

PRACTICE OBSERVED

Practice Research

Prescribing psychotropic drugs in general practice: three year study

L. JONES, D. SIMPSON, A. C. BROWN, D. BAINTON, H. McDONALD

Abstract

A three year longitudinal study of psychotropic drug prescribing in one inner city general practice showed that there was a greater use of such drugs among women and elderly men and women. Repeat prescriptions without consultation accounted for 44% of prescriptions written. We think that any attempt to reduce the volume of prescriptions for psychotropic drugs should take into account the prescribing habits and attitudes of doctors as well as the problems and needs of patients.

Introduction

There is growing concern about the use of psychotropic drugs, the quantities consumed, and the difficulties of withdrawal.¹⁻⁷ Previous studies have used a cross sectional methodology, with evidence based on point prevalence. This paper presents data from a longitudinal investigation of one inner city general practice to establish the pattern of prescribing over time. The study was carried out at the invitation of the senior partner who wanted to reduce the level of psychotropic drug prescribing. The study also looked at patients' perceptions of psychotropic

drugs and explored alternative means of support. Some of the data relating to the prescribing patterns of individual doctors and the characteristics of patients who received various types of psychotropic drugs are reported. A new method of analysing prescription data—drug day prevalence—is described.

Method

The practice had three partners (two men and one woman) and one woman trainee who worked from a single surgery in an inner city area of largely municipal housing with many high rise flats. During the study three younger doctors, two men and one woman, replaced all of the partners. The practice population remained stable at between 6300 and 6500 patients. Including those leaving or joining the practice 8181 people were registered during the three years of the study. The distribution by age and sex of the practice population showed a higher proportion of women and elderly people than in the population of Avon.

A register was kept of patients who received prescriptions for psychotropic drugs over three years. To compile the register a method of collecting all prescriptions was worked out that required a minimum amount of effort for the doctor. Special prescription pads were produced that allowed us to obtain a carbon copy of each prescription in the practice and these were collected at the end of each surgery (from both home visits and surgery consultations). All the six partners, three trainees, and the locums adhered to this, using only these prescription pads. The carbons were sorted and the age and sex written in from the ages file that we had compiled. The information was then coded and entered on the computer.

TERMINOLOGY

Psychotropic drugs were those classified in the *Monthly Index of Medical Specialities* (MIMS) as hypnotics, tranquillisers, and antidepressants. A fourth category of "mixed" was used to describe those drugs that appeared in more than one classification—for example, a drug may have been classified as a tranquilliser and

Department of Mental Health, University of Bristol and Department of Community Medicine, Bristol and Weston Health Authority

L. JONES, MA, MSc, research associate
A. C. BROWN, MD, MRCGP, consultant senior lecturer in mental health
D. SIMPSON, MSc, MRCGP, systems development officer
D. BAINTON, MSc, MRCGP, specialist in community medicine
H. McDONALD, programmer

Correspondence to: Ms L. Jones, Department of Mental Health, 41 St Michael's Hill, Bristol BS2 8DZ.

The span is the duration of time from a patient's first drug day to the last during the period of the study. Patient A and patient C both had a span of six months, while patient B had a span of three months. The density is the proportion of time during the total span of drug taking when the patient was actually having drug days and is expressed as a percentage. Table II shows that, like the number of drug days, the span tends to be greater for women and to increase with age, though density does not increase with age but is higher both for the young, who are more likely to be receiving drugs for a short term, and for the elderly, who are having more continuous medication with a dip in the middle of the age range.

When density and span were combined the patients on the register were divided into three categories (table III): short term—those with a span of under 61 days; long term—those with a span of over 818 days and having drugs for at least half that time; and medium term—the remainder of the patients on the register. The differences between men and women are even more pronounced in the register of patients to women long term drug takers was 1.4. Long term drug takers were older: 140 of the 183 women and 28 of the 45 men were aged 65 or over.

TYPES OF DRUGS

Although there are many ways to subdivide psychotropic drugs, we looked at the drugs prescribed in four broad groups: hypnotics, tranquillisers, antidepressants, and mixed preparations (as defined in the *Monthly Index of Medical Specialities*). Over the period of the study hypnotics were the most commonly prescribed psychotropic drug; 48% of men and 56% of women who received a prescription for a psychotropic drug were given one hypnotic. Nearly a third of both men and women receiving psychotropic drugs were prescribed tranquillisers, whereas under a quarter were prescribed antidepressants, and mixed preparations were given to only 10%. There was a slight shift towards the use of mixed preparations during the study. The ratio of prescribing of hypnotics and tranquillisers to antidepressants and mixed preparations was approximately 1.5. Those who received tranquillisers and hypnotics were given them over longer periods.

The figure shows the four categories of psychotropic drugs in relation to the age and sex of the patients, taken at the midpoint of the study. There was, in general, an increase with age in all drug groups and at all ages, a higher proportion of women than men receiving prescriptions for each type of psychotropic drug. There was

TABLE IV—Psychotropic drug prescribing by doctor

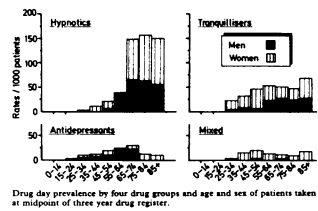
Doctor	No. of months in practice	Average No. of prescriptions a month	Psychotropic drugs per prescriptions
Partner 1	7	51.8	15.1
Partner 2	7	60.3	15.3
Trainee A	18	117.6	21.7
Trainee B	24	117.6	21.7
Partner 4	28	47.7	12.1
Partner 5	28	47.7	12.1
Trainee B receptionist*	11	21.8	12.1
		169.6	21.8

*Repeat prescriptions given without consultation.

TABLE V—Percentage of patients by age and sex who received one or more prescriptions for psychotropic drugs without consultation

	Age groups (years)						Total
	0-14	15-24	25-34	35-44	45-54	55-64	
Men	2	6	21	37	63	128	63
Women	8	10	12	14	18	20	117
Total No. receiving prescription	10	16	33	51	81	148	180
Per cent	0.7	1.0	2.4	3.4	5.1	6.7	40.4
Men							
No. receiving prescription	6	3	7	10	22	36	83
Per cent	6.3	2.0	10.7	17.2	32.3	34.4	51.1
Women							
No. receiving prescription	4	7	26	41	59	72	225
Per cent	6.0	10.6	25.0	23.5	19.5	20.2	167.8
Total	10	10	33	51	81	106	308
Per cent	0.7	0.6	2.1	3.7	5.6	6.9	37.2

*Refers to number of patients receiving one or more psychotropic drug prescriptions without consultation.



a pronounced rise in the rate of prescribing hypnotics for women aged 65 and over. Of all women receiving a prescription for a hypnotic, 93% were aged 55 or over and 44% were aged 75 or over. Tranquillisers were more commonly given to younger patients, 56% of women receiving tranquillizers were aged 54 or under and only 7% were aged 75 or over. Nevertheless, the proportion of patients receiving tranquillizers tends to rise with age. Prescribing of antidepressants also rises with age, reaching a peak in the age group 65 to 74, and for mixed drugs there is a slight peak in the age group 45 to 54.

Doctors' patterns of prescribing—To examine whether different doctors prescribed psychotropic drugs at different rates, the data were analysed to identify the proportion of prescriptions in which there was at least one psychotropic drug. Doctors gave an average between 21.5 and 117.6 prescriptions for psychotropic drugs in a month while they were members of the practice. Except for partner 3, however, most of the doctors prescribed a similar percentage of psychotropic drugs (table IV). Perhaps partner 3's higher proportion was because patients with psychological problems selected the doctor who had an interest in this area.

Repeat prescriptions—Repeat prescriptions written without consultation accounted for 44% of all prescriptions for psychotropic drugs written during the three years. An average of 169.8 prescriptions a month were written in response to requests made by the recipients. Repeat prescriptions were more common in men, being issued for only 32% of those issued over the same period. Table V shows the breakdown of patients by age and sex who received one or more repeat prescriptions. The numbers increase sharply with age, the highest proportion being among those aged 85 and over. The proportion of women who received psychotropic drugs with repeat prescriptions is generally higher than for men, that for men being higher only in the age group 45 to 54.

Discussion

This paper presents some findings from a three year study of psychotropic drug prescribing in one inner city general practice.

antidepressant. It is important to distinguish the number of "items" on a prescription from the prescription itself. For example, a prescription for 20 mg diazepam tablets and 30 diazepam tablets would have been recorded as two separate items. All the data are presented in terms of items except where otherwise stated. The aim of the study was to look at the prescribing and receipt of prescriptions and not drug taking. There was no attempt to measure compliance or the cashing of prescriptions, as in other studies.^{8,9}

DRUG DAY PREVALENCE

A 1001 day computer calendar was made for each patient and the concept of "drug days" devised so that the number of people with an "active" prescription on each day could be calculated. Point prevalences could then be taken. If a patient had a prescription on 1 January for a 30 day supply this was counted as an active prescription for the 30 days thereafter so that the following 30 days will each be a drug day for that patient. In the diagram patient 1 had been given a 30 day prescription on 1 January; patient 2 had been given a 30 day prescription on 7 January; patient 3 had four prescriptions each for

seven days on 1, 8, 15, and 22 January; patient 4 had a 14 day prescription on 4 January; and patient 5 had a seven day prescription on 1 January.



With the drug day approach, three out of five patients had a drug day on 1 January and all five patients had a drug day on 7 January. Thus the point prevalence of drug days for any day during the period of the study could be calculated. The drug day approach has three advantages. It is a simple method of recording drug days and may also be described. Patient 1 had 30 drug days in January, while patient 3 had 28 days and patient 5 only seven days. If the active prescription contained more than one item of psychotropic drug then only one drug day was recorded if they were taken concurrently. So that if, for example, the prescription contained 30 mg of one drug and 10 mg of another, 30 active drug days were recorded, not 51. When the drug groups were analysed separately, however, this concurrent prescribing was taken into account so that this information was not lost. Each drug group was recorded as a separate item.

Results

During the study 74 674 prescriptions were written overall, comprising 61 360 non-psychotropic prescriptions and 13 294 prescriptions with a psychotropic drug on it; 14 922 psychotropic drugs were recorded and these were given to 1699 patients, 523 men (18% of men registered) and 1172 women (27% of women registered). The number of prescriptions for psychotropic drugs changed little during the study despite the changes in the partnership. Overall, 20.7% of the practice population received at least one psychotropic drug during the study. This gives a cross sectional view of prescribing comparable with other studies. Some patients on the register received only one short term prescription and others were receiving drugs throughout the three years. Seventeen patients were excluded from the more detailed analyses as they received only prescriptions given as "to be taken as required"; so the amount, duration, and dose could not be recorded. Of these, 10 received only one prescription so the amount of drug history excluded is small.

To obtain a longitudinal view the drug day prevalence was taken at eight points during the study (table I). The total number of patients in the register with a psychotropic drug day as men. In effect, women were prescribed psychotropic drugs for longer periods than men.

Patients on the register had from one to 1001 drug days. Table II shows that the mean number of drug days is not only higher for women but also rises with age. Some patients had prescriptions over a short continuous period of drug days, while others had the same number of drug days spread over a longer time span. For example, patient A had three 30 day prescriptions over three months: one in January, one in April, and one in June. Patient B had the same number of drug days (90) spread over six months, and patient C had continuous treatment over six months.

TABLE I—Point prevalence rate of "drug days"

Days	No. of patients with drug day	Total No. of patients	Rate per 1000 patients
Men			
1 March 1981	26	2020	26.7
1 June 1981	24	2014	24.4
1 October 1981	23	2017	23.8
1 December 1981	24	2019	24.3
10 March 1982	24	2047	23.9
10 June 1982	24	2044	24.0
30 September 1982	27	2012	26.3
Women			
1 January 1981	274	3469	79.4
1 March 1981	241	3469	70.8
1 June 1981	261	3469	75.2
1 October 1981	265	3413	77.7
1 December 1981	265	3413	77.7
10 March 1982	265	3413	77.7
10 June 1982	265	3413	77.7
30 September 1982	241	3420	70.5
			mean 75.4

TABLE II—Mean number of drug days, span (number of days from first drug day to last), and density (percentage of days actually taking drug during span) for patients on the register by age and sex. (Figures in parentheses are the number of patients in each group. Only patients on prescription first throughout the period of the register were included.)

	Age (years)			
	0-24	25-44	45-64	65 and over
Mean No. of drug days				
Men	48 (48)	72 (129)	179 (196)	254 (124)
Women	38 (191)	50 (272)	116 (426)	168 (375)
Both sexes	38 (132)	61 (401)	204 (394)	370 (499)
Density (%)				
Men	91 (43)	202 (129)	322 (109)	359 (122)
Women	80 (181)	78 (129)	148 (136)	254 (124)
Both sexes	80 (132)	254 (401)	448 (336)	505 (488)
Span (days)				
Men	87 (43)	78 (129)	68 (109)	78 (124)
Women	48 (181)	63 (127)	72 (128)	79 (124)
Both sexes	68 (132)	67 (401)	70 (338)	76 (498)

TABLE III—Number of patients divided into short, medium, and long term drug taking

	No. of men		Percentage of all men receiving psychotropic drugs		No. of women		Percentage of all women receiving psychotropic drugs	
	Short term	Medium term	Short term	Medium term	Short term	Medium term	Short term	Medium term
Short term	254	212	442	40	442	40	41	
Medium term	212	41	253	23	253	23	15	
Long term	41	41	82	7	82	7	4	
Total No. on register	511	294	1107	100	1678	100	100	

Data were also collected on drug histories of individual patients and their perceptions of the drugs they took, and methods of reducing dependence on tranquillisers and hypnotics were considered and piloted, together with other means of support for patients with long term problems. These will be subjects for further reports.

An important part of the study was to establish a register of patients who receive psychotropic drugs. This allowed us to measure prevalence rates using the concept of "drug day" for individual patients. Changes in prevalence rates over time can be measured and individual drug taking histories can be described.

From the cross sectional analyses of the prescribing data it seems that the rate of psychotropic drug prescribing for men and women in this practice is comparable to that found in other studies.¹⁰ The use of the drug day approach, however, shows the even more disparate distribution between the sexes. A series of point prevalence estimations show that three times as many women as men are taking a psychotropic drug on any one day. Over the period of the study, women received drugs at half times as many drug days as men. The duration of time which psychotropic drugs are prescribed increases noticeably with age. The group of long term takers contained four times as many women as men and three quarters of them were aged 65 or over. Our findings confirm the concern of other workers at the disparity between the sexes and the volume of prescribing of psychotropic drugs (L. S. Fiddell, "Psychotropic drug use by women, health attitudes, personality and demographic correlates" presented to American Psychological Association, 1977, San Francisco).¹¹ Longitudinal research is important to gain an understanding of the complexity of prescribing.

The types of psychotropic drugs were divided into antidepressants, hypnotics, tranquillisers, and mixed preparations. The results showed that hypnotics were most often prescribed and, as Williams found in his study in 1981, elderly people of both sexes received most of these drugs.¹² Tranquillisers came next, having been given to nearly a third of patients. Fashions in prescribing were noticeable during the three years, such as a slight increase in the use of mixed preparations and a change from proprietary to generic drugs. The stereotype to often depicted in advertisements of a middle aged housewife receiving tranquillisers is actually reflected, according to our findings, by the elderly patient receiving a repeat prescription for a hypnotic. Attitudes of the medical profession reflecting those of society towards elderly people of both sexes and women of any age are important issues brought out here.

The changes over in partners and trainees allowed us to look at the eight doctors prescribing over varying periods of between seven and 26 months. The number of psychotropic drug prescriptions (not items) per month ranged from 21.5 to 117.6. For seven of the eight doctors between 13.1% and 15.7% of their prescriptions were for mood modifying drugs. The eighth doctor, however, issued the highest monthly number of psychotropic scripts—an average of 21.7% of the total number of prescriptions written by that doctor. Interestingly, trainees were at the lower end of the range both of average number of psychotropic drug prescriptions per month and of the percentage of psychotropic drugs in their prescriptions. Many repeat prescriptions for psychotropic drugs were issued without consultation and this was more noticeable for women and older patients. This reflects Dennis's findings from a survey of 10 000 repeat prescriptions for psychotropic drugs:¹³ the average age of those who had been receiving repeat prescriptions for psychotropic drugs for more than 10 years was 65 and the older the patient the less likely he or she was to have been seen by the general practitioner. Little research has been carried out on the reasons for variation in the prescribing habits of doctors. One of the partners in our practice had a much higher prescribing rate, which may have been related to patients seeking a "sympathetic" doctor. This research views the use of psychotropic drugs will be described in another report. The register of prescriptions provided a method for studying

the use of psychotropic drugs in the practice. We had hoped to continue the study to see whether prescribing rates might be influenced by introducing alternative approaches to treatment, but further funding was not available and the register was closed. The method was somewhat time consuming but practical and reliable, and it seems feasible to repeat it in future studies of prescribing habits. Introducing computers into general practice may simplify the task. The study has shown that the use of psychotropic drugs is widespread and has highlighted their greater use among women and elderly people. The number of repeat prescriptions issued without further consultation may reflect the somewhat pessimistic view among patients of the possibility of cutting down the use of such drugs. Any attempt to reduce the volume of psychotropic drug prescribing would have to take into account doctors' prescribing habits and attitudes, as well as look at patients' problems and needs.

We thank the following people for their cooperation in the research: Drs P. Golding, C. Horne, H. Morgan, R. Price, J. Keen, P. Thomas, C. Baker, and V. Hallyoake, trainees, and receptionists; Professor H. G. Morgan, Ms C. Round, Mrs N. Iles, and Mrs S. Warren, who also worked on the study; Dr S. Ashman who gave comments and advice on this paper; and Mrs S. Taylor and Mrs V. Kelly, who helped to prepare the manuscript.

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ONE HUNDRED YEARS AGO A boy, aged 6, has recently died at Haverhill, Lancashire, from hydrophobia. He had been bitten on October 27th, in his play, by a collie dog. (It is curious how often the delinquent is a collie.) His father sucked the wound out, and about a couple of hours later, Mr. Whitaker arrived, and treated the wound in the ordinary way with the solid nitrate of silver. The wound healed, and the boy returned to his usual state of health, but on December 14th he was drowsy; on December 16th, he complained of pain over his left eye; on December 17th, he "could not take liquids without" (in the words of his father) "gasping, or a sort of jerking which prevented his swallowing"; and on December 20th, the fifty-fifth day after his bite, he died. An inquest was held; and the deputy-coroner, Mr. W. Hardy, added one more painful feature to a painful case by criticising the treatment adopted. The treatment was "the best that could be given, but it is the most widely spread, and, indeed, the only established and recognised, mode of treatment. The deputy-coroner, however, considered that, if nitrate of silver was used, "the liquid would be much more preferable to the solid." Of course, in his private capacity, Mr. W. Hardy is at liberty to believe that molten nitrate of silver introduced into a wound inflicted by a rabid dog is the best line of treatment; but the deputy-coroner should recollect that his utterances in his official capacity acquire an importance and a power of inflicting pain that they would not otherwise possess. He did not pretend, he said, to possess any special knowledge; and would, therefore, have been more considerate, more courteous, and more reasonable, if he had refrained from the criticisms in which he indulged. (*British Medical Journal* 1884; 1: 130.)