Psychotropic drug prescribing: a self-audit

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SUMMARY. In my 1971 survey of psychotropic drugs I suggested that the variety of psychotropic drugs and the use of barbiturates and minor tranquillizers ought to be reduced. Five years later these objectives had been achieved.

A comparison is made with the national prescription rate in the main categories of psychotropic drugs. The prescription rate of antidepressants was appreciably higher but that of hypnotics and tranquillizers was considerably lower. The net ingredient cost of the drugs prescribed was 33 per cent of the rate for England.

Hospital referrals, suicides, and overdoses are related to the national figures.

Introduction

DURING 1971/2, I carried out a 12-month survey of my prescribing of psychotropic drugs (Wilks, 1975) to find out what I was actually doing with a view to possible improvement. My main conclusions were that the prescribing of a large variety of drugs, many of which were necessarily unfamiliar, was unsatisfactory and should be restricted; that the use of barbiturates should be reduced substantially; and that minor tranquillizers should be prescribed less readily.

Five years later it seemed desirable to see if these aims had been realized. In addition, I tried to compare my personal prescribing habits and consequences with those of the average general practitioner.

Method

Since no prescriptions are given for longer than three months' treatment and I am not aware of any seasonal variation in my psychotropic prescribing, I assumed that by recording the prescribing during a three-month period and multiplying by four an approximate comparison could be made with my earlier 12-month survey.

During August, September, and October 1976 a notebook was kept with pages allocated to each letter of the alphabet. The names of all patients prescribed psychotropic drugs were entered, with the name, strength, and number of tablets of each drug prescribed. As it is a dispensing practice, all prescriptions were retained to make sure that there were no omissions. At the end of the three-month period the number of prescriptions and number of tablets were tabulated in their categories and multiplied by four.

Using the *MIMS* of September 1976 or, when appropriate, the 1976 *Drug Tariff* the cost of each drug prescribed was calculated and multiplied by four for comparison with the total net ingredient cost of prescriptions in England for 1975 (DHSS, 1976). The DHSS informed me (personal communication) that the *MIMS* prices and 'net ingredient cost' in the tables were identical. There were 45,560,127 people on prescribing lists in 1975 so that it was possible to calculate the number of prescriptions and net ingredient cost of each class of drugs per 1,000 patients.

The recording of hospital referrals and of cases of overdose admitted to hospital has been continued.

Results

Drugs prescribed

The number of different preparations prescribed was reduced from 25 in 1971 to 15 in 1976 (Table 1).

The number of barbiturates prescribed was reduced by 80 per cent but this was partially offset by an increase in the number of nitrazepam (Mogadon) tablets given. Nevertheless, there was a reduction in the total number of hypnotic tablets, both barbiturate and non-barbiturate, of 62 per cent.

The number of minor tranquillizers was reduced by 35 per cent and, apart from the introduction of lorazepam (Ativan) 2·5 mg, there was also a decrease in the doses used.

There was a 23 per cent reduction in the number of major tranquillizers but this was due to a fortuitous change in the type of patient presenting rather than a change in prescribing policy. Again, there were no prescriptions for appetite suppressants or stimulants.

In contrast, the number of antidepressants rose by 34 per cent, more than half of this rise being accounted for by lithium. In the 1971 survey the few patients on this drug were controlled by the hospital and it was therefore

Table 1. The drugs and number of tablets prescribed*

	mg	March 1971-February 1972	(July-September 1976) x 4	Percentage change	
Barbiturates					
'Sodium amytal'	200	155			
	60	2,377	120		
'Seconal'	100	240	80		
	50	620			
'Nembutal'	100	335			
Phenobarbitone	60	1,398			
	30	4,300	1,920		
Phenobarbitone and theobromine		420			
'Carbrital'		590			
Total		10,435	2,120	*−80*	
'Mandrax'		290			
'Mogadon'	5	1,828	2,640		*−62*
'Tricloryl'		35			
Total		2,153	2,640	*+23*	
Minor tranquillizers					
'Librium'	10	3,822	600		
	5	4,273	2,900		
'Valium'	5	3,489			
	2	3,319	4,600		
'Ativan'	2.5		1,620		
Total		14,903	9,720	*−35*	
Major tranquillizers					
'Fentazin'	4	1,350	120		
	2	1,362	440		
'Largactil'	50	440	1,880		
	25	2,977	2,320		
'Melleril'	50	720			
	25	82			
	10	390			
'Stelazine'	5	120			
	2	62			
'Stemetil'	25	90			
	5	1,042	2,464		
'Serenace'	0.5	740			
Total		9,375	7,224	*−23*	
Antidepressants					
'Tryptizol'	25	23,252	29,160		
	10	1,459	1,984		
'Tofranil'	25	2,732	4,288		
	10	14	592		
'Lentizol'	50	30			
'Pertofran'	25	2,350			
'Triptafen'	forte	150			
	DA	100			
'Surmontil'	25	100	20		
'Nardil'	15	1,968			
'Parstelin'		250			
'Parnate'	10		800		
'Camcolit'	250		6,528		
Total		32,265	43,372	*+34*	
All classes		69,131	65,076	*−6*	

*Although nearly all the drugs are listed by their trade names, a high proportion were prescribed in non-proprietary form.

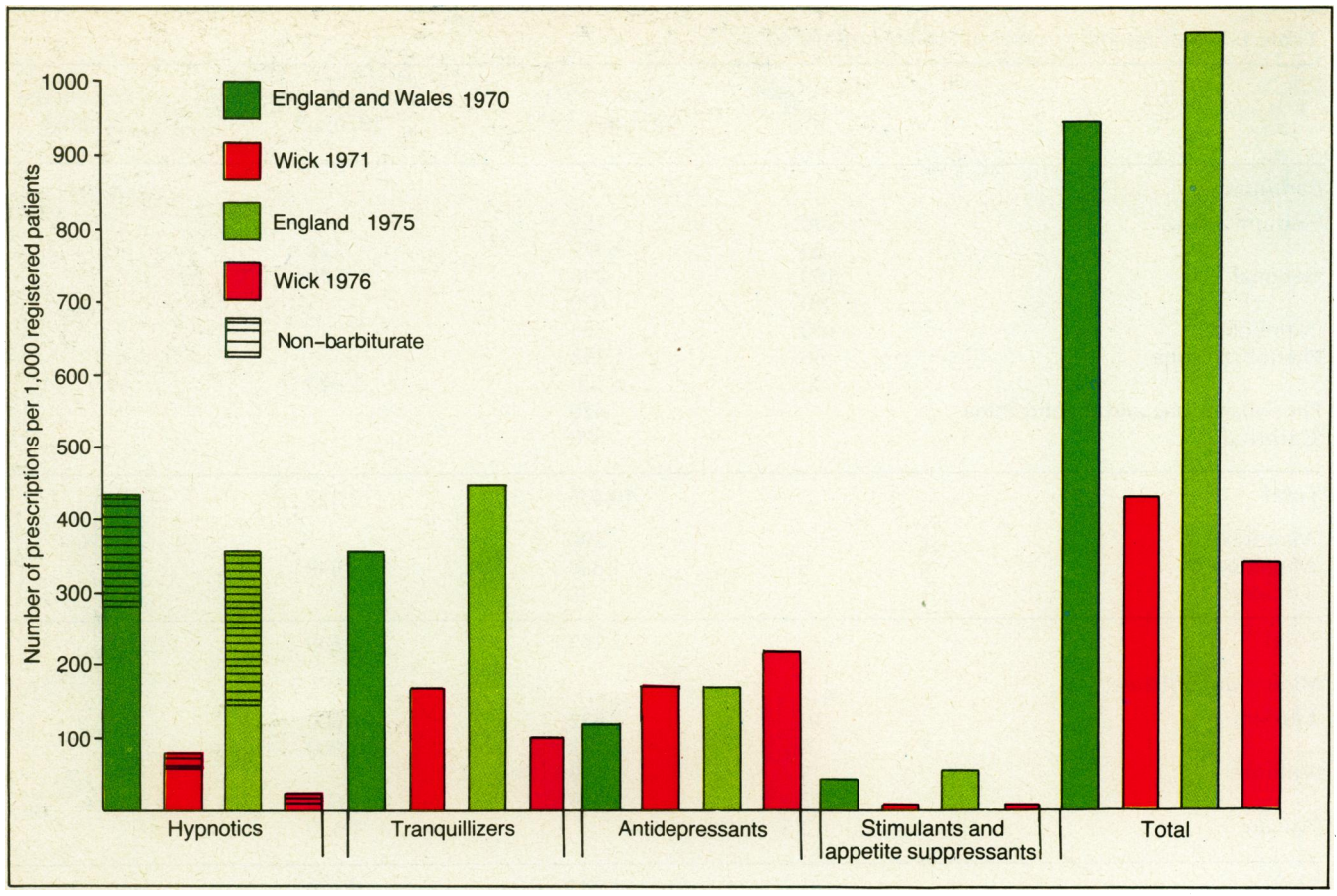

Figure 1. *Number of prescriptions per 1,000 registered patients in one year—national (1970 and 1975) and Wick (1971 and 1976) rates compared.*

Table 2. Number of prescriptions per 100 registered patients compared with the national rate (DHSS, 1976).

	England and Wales 1970	Wick 1971	England 1975	Wick 1976
Hypnotics				
Barbiturate	276	65 *(24)*	148	10 *(7)*
Non-barbiturate	152	21 *(14)*	214	15 *(7)*
Tranquillizers	366	174 *(48)*	451	98 *(22)*
Antidepressants	114	178 *(156)*	174	222 *(128)*
Stimulants and appetite suppressants	45	0	57	0
Total	953	438 *(46)*	1,044	345 *(33)*

Figures in brackets represent the percentage of the national rate.

excluded, whereas currently they are all under my supervision which includes regular monitoring of the blood levels.

Number of prescriptions

The changes in the number of prescriptions (Figure 1; Table 2) reflected the changes in the number of tablets prescribed, the prescription rate falling from about half the national rate to a third. The greatest disparity was in the prescribing of hypnotics which fell to seven per cent of the national rate largely owing to the deaths of old regular sleeping tablet habitués and my refusal to recruit others to replace them. Again, the prescription rate of antidepressants was substantially higher than the national average; probably some patients took these drugs in lieu of hypnotics. These drugs accounted for 64 per cent of my prescriptions in 1976 compared with the national proportion of 17 per cent (Table 3).

Cost of the drugs

In the classes of psychotropic drugs analysed there was a close similarity in the average net cost per prescription between my 1976 survey and that of England in 1975: £0·49 and £0·47 respectively. This is reflected in the fact that both the number of prescriptions and the net ingredient cost per thousand patients amounted to 33 per cent of the national figures (Table 4). Although the prescription rate of antidepressants was higher than the

Table 3. Number of prescriptions and percentages (in brackets) of all psychotropic prescriptions per 1,000 registered patients by class compared with the national prescribing rate (DHSS, 1976).

	England 1975	Wick 1976
Hypnotics		
Barbiturate	148 *(14)*	10 *(3)*
Non-barbiturates	214 *(21)*	15 *(4)*
Tranquillizers	451 *(43)*	98 *(28)*
Antidepressants	174 *(17)*	222 *(64)*
Stimulants and appetite suppressants	57 *(5)*	0
Total	1,044 *(100)*	345 *(100)*

national average the costs were lower, presumably because amitriptyline, imipramine and lithium, all cheap drugs, accounted for most of the prescriptions in 1976.

Hospital referrals

During the period June 1969 to May 1979 there were 16 outpatient referrals and 11 admissions to psychiatric departments, the mean number of my patients being 2,324. This is equivalent to an annual outpatient referral rate of 0·7 patients per thousand compared with the rate of 4·1 for England and 3·5 for the South Western Region in 1975. The mean annual inpatient admission rate was 0·5 per thousand compared with 3·7 for England in 1974.

The treatment of patients in general practice is very cheap relative to the cost of treatment in hospital. In 1974/75 the cost of general medical services in Great Britain was £250 million or £5·48 per registered patient. In 1973/4 the cost per inpatient week ranged from £92 to £154 and per outpatient attendance from £4 to £6 (DHSS, 1976) whereas attendance at a general practitioner's surgery cost the Exchequer on average about £1·68, apart from the cost of the prescription (calculations derived from OHE, 1979 and OPCS, 1980).

Overdoses and suicides

In 1971 a series of measures were started in the practice to try to reduce the incidence of overdose (Wilks, 1975) and these have been maintained. Between 1966 and 1974 there were 11 overdoses by nine patients, one of them fatal, representing an annual incidence of 0·5/1,000 patients (Table 5).

From 1975 to 1979 there have been three further cases of overdose requiring admission to hospital, equivalent to 0·3/1,000 patients annually. A husband noting the absence of libido in his depressed wife wrongly assumed that she had a lover and took her amitriptyline (Tryptizol) tablets. Two women took simple analgesic tablets on the spur of the moment, one while she was away on holiday.

Table 4. Net ingredient cost of psychotropic drugs per 1,000 registered patients compared with the national average (DHSS, 1976).

	England and Wales 1970	England 1975	Wick 1976
	£	£	£
Hypnotics			
Barbiturate	39	35	1 *(3)*
Non-barbiturate	59	109	15 *(14)*
Tranquillizers	208	208	56 *(27)*
Antidepressants	109	200	133 *(67)*
Stimulants and appetite suppressants	45	67	0
Total	£460	£619	£205 *(33)*

Figures in brackets represent percentages of the national rate.

Table 5. Summary of outcome compared with national figures in annual rates per 1,000 patients.

	England	Wick
Suicide	0.328 (1975)	0.0324 (1951-1979)
Overdose admissions	1.2-1.8	0.5 (1966-1974)
		0.3 (1975-1979)
Hospital referrals		
Outpatients	4.1 (1975)	0.7 (1969-1979)
Inpatients	3.7 (1974)	0.5
Net ingredient cost	£619 (1975)	£205 (1976)

Sources: *Royal College of General Practitioners (1977).
**Jones (1977).

Jones (1977) noted a rise in admissions for self-poisoning to the Sheffield hospitals from under 50 in 1955 to 747 in 1970 and 1,085 in 1975. He estimated that in the United Kingdom there are over 100,000 admissions yearly which is equivalent to 1·8/1,000 population.

There was one suicide. A retired business man had a myocardial infarction followed by a series of complications. Soon after the onset of his illness he asked my opinion as to his chances of resuming an active life and told me that he would not be prepared to live on as an invalid. Some months later, when he was obviously progressively deteriorating, he shot himself.

During the period 1968 to 1974 the national suicide rate fell by 16 per cent to 3·28/100,000 population. During my 28 years in this practice there have been two suicides, giving an annual rate of 3·24/100,000 population but the figures are very small.

Discussion

Each doctor has his idiosyncratic prescribing habits which change almost unconsciously over a period of time. Some of this change is due to reading, attending lectures, or the opinions of colleagues, while the sales promotion of drug companies has proved influential enough to justify their high cost.

There is no reason why these prescribing habits should not be changed positively as a deliberate policy. For example, Wells (1973) eliminated his prescribing of barbiturates by substituting nitrazepam (Mogadon), at the same time reducing regular hypnotic takers by 41 per cent. Clift (1972) reduced the long-term taking of hypnotics from 32 per cent to eight per cent and Lamberts (1976) showed that four partners could arrive at a common policy to prescribe tranquillizers sparingly. In each case an initial self-audit was conducted, a policy of change was decided, and a further audit showed that the objective had been achieved.

The survival of the National Health Service depends on the more effective use of limited resources. It could be postulated that the cost effectiveness of a general practitioner in his management of mental ailments is related to his practice rates of suicide, overdose, outpatient and inpatient referral and sickness, and with his psychotropic prescribing costs. I have no figures with which to measure my practice's psychiatric sickness rate but a current audit of male certification for all causes is low in relation to the national average. The low rates in the other parameters may be due to chance, the unusual mental stability of my patients, my policies, or a combination of all three (Table 5).

Conclusion

The association of the prescribing policies and outcomes described in my two papers is no evidence that they are related or would be reproducible in any other practice. Equally, there is no evidence that they are unrelated or that other doctors in other practices do not or could not reproduce them.

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