

Changes in the pattern of deliberate self-poisoning presenting at Craigavon Area Hospital: 1976, 1986 and 1991

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SUMMARY

Deliberate self-poisoning presenting at Craigavon Area Hospital in 1991 was examined and compared to the years 1976 and 1986. Self-poisoning has not declined over the 15 year period 1976-1991. The reduction in the use of benzodiazepines, and increase in paracetamol, previously reported, continues. Possible reasons for this are examined, in relation to local and national drug prescribing.

INTRODUCTION

Deliberate self-poisoning is defined as a deliberate, non-fatal drug overdose, done in the knowledge that it is potentially harmful and that the amount taken is excessive.¹ It is a major public health problem, being the second most common cause of emergency medical admissions of men, and the most common cause of female admissions.²

Monitoring of deliberate self-poisoning is important, as after a suicide attempt there is a considerable risk of eventual suicide. During the year after a suicide attempt, about 1% of adults die by suicide, and the risk remains increased several years later.^{3,4} If prevention of suicide is to be achieved, this high-risk group will require targeting, and interventions which reduce the lethality of their chosen methods of self-harm should be considered. In Northern Ireland 18% of suicides occur by self-poisoning with drugs.⁵

Inter-regional variations in patterns of self-poisoning are known to exist^{6,7} as are changes in pattern over time and in age and sex distribution.^{8,9,10} An ongoing assessment of self-poisoning presenting at this hospital in 1976 and 1986 has been reported previously,¹¹ and this study examines the phenomenon in the same area in 1991 and compares it with the previous years. Changes in frequency of presentation to hospital may be due to a true fluctuation in incidence or to altered referral patterns by general practitioners. We have identified general practitioner management of deliberate self-poisoning in this

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area. It has also been assumed that drugs used for deliberate self-poisoning reflect those currently available,¹² and that successful suicides are often related to the lethality of the drug. We have related our experience of deliberate self-poisoning to both local and national drug use, where such data exists.

METHODS

Craigavon Area Hospital is the only hospital serving three local district council areas which have a stable, mixed urban/rural population which has grown from 146,000 to 160,000 between the years 1976 - 1991.

The accident and emergency department records for 1991 were examined retrospectively. All cases of self-poisoning were identified and relevant medical and psychiatric notes surveyed. The following categories were excluded: age under ten, the use of alcohol alone, and accidental self-poisoning (as defined by the relevant medical officer). 289 cases of deliberate self-poisoning by 252 individuals were identified, and notes were available in all cases. Repeat presentations (two or more episodes by three individuals during 1991 were not excluded, to allow for comparison with the 1976 and 1986 figures.

The 95 general practitioners whose catchment areas are served by this hospital were surveyed by postal questionnaire to ascertain whether their tendency to refer cases of self-poisoning had changed over the last 15 years.

Quantities of the relevant drugs prescribed, or sold over the counter, in the Southern Health and Social Services Board area (where such data existed) were compared with their frequency of use in overdose in the years studied. This data was provided by the Drug Utilization and Research Unit, Department of Therapeutics, The Queen's University of Belfast, by courtesy of Dr Hugh McGavock and Miss Elaine Milligan.

Analysis was by the SPSS (Statistical Package for the Social Sciences) computer package, using chi-squared tests where appropriate.

RESULTS

Demographic data

There were 289 recorded episodes of deliberate self-poisoning in 1991 (1.81/1,000 of population), compared to 228 (1.48/1000) in 1986, and 265 (1.82/1,000) in 1976. These figures allow for the local population increase 1976-1991; there was no statistically significant difference in the years in question. The sex ratio remained unchanged at approximately 1.5 female: 1 male in each of the three years studied.

While the 1986 results showed a reduction in modal age of those self-poisoning compared with 1976 (from 30-40 years to 10-20 years of age), this trend was not continued in 1991 (modal age 20-30 years).

Drug and alcohol use

The drugs taken in deliberate self-poisoning are shown in Table 1. The use of benzodiazepines alone has shown a marked fall, from 40.8% in 1976 to 14.5% in 1991 ($X^2=48.25$, $p<0.001$), as have the total number of cases where benzodiazepines were used either alone or in combination, from 169 in 1976 to 68 in 1991 ($X^2=76.12$, $p<0.001$). Paracetamol has replaced the

benzodiazepines as the single most commonly used drug, both alone and in combination with other drugs. Alone, its use has increased from 0.8% of cases in 1976 to 17.3% in 1991 ($X^2=44.72$ $p < 0.001$). When combinations of drugs including paracetamol are added, the number of cases has increased from 31 in 1976 to 93 in 1991 ($X^2=33.54$, $p < 0.001$).

TABLE 1
Drugs used for deliberate self-poisoning

	1976 n=265	1986 n=228	1991 n=289
Benzodiazepines	108 (40.8%)	61 (26.8%)	42 (14.5%)*
Paracetamol	2 (0.8%)	21 (9.2%)	50 (17.3%)*
Aspirin	17 (6.4%)	9 (3.9%)	18 (6.2%)
Neuroleptics	5 (1.9%)	2 (0.9%)	10 (3.5%)
Antidepressants	17 (6.4%)	9 (3.9%)	18 (6.2%)
Anti convulsants	5 (1.9%)	3 (1.3%)	4 (1.4%)
Anti inflammatory	2 (0.8%)	12 (5.3%)	13 (4.5%)
Combination without psychotropic drugs	7 (2.6%)	32 (14.0%)	43 (14.9%)
Combination with psychotropic drugs	53 (20.0%)	50 (21.9%)	50 (17.3%)
Unknown, others	49 (18.4%)	29 (12.8%)	33 (11.4%)

* $p < 0.001$

No statistically significant difference was noted in the use of anti-depressants, salicylates, or neuroleptic drugs from 1976 to 1991. There had been a statistically significant increase in the use of non-steroidal anti-inflammatory drugs from 1976 to 1986, alone and in combination ($X^2=20$, $P < 0.001$), but there was no further increase in 1991. Alcohol had also been ingested by a significant, unchanging (36%-38%) minority of patients in each of the three years.

Outcome

The number of patients discharged without follow-up has increased from 17% to 48% ($X^2=58.52$, $p < 0.001$); concurrently the number admitted to the psychiatric unit fell from 45% in 1976 to 18% in 1991 ($X^2=71.99$, $p < 0.001$). There was little change in the number of patients followed up in the out-patient department, or of those who left the hospital contrary to advice.

TABLE 2
Outcome of patients

	1976 n=265	1986 n=228	1991 n=289
Discharged/no follow-up	46 (17.4%)	86 (35.5%)	140 (48.4%)
Out patients	43 (16.2%)	48 (21.1%)	53 (18.3%)
Admitted psychiatric unit	120 (45.3%)	36 (15.8%)	52 (18.0%)
Left contrary to advice	31 (11.7%)	50 (22.0%)	41 (14.2%)
Unknown	25 (9.4%)	8 (3.5%)	3 (1.0%)

General practitioner referral patterns

79 replies (83% response rate) were received to the postal questionnaire. Of these, 85% said there had been no changes in the referral pattern, 13% said they were more likely to refer and 3% less likely to refer cases to hospital. Several practitioners commented that referrals were always made, because of the difficulty in ascertaining quantities and types of drugs ingested.

Drug prescribing patterns

In view of the suggestions that patterns of self harm alter with availability of method,¹² general practice prescribing figures for benzodiazepine drugs were obtained from the Northern Ireland Drug Utilisation Research Unit (table 3). The data is for the Southern Health and Social Services Board area (which includes the area served by Craigavon Area Hospital) and is for 1981 and 1991 only; no comparable data exists for 1976.

TABLE 3

General practice prescriptions of hypnotics, and of sedatives/tranquillisers containing benzodiazepines in the Southern Health and Social Services Board area (data from the Drug Utilization Research Unit QUB)

<i>Preparations containing benzodiazepines</i>	1981	1991	% change
Hypnotics	83,951	103,444	+23.2%
Sedatives/ tranquillisers	146,298	105,356	-28% [^]
TOTAL:	230,249	208,800	-9.3%

There has been an overall fall of 9% in benzodiazepine prescriptions. These figures cannot be directly compared with the figures of self-poisoning at Craigavon Area Hospital as they come from different populations, albeit largely overlapping. They do however provide an indication that the decline in use of benzodiazepines to self-poison appears greater than the decline in their availability.

DISCUSSION

This study is the second in a planned series¹¹ to look at changes in the pattern of deliberate self poisoning at five yearly intervals in a stable population. The data confirm earlier studies which identified a decrease in the rate of self poisoning in the first half of 1980's,^{6,9} followed by a reversal of the trend in the second half of the decade.¹⁴ There has been no significant trend in the age of those who self-poison, nor any change in the sex ratio, which remains at approximately 1:1.5, male: female, although other studies have noted a narrowing of this difference.¹⁵

General practitioner referral patterns could significantly affect the detected incidence of deliberate self-harm,¹⁶ but our postal survey suggests that this is not the case in this area.

The use of paracetamol as a self poisoning agent has continued to increase, and that of benzodiazepine has fallen.^{6,17} Changes in the usage of drugs might reflect changes in their availability — this was thought to be the primary reason for the fall in barbiturate-induced fatalities in the 1960's and 1970's.¹⁸ The reported death rate from paracetamol poisoning has remained fairly constant in Northern Ireland, varying from two to five deaths per year from 1984 - 1989.⁵ This may not record the deaths of a few very severely ill patients transferred from Northern Ireland to tertiary referral centres in England. The death rate in England and Wales from paracetamol poisoning alone rose from 105 to 210 per year between 1975 and 1991.¹⁹ This data did not include those deaths caused by a combination which included paracetamol, because of the difficulty in attributing death in these cases to poisoning by a single agent.

Paracetamol and paracetamol-containing compound tablets in circulation in England and Wales have increased from 2.85 billion in 1973-74 to 4.8 billion in 1991-92¹³ — equivalent to a 4% annual increase. Comparable figures for Northern Ireland do not exist. The use of paracetamol in overdose has increased much more rapidly — by 86%, for example, in the period 1986 to 1991. Clearly, while increased availability of paracetamol may play a part in its use, other influences exist. The present trend may also be a consequence of a decrease in ready availability of other drugs, such as benzodiazepines.²⁰ Fashions in patterns of self poisoning may also be significant — perhaps influenced in part by media representation of self poisoning,^{22,23} though this has been disputed.²⁴

Total benzodiazepine drug prescriptions in this area fell by 9% from 1981 - 1991; during 1986 - 1991, there was a 31% fall in benzodiazepine use in self-poisoning. The increased numbers of prescriptions of benzodiazepine-containing hypnotic drugs may reflect the increase in the elderly population (to whom they are frequently prescribed) who are less likely to self poison. The number of benzodiazepine-containing sedative/tranquilliser prescriptions has fallen by

over one quarter. Although there are increasingly negative attitudes to benzodiazepines by both doctors and patients,^{20,21} we do not know if the number of tablets per benzodiazepine prescription has changed. While the frequency of deliberate self-poisoning with either paracetamol or benzodiazepines does appear to increase or decrease in relation to the availability of these drugs, the rate of change of self-poisoning appears to be much greater, suggesting that other factors are involved.

The outcome of these patients has also changed. There is an increasing tendency to discharge patients without follow-up, perhaps mirroring the changes in diagnoses by junior staff – away from classifying cases as neurotic illness and towards identifying situational crises. Because of the circumspection required in interpreting diagnoses, recorded principally by junior staff, we have not analysed this data in detail.

The principal reservation of this study is its design – by retrospective case note review. Nevertheless all notes were available, and it is unlikely that the quality of some of the information (for example, the drug used as the poisoning agent) would be greatly improved by a prospective study. The central findings of this study remain valid, that the decline in self poisoning seen in the early 1980's has not continued, and that there has been an increase in the use of a more toxic agent-paracetamol. A potentially less hazardous paracetamol-based analgesic, containing methionine, is commercially available. Continued monitoring of the epidemiology of deliberate self-poisoning and suicide, and action to reduce the availability of the more lethal compounds, may help to achieve the government's stated aim of a reduction in the suicide rate by at least 15% by the year 2000.²⁵

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