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Knowledge of and attitudes to medicines in the Southampton community

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1 A 1 in 200 sample of the Southampton electorate was sent a postal questionnaire in January, 1984. Of the 740 adults surveyed, 443 (59.9%) returned completed questionnaires. One hundred and eighty-eight (42.4%) of those replying had been prescribed a medicine within the previous month.
2 Two hundred and seventy-five respondents (62%) felt that not enough was explained about medicines by doctors or pharmacists.
3 Consistent with this, was the fact that 37% were unaware of safe methods of disposal of leftover medicines. In addition, 112 of 154 (72.7%) people currently taking a prescribed medicine knew of no side-effects which could result from this.
4 Eighty-three per cent of respondents thought an information leaflet would be helpful. Of nine items which previous authors had suggested should be included, seven were thought to be important by more than 75% of those replying.
5 Although 54% of people wanted detailed information, 43% stated a preference for short, summarized points.
6 We conclude that most patients need to have more information about prescribed medicines and they would welcome written leaflets. However, further work is necessary to determine the best format for such leaflets.

Keywords prescription leaflets patient knowledge side effects

Introduction

Sooner or later almost everyone has a medicine prescribed by their general practitioner and for many this is a frequent experience. It has been estimated that males visit their general practitioner on average 3.5 times and females 5.0 times annually (Office of Population Censuses and Surveys, 1984). The majority of these consultations end with the issuing of a prescription. In order to derive full benefit and to escape harm from these prescriptions, patients should be aware of their purposes and of any possible hazards; they should be sure of when and how to take their medicines, how to store them and how to dispose of them safely (Herman *et al.*, 1978). Doctors and pharmacists should, between them, make sure that patients receive this information but with over 389 million prescriptions dispensed in 1983 (Office of Population Censuses and Surveys, 1985), both are working against time and often fail to do this (Fletcher, 1973). In any case, verbal advice is often forgotten (Ley, 1979) and technical jargon may confuse patients (Boyle, 1970). Previous studies, mainly carried out in the USA, have shown that knowledge

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about medicines can be improved by the use of simple informative leaflets (Morris & Halperin, 1979; George *et al.*, 1983). However, we could discover no recent systematic study of patients' knowledge concerning medicines or of attitudes to prescription information leaflets. We, therefore, decided to carry out our own survey in Southampton.

Methods

A questionnaire was designed, piloted and printed (Appendix). It was sent in January, 1984 with a postage-paid return envelope to a 1:200 systematic sample from the latest electoral registers of Southampton Itchen and Southampton Test. A repeat questionnaire was sent to those who had not replied after 1 month.

The questionnaire was divided into two sections, A and B. Part A (which was to be answered by all respondents) sought information concerning general knowledge about medicines, their storage, disposal, secondary usage and attitudes to the possible use of prescription information leaflets. Part B required specific answers relating to knowledge about, and attitudes towards, medicines which had been prescribed for them within the previous month.

Replies received by the end of the second month were coded and analysed on the University of Southampton computer using the 'Minitab' programme.

Results

Part A

Of the sample of 740 adults, 443 (59.9%) returned completed questionnaires. Fifty questionnaires (6.8%) were returned unopened because the subject had either moved away or the address was incorrect. A further 23 questionnaires (3.1%) were returned uncompleted. The remaining 224 questionnaires (30.3%) were not returned. The age structure of the 443 respondents was closely similar to the 1981 OPCS census figures for adults over the age of 16 years living in Southampton. However, in our study women were slightly over-represented (Table 1). Of these 443 people, 188 (42.4% of respondents) has taken a prescribed medicine within the past month.

Storage and disposal of medicines (based on 443 replies) Thirty-five per cent of respondents stored their medicines in the kitchen, 24% in the bathroom, 22% in the bedroom and 6% in the living room. The remaining 13% used a variety of places including handbags and in their cars.

Forty-six per cent of people stated that they would flush away any left over medicine down the toilet; 17% would return it to the pharmacist or doctor and 14% would throw it away with the rubbish. Fifteen per cent of patients volunteered that they would keep their medicine.

Seventeen people (4%) admitted to having taken a medicine prescribed for someone else in the previous year and 12 (3%) had allowed someone else to take their own medicine.

Information about medicines Sixty-two per cent (275) of the respondents felt that not enough was explained about medicines by doctors and pharmacists. This response was not significantly influenced by age, sex or social class. Overall, 83.1% (368) of responders considered that an information leaflet would be helpful. But, among the 275 who were not satisfied with the information they had received, 96% would welcome a leaflet. Fifty-four per cent of 368 respondents who wanted written information stated that they would prefer a detailed leaflet (explaining all the benefits and risks) but 43% wanted brief, summarised information: the remaining 3% did not state a preference.

Contents of potential information leaflets (based on 368 replies) Of the nine items suggested in the questionnaire, seven were considered important by 75% of respondents and five by more than 80% (Table 2). Other items which were suggested by the respondents included: what to do if the medicine was taken in overdose or by a child; how long the medicine remains effective and how to dispose of it correctly.

Of those people who felt that a leaflet would not be helpful, 30 would rather ask a doctor or pharmacist, three felt that they already knew enough and one thought that more information would be worrying.

Part B

Medicine taking in the past month One hundred and eighty-eight (42.4%) of the respondents had taken a prescribed medicine in the previous month. Medicine taking was more common among women (50.0%) than in men (33.7%) ($P < 0.001$ by a χ^2 test with Yates' correction). Social class had no significant effect on medicine taking but those over 55 years were more likely than those under this age to have taken a medicine in the past month (60.8% compared with 31.5%; $P < 0.001$). The majority (81.9%) of

Table 1 Details of the responders compared to the 1981 census figures for Southampton

	Responders (%)	*Population of Southampton (%)*
Sex		
Men	45	48
Women	55	52
Total number (=100%)	436	158 527
Age (years)		
18–24	16	19(16–24 years)
25–34	19	19
35–44	15	14
45–54	12	14
55–64	15	15
65–74	13	12
75 and over	10	7
Total number (=100%)	439	158 527
Social class		
I professional	6	5
II intermediate	20	18
IIIN skilled non-manual	17	13
IIIM skilled manual	40	36
IV semi-skilled	12	19
V unskilled	5	9
Total number (=100%)	380	15 082*

* Census figures for a '10% sample'

Table 2 Response to the nine items suggested as potential contents of prescription information leaflets (368 replies)

	Number agreeing (%)
When and how to take it	334 (90.8)
Side-effects and what to do about them	325 (88.3)
Precautions such as possible effects on driving	320 (87.0)
Problems with alcohol or other drugs	309 (84.0)
Name of medicine	305 (82.9)
Purposes of treatment	293 (79.6)
How long to take it	278 (75.5)
What to do if a dose is missed	237 (64.4)
How to tell if it is not working	215 (58.4)

the 188 patients who had been prescribed a medicine within the last month were still taking it and of these, two-thirds had done so for over 6 months. Ninety-five per cent of those currently taking a medicine could name it. Details of these are given in Table 3. Seventy-three per cent of these medicines were given as tablets, 13% in the form of capsules and 4% as syrups. The remaining 9% included creams, eye drops and inhalations.

Almost all respondents (94%) knew the purpose for which their medicine was intended, but only 14 (3%) knew of other conditions for which these remedies could be prescribed. The majority of patients taking either tablets or capsules swallowed them with a drink. Eleven per cent of those taking tablets and 24% of those receiving capsules took them without either food or fluid. Eighty-three per cent of those taking medicines in the past month said that they had found it easy to remember to take them.

Knowledge of unwanted effects Knowledge of unwanted effects was very limited: of the 154 people who were still taking a medicine, 112 (72.7%) knew of no side-effects which could result from their medicine. Specifically, of the items listed in Table 3, one patient taking

Table 3 Drugs identified by the study population as having been taken in the past month (classified according to the British National Formulary system)

1.	*Gastrointestinal system*	
1.1	Antacids	2
1.2	Antispasmodics etc.	4
1.3	Ulcer healing drugs	2
1.4	Antidiarrhoeal drugs	2
1.5	Treatments for chronic diarrhoea	1
1.6	Laxatives	1
		12
2.	*Cardiovascular system*	
2.1	Cardiac glycosides	3
2.2	Diuretics	17
2.3	Antiarrhythmic drugs	1
2.4	β-adrenoceptor blocking drugs	18
2.5	Antihypertensive drugs	1
2.6	Vasodilators	9
2.8	Anticoagulants	1
		50
3.	*Respiratory system*	
3.1	Selective β-adrenoceptor stimulants	4
3.3	Prophylaxis of asthma	1
3.9	Antitussives	1
3.10	Systemic nasal decongestants	1
		7
4.	*Central nervous system*	
4.1	Hypnotics, sedatives and anxiolytics	7
4.2	Lithium	1
4.3	Antidepressants	6
4.6	Drugs used in nausea and vertigo	2
4.7	Analgesics	14
4.8	Anti-epileptics	5
4.9	Drugs used in Parkinsonism	1
		36
5.	*Infections*	
5.1	Penicillins	9
	Tetracyclines	3
	Sulphonamides and trimethoprim	4
5.2	Antifungal drugs	1
		17
6.	*Endocrine*	
6.1	Drugs used in diabetes	5
6.2	Thyroid and antithyroid drugs	5
6.3	Corticosteroids	3
6.4	Sex hormones	2
		15
7.	*Obstetrics/gynaecology and urinary-tract disorders*	
7.2	Treatment of vulval conditions	1
7.3	Contraceptives	1
7.4	Urinary tract disorders	1
		3
8.	*Malignant disease*	
8.1	Cytotoxics	1
9.	*Nutrition and blood*	
9.1	Drugs used in anaemias	4
9.2	Electrolyte replacement	2
9.6	Vitamins	3
		9
10.	*Musculoskeletal and joint diseases*	
10.1	NSAIDs	17
	Allopurinol	2
		19
11.	*Drugs acting on the eye*	
11.3	Anti-infective preparation	1
12.	*Drugs acting on the nose*	
12.2	Nasal allergy	1
13.	*Drugs acting on the skin*	
13.3	Local anaesthetic/antipruritic preparations	1
13.5	Preparations for psoriasis and eczema	4
13.6	Preparations for acne	1
13.7	Preparations for warts	1
		7
	Miscellaneous	2

Total number of replies = 171 (eight people volunteered more than one drug name)

sulphasalazine, all three who were receiving digoxin, 15 of those taking diuretics, a similar number receiving β-adrenoceptor blocking drugs, all three on nifedipine and the one patient taking warfarin were unaware of any side-effects which could result from these treatments. None of the patients taking inhaled β-adrenoceptor stimulants, five of the patients receiving benzodiazepines, the patient on lithium, four of those on tricyclic antidepressants and two of the three taking anticonvulsants (one of whom was on three different drugs) were also unaware of possible adverse effects. Finally, two-thirds of those on antimicrobial therapy, both patients taking chlorpropamide and 14 of those on non-steroidal anti-inflammatory drugs were ignorant of all potential unwanted effects. The remaining 42 patients knew an average of 1.6 'side-effects' each but 19 of them were aware of only those which they had themselves experienced.

Since commencing treatment, 93 of 173 (54%) who replied to this question felt 'much better',

33 (19%) 'a little better' and 24 (14%) 'about the same'. Only 4% felt worse since commencing their medicine. Sixty-nine patients (39.9%) who replied to question 22 said that the doctor had given either too little information or none at all.

Discussion

Only 60% of those surveyed in Southampton responded to our questionnaire, so it is possible that our results might be biased by a higher response rate amongst those who were currently taking a medicine. Any such bias is likely to be unimportant for two reasons. Firstly, 42.4% of our respondents had taken a prescribed medicine in the previous month, which is less frequent than in a previous survey of Southampton residents (Castleden, 1978) but very similar to the 41% identified by Dunnell & Cartwright (1972). Secondly, in a recent, large survey carried out in more than 1,000 pharmacies in the U.K., a still lower response rate was obtained from people who were actually collecting prescribed medicines (Busson & Dunn, 1986 unpublished).

Despite our response rate, clear-cut answers were given to many questions and several potential hazards to health were identified. The first of these was storage of medicines, the pattern for which did not seem to have changed significantly since the previous survey of Dunnell & Cartwright (1972). We cannot, however, identify from the present survey what proportion of medicines stored in the kitchen or living room were in reach of children. Secondly, 37% of people seemed unaware of safe methods of disposing of leftover medicines. Of these, 15% admitted that they would keep any which were leftover. By contrast, the admitted level of secondary usage of medicines was low: detailed examination of those which had been used either by the respondent (but prescribed for some-one else) or given by them to another did not reveal any major problem.

But, in order to derive full benefit from prescriptions, patients need to be aware of their purposes, of any possible hazards and when and how to take them (Herman *et al.*, 1978). Doctors and pharmacists have a collective responsibility to ensure that patients have this information. Our current survey confirms that they frequently fail to do this. In particular, 38 of 173 patients prescribed a medicine within the previous month did not remember having been told anything at all about it by their doctor and a further 31 believed they were told too little. Overall, 62% of our respondents felt that not enough was explained about medicines by doctors and pharmacists. Their views are borne out by the lack of knowledge about potential adverse effects of treatment. In particular, 72.7% of those who were currently taking a medicine appeared to be totally ignorant about any potential unwanted effects. Some of the drugs involved, e.g. digoxin, warfarin, lithium and chlorpropamide, have narrow therapeutic indices and considerable problems might arise. Many of the others were also potent remedies, with effects on the cardiovascular system, central nervous system or had non-steroidal anti-inflammatory properties.

In a previous study, we (George *et al.*, 1983) showed that knowledge about treatment (including side-effects) can be improved by the use of prescription information leaflets. Eighty-three per cent of our 443 respondents thought that leaflets would be helpful and virtually all (96%) of those who felt that not enough is explained about medicines welcomed their use. Only 30 people felt that they would rather ask the doctor or pharmacist. But, despite approval of information leaflets in principle their contents and design merit further research. Of the nine items suggested previously by Herman and colleagues (1978) seven were strongly approved by Southampton residents. It is possible that two of these (the name of the medicine and purposes of treatment) were superfluous as 95% of those prescribed a medicine in the previous month volunteered the name of their medicine and 94% its purpose. However, we think it likely that many of them consulted the label on their medicine container, before filling in its name because this pattern of behaviour has been observed frequently at interviews carried out in patients' homes. In addition, although an appropriate response was given to the question about purposes of treatment, we consider this to be a useful item for prescription information leaflets. For example, with antibiotics such as amoxycillin, an appropriate response might be 'for cystitis', but the patient may be unaware of the fact that this condition is due to a bacterial infection and that the bacteria need to be killed if it is to be cured. In addition, drugs such as diuretics can be used for several different purposes and an improved understanding of these might assist compliance. Of the nine items which we examined, only one (how to tell if it is working) seems to us to be reasonable to omit in the interests of brevity.

We conclude that most patients need to have more information about prescribed medicines, especially their unwanted effects. The majority of people would welcome written leaflets but

further work is necessary to establish the best format and content of these.

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Appendix 1

THE UNIVERSITY OF SOUTHAMPTON

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Dear

The enclosed questionnaire comes from the University of Southampton. We are undertaking some research into people's attitudes to medicines. In particular we want to find out what patients would really like to know about the medicines that they receive. To find this out, we have sent the enclosed questionnaire to Southampton residents drawn at random from the electoral register.

We would be grateful if you could answer as many questions as you can – even if you are not taking medicines at the moment. Any answers (including your personal details) would be confidential and your doctor will not be reading them. The completed questionnaire should be sent back in the envelope provided.

Thank you for your help.

Yours sincerely,

Sally Ridout
Medical Student

C. F. George
Professor

Enc.

QUESTIONNAIRE ON MEDICINES

PLEASE LEAVE BLANK

1 2 3 [ ][ ][ ]

4 5 [ ][ ]

Date of birth: ..... Sex: M [ ] F [ ] 6 [ ]

What is, or was, the occupation of the head of the household? 7 [ ]

.....

1. In the last month, have you taken any medicine prescribed for you by your Doctor? (i.e. tablets, syrup, ointment, inhaler etc.) 9 [ ]

   Yes [ ] No [ ] Don't know [ ]

   If your answer is NO, or don't know, answer questions 2–7 only.

2. Where do you usually keep your medicines? (e.g. which room, handbag etc.) 10 [ ]

   .....

3. What would you do with any medicine which you had left over? 12 [ ]

   Please tick one

   - Keep it [ ]
   - Return to chemist/doctor [ ]
   - Throw away with the rubbish [ ]
   - Flush down the toilet [ ]
   - Other [ ]

4. In the last year, have you taken any medicine prescribed for some-one else to save you a visit to your doctor? 13 [ ]

   Yes [ ] No [ ] Don't know [ ]

   If YES: what was it called?

   .....

5. In the last year, has anyone else taken medicine prescribed for you? 15 [ ]

   Yes [ ] No [ ] Don't know [ ]

6. Overall, do you feel that enough is explained about medicines (by the doctor, chemist, etc.)? 16 [ ]

   Yes [ ] No [ ] Don't know [ ]

7. Do you think that a leaflet explaining about medicine(s) that you were prescribed would be helpful?

17

Yes ☐ No ☐ Don't know ☐ ☐

If your answer is YES, complete questions 7a and 7b.

If NO complete question 7c.

7a. If YES: Do you think the information given in the leaflet should be:

18

Detailed – explaining all risks and benefits of the medicine	☐
Short/summarised – explaining important points only	☐
Don't know	☐

7b. Which of the following items do you consider to BE IMPORTANT for an information leaflet?:

	Yes	No	Don't know		
i) Name of the medicine	☐	☐	☐	☐	19
ii) Purposes of treatment	☐	☐	☐	☐	20
iii) How to tell if it is working	☐	☐	☐	☐	21
iv) When and how to take it	☐	☐	☐	☐	22
v) What to do if a dose is missed	☐	☐	☐	☐	23
vi) How long to take it	☐	☐	☐	☐	24
vii) Side effects and what to do about them	☐	☐	☐	☐	25
viii) Precautions such as possible effects on driving	☐	☐	☐	☐	26
ix) Problems with alcohol and other drugs	☐	☐	☐	☐	27

x) Any other items which you consider to be important.

(Please specify) .....

.....

28 ☐

7c. If NO: Why do you think that a leaflet would not be helpful?:

You already know enough	☐
You would rather ask doctor/chemist	☐
More information would be worrying	☐
It would be inconvenient to read	☐
Some other reason	☐

Please tick one

30 ☐

ONLY ANSWER THE REMAINING QUESTIONS IF YOU HAVE TAKEN A PRESCRIBED MEDICINE IN THE LAST MONTH.

If you have been given more than one medicine, *choose one* and answer the questions for that one only.

8. Are you still taking this medicine?

57

Yes ☐ No ☐ ☐

If your answer is NO, miss out Question 9.

9. If YES: for how long have you been taking it?

Less than a week	☐	Please tick one	58 ☐
1–3 weeks	☐		
1–6 months	☐		
More than 6 months	☐		
Don't know	☐		

10. What is the medicine called?

..... Don't know ☐ 59 ☐ 60

11. Do you know any other names for it?

..... No ☐ 62 ☐

12. What was the medicine prescribed for?

..... Don't know ☐ 62 ☐

13. Do you know of anything else it can be prescribed for?

..... No ☐ 64 ☐

14. Is your medicine in the form of:

Tablets	☐	Please tick one	65 ☐
Capsules	☐		
Syrup	☐		
Other	☐		

15. Do you usually take your medicine:

On its own	☐	Please tick one	66 ☐
With a glass of water	☐		
With another drink	☐		
With a meal	☐		
With anything else	☐		

16. How easy is it for you to remember to take your medicine?

Very easy	☐	Please tick one	31 ☐
Fairly easy	☐		
A little difficult	☐		
Moderately difficult	☐		
Very difficult	☐		

17. How often do you forget a dose?

Very often	☐
Fairly often	☐
Sometimes	☐
Rarely	☐
Never	☐

Please tick one

32 ☐

18. If you forgot a dose, would you

Miss it out altogether	☐
Take it when you remembered	☐
Take it with your next dose	☐
Take it instead of your next dose	☐
Don't know	☐

Please tick one

33 ☐

19. Since you started taking your medicine have you missed out any doses on purpose?

Yes ☐ No ☐

34 ☐

If YES, for what reason? .....

20. Medicines can sometimes cause unwanted side-effects in some people. Write down any unwanted effects that you think your medicine could cause.

..... Don't know ☐

..... None ☐

.....

36 39 ☐☐☐☐

40 43 ☐☐☐☐

21. Have you had any of these side-effects yourself since you started taking your medicine?

Yes ☐ No ☐ Don't know ☐

46 ☐

If YES: which ones?

47 50 ☐☐☐☐

.....

51 54 ☐☐☐☐

.....

22. Do you feel better since you first started taking the medicine?

Much better	☐
A little better	☐
About the same	☐
Worse	☐

Please tick one

67 ☐

23. How much information has your own Doctor given you about the medicine which you are taking now?

Too much	☐
About the right amount	☐
Too little	☐
None at all	☐
Don't know	☐

Please tick one

68 ☐

THANK YOU FOR YOUR HELP. PLEASE RETURN THIS IN THE ENVELOPE PROVIDED.