

Does the availability of prescribed drugs affect rates of self poisoning?

IAIN K CROMBIE

PHILIP McLOONE

Summary

The trends in self-poisoning rates and in rates of prescribing of the major drug groups were compared. Over the period 1981–91, barbiturate prescribing and self poisoning both fell by 80%; for antidepressants, prescribing increased by over 40% and self poisoning by 30%; for antipsychotics, both rose by 30%; for benzodiazepines, poisoning fell by 30% and prescribing by 20%. Even for analgesic drugs, which are also available over the counter, there was a correspondence between changes in self poisoning and prescribing. The availability of prescribed drugs is directly related to their use for self poisoning. Restricting the availability of these drugs is a possible preventative strategy, although further research on this is needed.

Keywords: drug prescribing; self poisoning; Scotland; hospitalization.

Introduction

IN Scotland, the number of hospital admissions for deliberate self poisoning increased dramatically between the late 1980s and early 1990s.¹ The different drug groups used showed different trends.² An important question is whether these trends are related to changes in the frequency of prescribing of these drugs. Several studies have suggested that the availability of a method affects its use for suicide.^{3,4} This paper examines whether recent trends in drug prescribing reflect trends in deliberate self poisoning.

Method

Numbers of prescriptions for selected drugs dispensed annually between 1981 and 1991 were obtained from the Management Information and Research Centre of the Pharmacy Practice Division. Data on all patients aged 15 years and over who were discharged from hospital with a diagnosis of deliberate self poisoning (codes E950, E850 in the ninth revision of the *International Classification of Diseases*) were extracted from the 1981 to 1993 linked hospital episode database created by the Information and Statistics Division of the National Health Service (NHS) in Scotland.⁵ Yearly numbers of prescriptions and self-poisoning discharges were expressed as a percentage of their 1981 value. No statistical tests have been used but, as the study group comprises the population of Scotland, all trends are highly significant.

Results

Trends in self poisoning vary among drug groups: paracetamol

and opiates have risen dramatically, antidepressants and anti-psychotic drugs showing a smaller rise; aspirin, barbiturates and benzodiazepines have all fallen (Table 1). The annual number of prescriptions for these drugs have also changed considerably, paralleling the self-poisoning trends.

Figure 1 shows annual numbers of both prescribing and self poisoning expressed as a percentage of their number in 1981. The decline in barbiturate self poisoning mirrors that of its prescribing figures: both fall to about 20% of their 1981 value. The trends for benzodiazepine prescribing and self poisoning also move approximately together, although by 1991 the fall for self poisoning exceeded that for prescribing. In contrast, antidepressants, antipsychotics, and opiates had almost identical increasing trends in rates of prescribing and self poisoning (data not shown). Paracetamol and salicylate also had similar trends in prescriptions and self-poisonings, although the relationship was weaker (data not shown).

Discussion

This study has shown that there are divergent trends in self poisonings from different drugs in Scotland. These are closely mirrored by the trends in the prescribing of these drugs. The exception to this finding is that the rates of self poisoning by paracetamol and opiates are increasing more rapidly than their prescribing frequencies.

These data have limitations. They are based on aggregated figures for men and women and for all age groups. This is necessary because prescription data for Scotland are not subdivided by age or sex. The most likely effect of this would be to weaken the observed association between prescribing and self poisoning.

A more serious constraint is that over-the-counter sales of paracetamol and aspirin substantially overwhelm the drugs provided by prescription. It is possible that prescribing rates and other sales parallel each other. An alternative explanation is that prescribed analgesics are more commonly used for self poisoning than over-the-counter drugs.

The results strongly support the hypothesis that availability influences the choice of drug used for self poisoning. The relationship reported here is much stronger than that recently reported for England and Wales,⁶ but Charlton *et al* combined sedatives, tranquillizers, and hypnotics in their study, and these drug groups show divergent prescribing trends in this analysis.

This study raises the question of restricting the availability of these drugs. There are plans to limit the pack sizes of aspirin and paracetamol,⁷ but will this lead to increased use of other analgesics? There may be more scope for restricting access to prescription only medicines. It seems unlikely, for example, that individuals denied benzodiazepines would have ready access to antipsychotic drugs or opiates. However, restrictions on the availability of these drugs must balance the therapeutic benefit received by many against inappropriate use by a few. Before action can be taken, the circumstances that lead to self poisoning need to be investigated in more detail.

References

1. Stark C, Smith M, Hall D. Increase in parasuicide in Scotland. *BMJ* 1994; **308**: 1569-1570.

I K Crombie, PhD, reader, Department of Epidemiology and Public Health, Ninewells Hospital and Medical School, Dundee. P McLoone, BSc, research fellow, Public Health Research Unit, University of Glasgow.

Submitted: 7 April 1997; accepted: 10 March 1998.

© British Journal of General Practice, 1998, **48**, 1505-1506.

Table 1. Numbers of deliberate self poisoning discharges and numbers of prescriptions by drug group in 1981 and 1991.

Drug	No. of prescriptions (1000s)		No. of self poisonings	
	1981	1991	1981	1991
Barbiturates	168	17	345	63
Benzodiazepines	2974	2327	2616	1679
Antidepressants	693	999	860	1137
Antipsychotics	247	326	295	396
Opiates	302	486	169	406
Paracetamol ^a	1580	3005	866	2941
Salicylates	356	305	626	486

^aSelf poisonings refer to aromatic analgesics.

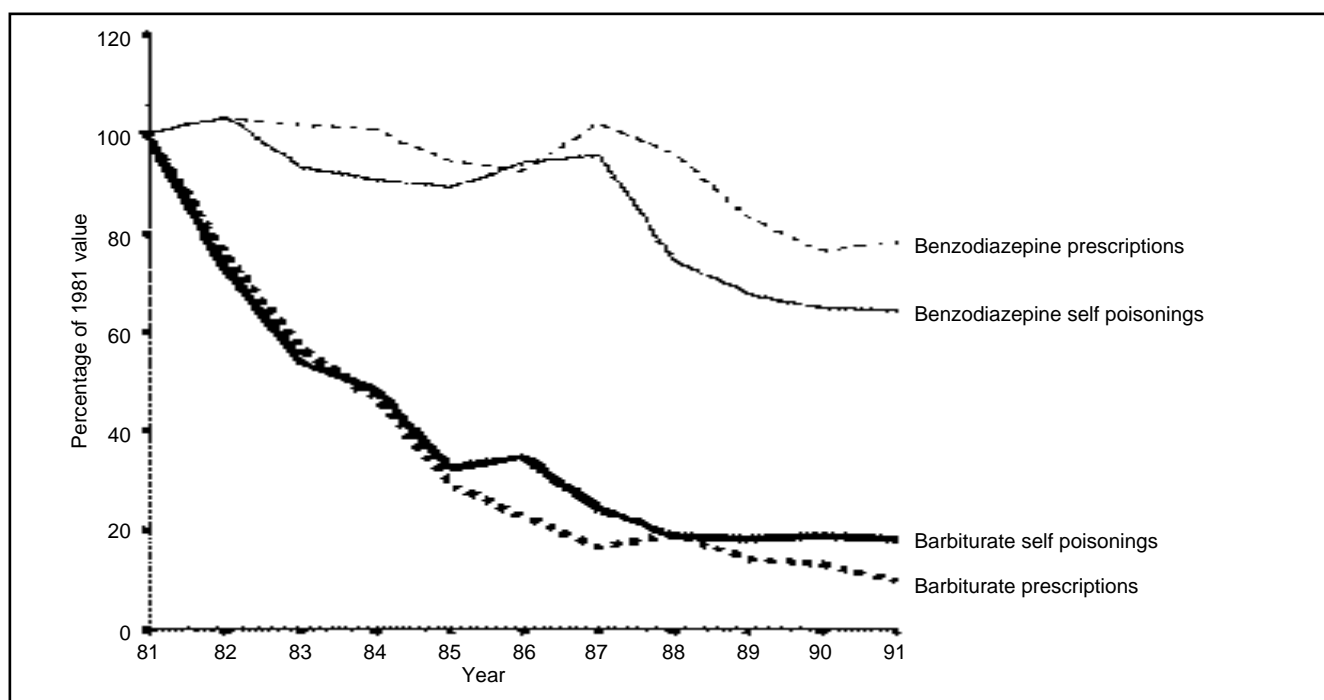


Figure 1. Barbiturates and benzodiazepines: trends in numbers of self poisoning discharges and numbers of prescriptions (expressed as a percentage of their 1981 value).

- McLoone P, Crombie IK. Hospitalisation for deliberate self-poisoning in Scotland from 1981 to 1993: trends in rates of types of drugs used. *Brit J Psych* 1996; **169**: 81-85.
- Farmer RDT. Suicide by different methods. *Postgrad Med J* 1979; **55**: 775-779.
- Low AA, Farmer RDT, Jones DR, Rohde JR. Suicide in England and Wales: an analysis of one hundred years of data, 1876-1975. *Psychol Med* 1981; **11**: 359-368.
- Kendrick S, Clark J. The Scottish record linkage system. *Health Bulletin (Edinburgh)*. 1993; **51**: 72-79.
- Charlton J, Kelly S, Dunnell K, *et al*. Suicide deaths in England and Wales: trends in factors associated with suicide deaths. *Population trends* 1993; **71**: 34-42.
- Anonymous. Paracetamol to be sold in smaller packs. *BMJ* 1997, **315**: 564.

Acknowledgements

The drug prescribing data were kindly supplied by the Management Information and Research Centre of the Pharmacy Practice Division. The Public Health Research Unit and IKC are supported by the Chief Scientist Office of the Scottish Office Home and Health Department. The opinions and conclusions in this paper are not necessarily those of this organization.

Address for correspondence

Dr Iain K Crombie, Department of Epidemiology and Public Health, Ninewells Hospital and Medical School, Dundee DD1 9SY.