E had a higher repeat rate than those admitted and assessed by a psychiatrist. Two later prospective studies have, however, suggested that the outcome for patients discharged is no worse. In Cambridge, risk and outcome were found to be similar in discharged and admitted patients following mild self-poisoning [12]. However, many subjects were also seen by medical registrars with experience and training in assessment of self-harming patients. A randomised trial in A&E of admission and discharge of self-harming patients was recently com-

Table 5. Age of self-poisoning patients according to attendances at A&E.

Age (years)	Number of attendances	A&E management	
		Admitted No. (%)	Not admitted No. (%)
<i>All ages</i>	1,096	761 (69)	335 (31)
14-24	436	289 (66)	147 (34)
25-34	280	184 (66)	96 (34)
35-44	187	131 (70)	56 (30)
45-54	78	61 (78)	17 (22)
55-64	51	41 (80)	10 (20)
65+	58	49 (84)	9 (16)
Not recorded	6	6	-

Chi squared = 15.74; df = 5; $p = 0.008$.

Medians (interquartile range): admitted 29 (21-41); not admitted 27 (20-37).

Difference in medians (95% confidence interval) 2 (1 to 4)

pleted in York [13], in which the outcome was similar in the two groups. Study numbers were, however, small, and only 15% of attenders were considered suitable for random assignments, well below the proportion returning home from some A&E units.

In our investigation, a number of factors associated with *risk* in self-harming patients were less prevalent among the discharged group, and no risk factors were noticeably more prevalent. However, measures of *outcome* were largely similar in those admitted to hospital and those discharged. The only 'adverse' outcome that clearly occurred with greater frequency among patients admitted to hospital was admission to a psychiatric unit within the first week—usually as the result of a psychiatric consultation arising from the self-poisoning event.

Clinical and research implications

This audit was designed to intrude as little as possible into A&E practice. For that reason there were restrictions on the nature and completeness of data collected and outcomes measured. Nevertheless, results indicated that patients who returned home had lower risk but similar outcome. Because their outcome was no worse, we found no reason for urgent change in A&E discharge practice. We draw three further conclusions relevant to future clinical practice.

First, the large proportion of patients discharged indicates a need for training and supervision of A&E staff. Second, one effect of discharge of lower-risk patients is to concentrate higher risk among those admitted to medical wards; staff of all disciplines who assess inpatients need training and supervision in psychiatric and social assessment appropriate to this level of patient risk. If training opportunities or time avail-

able for junior medical staff to assess patients are inadequate the task may be better fulfilled by designated social workers, nurses or psychiatrists with sufficient time, experience and supervision. Third, the finding that the lower-risk discharged group do not have a better outcome needs explanation, and requires examination in a further study. Perhaps brief admission of lower-risk patients is of some benefit. A short time in hospital, followed by psychosocial assessment and further interventions as required, may indeed be therapeutic. We are undertaking an examination of repetition and suicide rates in another A&E department from which low-risk patients are admitted to a short-stay ward and assessed by experienced liaison psychiatry staff before discharge.

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