

The use of repeatedly prescribed medicines

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SUMMARY. The use of prescribed medicines was investigated by interviewing a random sample of 836 people aged 18 and over, living in England and Wales. Two fifths of respondents had taken some prescribed medicine, excluding an oral contraceptive, in the two weeks before the interview; nearly a quarter of all people were taking some medicine first prescribed one year or more previously. Medicines from two therapeutic classes, psychotropics and diuretics or preparations acting on the cardiovascular system, made up half of all the long-term prescriptions. It seems that the number of people taking long-term prescriptions of diuretics or medicines acting on the cardiovascular system has trebled since 1969, although the general distribution of long-term prescribed medicines, in age and sex groups, has remained much the same as it was in 1969. People classified as working-class were more likely than middle-class people to be taking some medicine on a long-term prescription.

Introduction

PRESCRIBING appears to be the commonest therapeutic event in general practice, occurring at about two thirds of consultations (Berkeley and Richardson, 1973); in about half of the consultations where some prescription is given, it is a repeat prescription (Dunnell and Cartwright, 1972). In addition, Howie (1977) reasons that the number of prescriptions issued without the patient seeing the doctor—nearly all of which are, presumably, repeat prescriptions—is nearly equal to the number prescribed in consultations. These data give some indication of the scale and frequency of repeat prescribing. Other studies produce rates of repeat prescribing per doctor per unit of time—rates which vary from more than 200 per doctor per week (Williams, 1970) to less than 10 per doctor per week (Bain and Haines, 1975). This variability reflects differences between doctors (Balint *et al.*, 1970) and differences between the patients in their practices.

This paper describes the scale and nature of use of

repeatedly prescribed medicines using information from patients. It starts by looking at the medicines they were taking and the length of time since these medicines were first prescribed; then the focus is upon patients, their use of long-term prescriptions and how this varies with age, sex, and social class. Some comparisons have been made with the results of an earlier study, carried out in 1969, at the Institute for Social Studies in Medical Care (Dunnell and Cartwright, 1972).

Methods

Twenty parliamentary constituencies in England and Wales were selected, after stratification, with probability proportional to their number of electors. Within each constituency 50 people were chosen by systematic random sampling from the electoral register. From this initial sample of 1,000, 836 people were successfully interviewed in their homes between March and July 1977. A structured questionnaire was used and the majority of the interviews (three quarters) lasted between one and two hours. Most of the questions were about experiences of, and attitudes towards, the care given by general practitioners; a small number of questions were about the use of prescribed medicines.

The distribution of age, sex, and marital status of the people who were interviewed was similar to that of the adult population in England and Wales (Central Statistical Office, 1979).

The prescribed medicines have been coded according to a modification of the new therapeutic classification devised by the Department of Health and Social Security (Skegg *et al.*, 1977). For reasons explained elsewhere (Anderson, 1980), oral contraceptives are excluded from the prescribed medicines. Women whose only prescribed medicine was an oral contraceptive are therefore classified as not taking a prescribed medicine.

Results

Medicines

Three hundred and twenty-two people (39 per cent of respondents) reported taking a prescribed medicine, other than an oral contraceptive, in the 14 days before the interview. When asked how many medicines they were taking, 321 people replied, naming 636 medicines

Table 1. Distribution of prescribed medicines by therapeutic class.

Therapeutic class	Percentage N = 608
Psychotropics	18
Other nervous system	11
Gastro-intestinal	6
Cardiovascular/diuretic	22
Respiratory/allergic	10
Rheumatic	7
Anti-microbial	6
Endocrinological	5
Nutrition/blood	5
Skin/eye/mucous membrane	9
Other	1

Table 2. Number of prescriptions for the same medicine.*

	Percentage	
	1969 N = 1,086	1977 N = 603
1	29	25
2-4	20	20
5-9	12	12
10-19	12	14
20-39	9	11
40+	18	18

*Small numbers for which inadequate information was obtained have been excluded from this and subsequent tables.

(excluding oral contraceptives), of which 608 could be classified into therapeutic groups (Table 1).

Frequency of prescribing

Three quarters of the medicines had been prescribed more than once and, for nearly a fifth, 40 or more prescriptions had been issued. The data from the 1969 study (Dunnell and Cartwright, 1972) include oral contraceptives but these comprised less than five per cent of the prescribed medicines. As Table 2 shows, medicines had been repeated with similar frequencies in the two studies.

In 1977 more than two thirds of the medicines in the endocrinological and cardiovascular therapeutic classes had been repeated 10 or more times, compared with nearly half the psychotropics drugs and less than one third of the drugs in the gastro-intestinal, anti-microbial, nutrition, and dermatological classes. (In general, attention is not drawn to differences which might have occurred by chance five or more times in 100.) Altogether the proportion of prescriptions which were repeats ranged from more than 90 per cent of medicines in the endocrinological and cardiovascular therapeutic classes to less than 60 per cent of medicines in the gastro-intestinal, anti-microbial, and dermatological classes.

Table 3. Time elapsed since medicine first prescribed.

	Percentage of medicines	
	1969 N = 1,116	1977 N = 629
< 2 weeks	13	12
2 to < 4 weeks	10	10
1 to < 6 months	16	15
6 to < 12 months	10	10
1 to < 2 years	31	13
2 to < 5 years		23
5 to < 10 years	11	9
10 years +	9	8

When first prescribed

Seventy per cent of repeat prescription régimes were initiated one year or more before the interview, which is the same as in 1969. People were not asked if they had taken the medicine continuously since it was first prescribed—however, a crude estimate (based on mid-points of the categories in Table 2, and taking 50 as an estimate for the '40 or more' category) of the average number of prescriptions obtained by people reporting that their drug was first prescribed between two and five years previously is 28. This suggests use of the medicines was at least regular for most medicine takers. People taking medicines reported that altogether just over half of the prescribed medicines had first been prescribed at least one year previously. The distribution shown in Table 3 is similar to that reported for 1969.

There was considerable variation between therapeutic classes in the proportion first prescribed at least one year ago. This ranged from 24 per cent of drugs acting against infections and 31 per cent of gastro-intestinal preparations, to 78 per cent of endocrinological drugs and 79 per cent of diuretics or medicines acting on the cardiovascular system. More than half (56 per cent) of psychotropic drugs had first been prescribed more than one year previously; and almost half (48 per cent) were first prescribed at least two years ago.

The data presented so far have described how prescribed medicines in the different therapeutic classes varied in the proportions which were repeats and which were first prescribed one year or more before the interview. Table 4 shows how these variations are reflected in the distribution of the prescribed medicines in long (first prescribed one year or more previously), short (first prescribed less than one year ago) and non-repeat groups.

The proportions of psychotropic and other nervous system drugs are fairly constant in the three groups, making up between a quarter and a third of the prescribed medicines. However, medicines in the diuretic and cardiovascular therapeutic class increase in proportion from the non-repeat to long-repeat group, making up one third of long-term prescriptions. This,

Table 4. Repeat and non-repeat prescriptions: distribution by therapeutic class and time since first prescribed (in percentages).

Therapeutic class	Non-repeat N=141	Repeat <1 year N=138	Repeat >1 year N=325
Psychotropic	14	20	19
Other nervous system	13	11	11
Gastro-intestinal	11	7	3
Cardiovascular/diuretic	5	16	32
Respiratory/allergic	13	9	9
Rheumatic	7	10	6
Anti-microbial	11	9	3
Endocrinological	1	4	8
Nutrition/blood	5	9	3
Skin/eye/mucous membrane	19	5	6
Other	1	0	0

even with the different classification, suggests a marked increase since 1969, when 'cardiovascular and genito-urinary preparations' were only 10 per cent of the medicines first prescribed a year or more before the interview.

Seeing the doctor

Repeat prescriptions were often obtained without the patient seeing the doctor. When more than one prescription had been issued for the same medicine people were asked whether they saw the doctor or not for the most recent prescription of that drug. More than half (54 per cent) of the repeat prescriptions were obtained without the patient seeing the doctor. In 1969, medicine takers reported that 31 per cent of their repeat prescriptions were 'usually' obtained without seeing the doctor.

In all the therapeutic classes in 1977, half or more of the most recent repeat prescriptions were obtained without seeing the doctor, except for preparations acting on infections (32 per cent were obtained without seeing the doctor) and those affecting the respiratory system or allergies (44 per cent). As in the 1969 study, "The more frequently the same item had been prescribed the less likely the patient was to see the doctor" (Dunnell and Cartwright, 1972). The proportion of most recent repeat prescriptions which were issued with patient and doctor together fell from 65 per cent when the prescription was the second, third, or fourth for that drug, to 26 per cent when the medicine was being prescribed for the fortieth or more time. Similarly, 94 per cent of repeats for drugs first prescribed less than a month previously were obtained when seeing the doctor, compared with only 26 per cent of drugs which were first prescribed five or more years ago.

The frequency with which a medicine had been prescribed appeared more important than the sex, age or social class of the medicine taker as a factor influencing the probability of direct contact between patient and doctor at the most recent issuing of a repeat prescription. There were no significant differences between men

Table 5. Maximum time since first prescription of any medicine taken.

	Percentage of patients N=319
< 2 weeks	10
2 to < 4 weeks	12
1 to < 6 months	13
6 to < 12 months	7
1 to < 2 years	13
2 to < 5 years	22
5 to < 10 years	11
10 years +	12

and women or middle- and working-class people in the proportion of their repeat prescriptions obtained when seeing the doctor. People aged 18 to 24 obtained 91 per cent of their repeat prescriptions when seeing the doctor; this proportion fell with age to 36 per cent of prescriptions to people aged 65 and over. However, this general picture was not repeated consistently after controlling for the number of times the medicine had been prescribed. The need to control for the frequency with which the medicine had been prescribed indicates that the length of time for which people had been taking their medicines was associated with characteristics of the medicine user. The people taking medicines on repeat prescription, in particular those who obtained the first prescription for their medicine more than one year previously, are discussed next.

People

Seventy-nine per cent of people taking medicines, or 30 per cent of those aged 18 or over, were taking at least one prescribed medicine on a repeat prescription. Fifty-eight per cent of people taking medicines, nearly a quarter of all people, reported taking at least one item of medicine first prescribed one year or more previously (Table 5).

Among those taking any medicine on a long-term prescription (that is, first prescribed a year or more previously), 52 per cent were taking one, 27 per cent two, and 21 per cent three or more medicines on a long-term prescription. The average number of long-term prescribed medicines being used by people taking any medicine on a long-term prescription was 1.8. People using long-term prescribed medicines from different therapeutic classes varied in the average number of long-term medicines they were taking in that therapeutic class—from 1.7 among long-term users of drugs in the cardiovascular and diuretic class to 1.0 among those taking some long-term preparations acting on the gastro-intestinal system.

The proportions of people taking long-term prescribed medicines from different therapeutic classes are shown in Table 6. The proportions add up to more than 100 per cent because some people had been taking medicines from more than one therapeutic class on a

Table 6. Percentage of people taking long-term medication by therapeutic class.

Therapeutic class	All patients N=821	Patients taking long-term medicines N=178
Psychotropic	7	32
Other nervous system	4	18
Gastro-intestinal	1	6
Cardiovascular/diuretic	8	35
Respiratory/allergic	3	12
Rheumatic	2	10
Anti-microbial	1	4
Endocrinological	3	13
Nutrition/blood	1	6
Skin/eye/mucous membrane	2	10
None	78	0

long-term prescription.

Sex

Twenty-five per cent of women were taking some long-term prescribed medicine compared with 19 per cent of men. This difference would, of course, be greater if oral contraceptives were included, as 10 per cent of women were taking some oral contraceptive first prescribed at least one year previously. (As a separate issue, it is clear that long-term use of oral contraceptives has increased—in 1969, only two per cent of women taking oral contraceptives had received their first prescription five or more years previously—this had risen to 19 per cent in the present study.)

Age

There was a clear trend with age, from two per cent of those aged 18 to 24 to 42 per cent of people aged 65 and over in the proportion taking any long-term prescribed medicine. Only three per cent of adults under age 55 were taking two or more medicines first prescribed at least one year ago, compared with 24 per cent of people aged 55 and over. Eighteen per cent of people aged 55

and over were taking long-term prescriptions for diuretics or preparations acting on the cardiovascular system, and 14 per cent were taking psychotropic drugs first prescribed one year or more previously; the corresponding proportions for people aged 18 to 54 are two and three per cent.

Social class

People classified as working-class (Registrar General, 1970) were more likely to be taking a medicine on long-term prescription—25 per cent of them compared with 18 per cent of middle-class people; 13 per cent of working-class people were taking two or more medicines first prescribed at least one year ago, as against seven per cent of the middle-class. However, there was only one small difference in the nature of the long-term prescriptions: five per cent of working-class people were taking long-term drugs, other than psychotropics, with an action on the nervous system, compared with two per cent of middle-class people (nearly all the 'other nervous system' drugs were analgesics).

Table 7 shows the major differences by age, sex and social class in the taking of long-term prescriptions.

The clearest differences are those associated with age; people aged 55 and over were more likely than those aged 18 to 54 to be taking long-term prescriptions whether they were male or female, middle- or working-class. The differences between men and women and between the social classes were not significant within the broad age groups. The single exception was that among people aged 55 and over working-class women were more likely than middle-class women to be taking central nervous system drugs, other than psychotropics, on a long-term prescription.

Discussion

A comparison of two surveys by the Institute for Social Studies in Medical Care shows that the proportion of people reporting the use of repeatedly prescribed medicines, and the distribution of these medicines in the

Table 7. Percentage of patients on long-term prescriptions by age, sex, social class and type of drug.

Type of drug	Men				Women			
	18-54 years		55+ years		18-54 years		55+ years	
	Class		Class		Class		Class	
	Middle N=119	Working N=152	Middle N=48	Working N=79	Middle N=114	Working N=125	Middle N=60	Working N=101
Any medicine	10	14	27	37	14	17	37	44
Psychotropic medicine	3	2	15	10	4	5	17	13
Other nervous system drug	3	3	4	5	3	4	0	11
Medicines acting on cardiovascular system	2	1	13	16	2	2	20	21

Men and single women have been classified on the basis of their present occupation if they were under 65 for men, or 60 for women, or on their main occupation if they were older. Married and widowed women have been classified according to their husband's present, main or last occupation.

population, changed very little between 1969 and 1977. In both surveys about a quarter of the respondents were taking some medicine on a long-term prescription; more women than men were doing so, and the proportion taking a long-term prescription increased with age.

The overall lack of change in the use of repeat prescriptions is difficult to interpret since the classification of medicines in 1969 and 1977 was not generally comparable.

In 1977, drugs from the therapeutic classes—psychotropics, and diuretics or medicines acting on the cardiovascular system—appear to dominate the medicines obtained on long-term prescriptions. The safety and effectiveness of both these drug types, given the current patterns of prescribing, have been questioned (*British Medical Journal*, 1978; Tyrer, 1978). Otherwise the use, and appropriateness of use, of psychotropic drugs appears to have received more attention than the use of diuretics and drugs acting on the cardiovascular system. This is not surprising considering the rapid increase in the prescribing of psychotropic drugs during the 1960s (Parish, 1974) and concerns about dependence upon and abuse of drugs which modify mood.

Data from the present study suggest that problems associated with the large-scale and long-term use of psychotropic drugs have not been resolved. Half the psychotropic drugs were first prescribed two or more years previously and nearly three fifths of repeat prescriptions were obtained, on the most recent occasion, without seeing the doctor. The ease with which repeat prescriptions for mood-modifying drugs can be obtained has been commented upon by Freed (1976). However, in the recent study, long-term use of diuretics or medicines acting on the cardiovascular system was as common as long-term use of psychotropics, and the medicines were obtained without seeing the doctor with a similar frequency. Furthermore, the number of people taking long-term prescriptions of drugs in the cardiovascular and diuretic therapeutic class appears to have increased threefold since 1969. Some of this dramatic increase is undoubtedly due to screening and treatment for hypertension. Other possible causes and consequences of such large-scale, long-term medicine taking are less obvious.

There was some suggestion that in 1977 a higher proportion of repeat prescriptions were issued without the patient seeing the doctor. The use of 'indirect contact' for issuing repeat prescriptions is probably convenient to both patients and doctors: Manasse (1974) suggests that the doctor's consultation rate would increase by 16 per cent if all repeat prescription patients were seen. There are "many occasions on which it is perfectly proper that a patient should have medicine prescribed or repeated without seeing a doctor" (Howie, 1977), but the use of 'indirect contacts' limits the doctor's ability to review the patient's progress. Austin and Parish (1976) point out that the issuing of repeat prescriptions without the patient seeing the doc-

tor increases the risk of drug interactions and encourages long-term drug use, but lessens the doctor's chances of early recognition of adverse drug reactions. These problems are probably most acute for older patients, since two fifths of people aged 65 or over were taking some medicine on a long-term prescription, and two thirds of their most recent repeat prescriptions were issued without seeing the doctor. An increase in the proportion of repeat prescriptions obtained without contact between patient and doctor may be a cause for concern, especially among the elderly, if, as Shaw and Opit (1976) state: "Reliance on self-referral by elderly infirm patients, whether on long-term treatment or not, will not guarantee adequate supervision of their medical needs."

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