The family medicine cabinet*

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SUMMARY AND CONCLUSIONS. Medicine selection and storage was examined in 130 families. Over 50 per cent were found to be less than adequate. Health education advice helped half the inadequate group to change to adequate. Age and social class were not related to hoarding of prescribed drugs, to initial standards of storage or selection, nor to the likelihood of a response to advice. Those who hoarded medicines but stored them well were highly likely to change. Those who stored and selected poorly were unlikely to make any changes. The 130 families had an average of 8.6 prescribed drugs per house, over half of which were completely out of date and were not being kept for emergency usage. There were also an average of 14.2 non-prescribed items per house, giving a total of 22.8 per house.

Introduction

LITTLE has been written since 1970 about the storage of medicines in the home. On a national level the research work of Dunnell and Cartwright (1972) assessed drug selection and storage in a national UK sample of 969 households, and found an average of 10.3 products per house (3.0 prescribed and 7.3 non-prescribed). Smaller surveys were performed in Norway (Gjemdal and Hjorten, 1979) and in Brisbane, Australia (Hayes et al., 1976), where there were 16.2 products per house (8.4 prescribed and 7.8 non-prescribed).

Aims

1. To record the presence of prescribed and non-prescribed medicines and their current usage.

2. To assess the safety of drug storage in the home.

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3. To give advice on how to improve safety of drug storage and selection, where appropriate.

4. To see if the advice had been followed.

Methods

The study was done in a rural dispensing practice serving a population of 12,000, and the data were collected during 130 consecutive daytime or urgent night visits by one trainee general practitioner. If the circumstances of the visit made it inappropriate to collect the research information (for example bereavement or an acute hospital admission), a project visit was made later.

Medicine storage was graded as follows:

Ideal: purpose-built cabinet containing all drugs and medicines, inaccessible to children. If locking—locked.

Adequate: not purpose built but storage in an area or site inaccessible to children (that is more than 4' 6" above floor level if children under five in home).

Inadequate: any other kind of medicine storage.

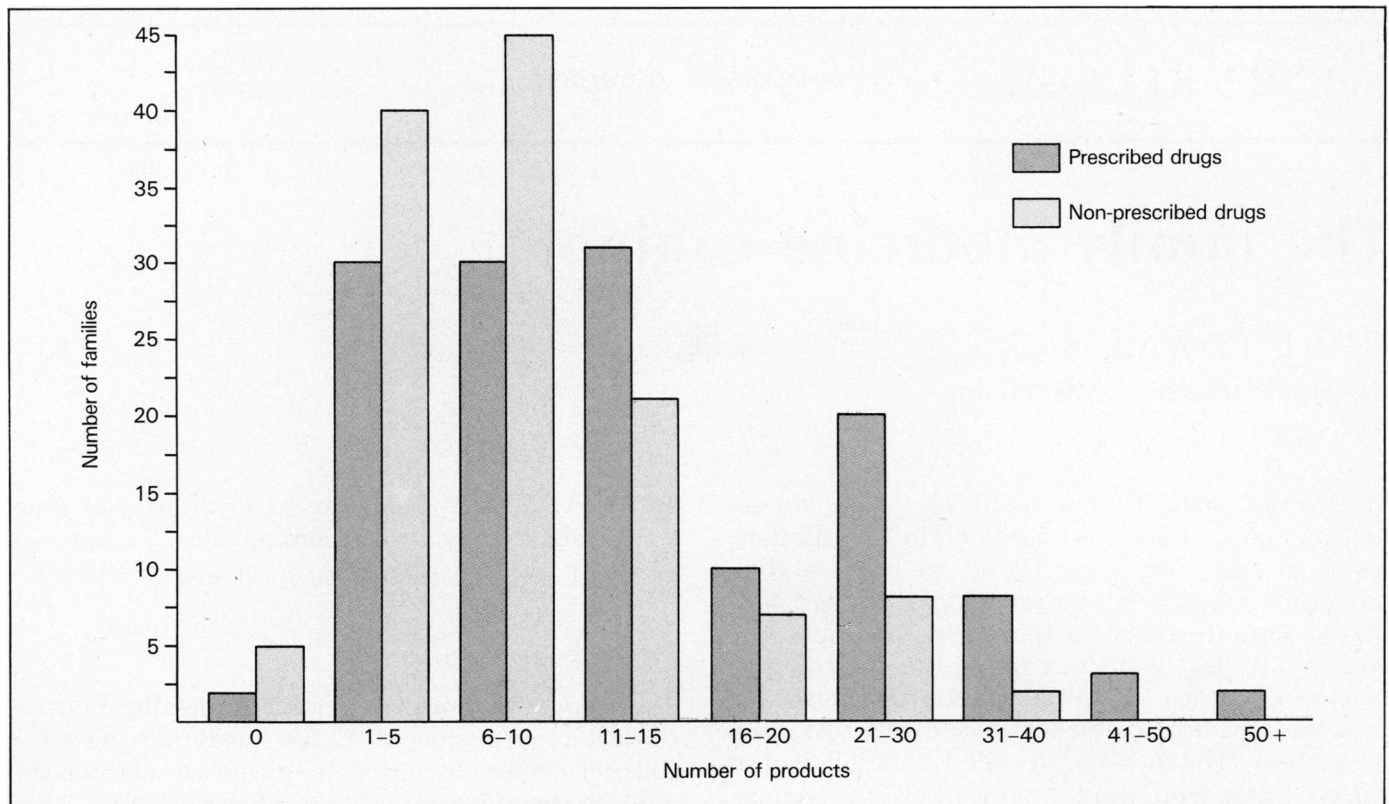The selection of prescribed and non-prescribed products was graded as follows:

Table 1. Usage of the major categories of prescribed medicines.

	In use or kept for emergencies	Unused	Total	Per cent unused
Hypnotics	31	19	50	38
Tranquillizers	25	19	44	43
Antidepressants	12	17	29	58
Analgesics/anti-inflammatories	105	76	181	41
Antibiotics	21	36	57	63
Steroid preparations— local and systemic	33	77	110	70
Beta-blockers/digoxin/ diuretics/ hypotensives	71	18	89	20

Number of prescribed and non-prescribed products kept.

Ideal: all prescribed medication in correct bottles, in date, and a selective but comprehensive range of chemist products. No out-of-date or unused prescribed medications.

Adequate: as above but with a maximum of two prescribed products out of current usage.

Inadequate: more than two products kept out of date or out of current or emergency usage and a poor selection, if any, of non-prescribed products.

At the initial project visit I recorded demographic data about the household, and details of prescribed and non-prescribed drugs, dressings and other products. If either storage or drug selection was inadequate I gave verbal advice and left a printed leaflet of explanation. I made a further unannounced visit approximately one month later to assess any changes made. It took about 30 minutes to apply the questionnaire and give the advice; the subsequent visit took about 10 minutes. No patients declined to enter the survey.

I used a pilot trial of 12 visits to test the questionnaire design, to become accustomed to giving the health education advice in as standard a manner as possible, and to assess the patients' acceptance of the enquiry.

Results and discussion

The methods proved satisfactory in the pilot trial and these results were included in the main survey. One person refused a second visit and three had died between

Table 2. Number of families (*n* = 130) possessing non-prescribed products.

	Number	Percentage
Analgesics		
Nil	17	*13*
One to three	113	*87*
Four or more	29	*22*
Gastro-intestinal products		
One	104	*80*
Three or more	31	*24*
Respiratory products		
One	101	*78*
Three or more	52	*40*
Bandages	72	*55*
Antiseptics	96	*74*

visits. The 130 families were grouped according to age and social class. About one third were families with young children, about a third were 40–65 years old and about two fifths were over 65. Social class analysis by head of household showed that 40 per cent were in social classes I and II, 28 per cent in III and 32 per cent in IV and V; the sample was thus heavily biased towards the better-off.

The average household possessed 22.8 products; an average of 8.6 were prescribed (maximum 32) and 14.2 non-prescribed (maximum 70). An average of 3.8 prescribed medicines were in current use or were being kept "just in case"; 4.8 were out of date.

Table 3. Adequacy of drug storage and selection (n=130).

Storage	Selection			
	Ideal	Adequate	Inadequate	Visit
Ideal	0	1	2	First
	6	0	0	Second*
Adequate	15	45	24	First
	17	68	4	Second*
Inadequate	0	4	39	First
	0	10	21	Second*

*Four families were not assessed a second time.

Table 1 shows the usage of the major categories of prescribed medicines. There were more short-term than long-term medications left unused, and more preparations of the kind that are widely said to be overprescribed (for example antibiotics, topical steroids and antidepressants). Fifty-seven families were found to have 128 prescribed medicines of which they had used none or only a tiny amount. There was no correlation in these families between age and social class and the presence of unused medicines. There was, however, a highly significant correlation ($p < 0.001$) between the presence of these 'never used' medicines and inadequate drug storage.

The Figure shows that most families kept betweeen one and 15 prescribed and one and 10 non-prescribed products. Of the 17 families with no non-prescribed analgesics, only four did not keep any prescribed by a doctor. Table 2 shows some of the non-prescribed products I found.

Drug storage and selection are shown in Table 3. At the first visit 61 families (47 per cent) were found to store and select their drugs at least adequately, and at follow-up this figure rose to 91 (70 per cent). Of the original group of 69 families who were inadequate on either storage or selection, 31 changed to adequate on both, but 35 were still less than adequate (27 of these 35 patients having made no change at all). The majority of the inadequate group were either adequate storers but inadequate selectors, or inadequate storers and inadequate selectors. It was highly significant ($\chi^2 14$; d.f.1; $p < 0.001$) that the former group were able to make changes by disposing of unused medicines; the latter group tended to make no changes at all. About half of those in the inadequate group were helped to change to adequate; those who were helped most stored adequately at first, but had an inadequate selection.

References

Dunnell, K. & Cartwright, A. (1972). *Medicine Takers, Prescribers and Hoarders*. London: Routledge and Kegan Paul.

Gjemdal, E. & Hjorten, A. (1979). 117 medicine cabinets. *Tjidsskrift for den Norske Laegeforening*, **99**, 880-883.

Hayes, P., Hickey, K., Lovell, S. et al (1976). Storage of drugs in homes. *Medical Journal of Australia*, **1**, 235-236.

Metabolic control in insulin-dependent diabetics

The effect of six months of strict metabolic control upon eye and kidney function was studied in 32 insulin-dependent diabetics randomized either to unchanged conventional treatment (UCT) or to continuous subcutaneous insulin infusion (CSII). Individual median blood-glucose levels during the six months were 9.2 ± 2.0 mmol/1 (mean ± SD) in the UCT group and 5.6 ± 0.7 mmol/1 in the CSII group. The UCT group showed a distinct improvement. This interim report of a one-year study supports the view that long-term control achieving near-normal blood-glucose levels may arrest or even reverse some of the features associated with diabetic microangiopathy.

Source: Steno Study Group (1982). Effect of six months of strict metabolic control on eye and kidney function in insulin-dependent diabetics with background retinopathy. *Lancet*, **1**, 121-123.

Sodium restriction in hypertension

Nineteen unselected patients with mild to moderate essential hypertension whose average supine blood pressure after two months' observation on no treatment was 156/98 mm Hg were advised not to add salt to food and to avoid sodium-laden foods. After two weeks of sodium restriction, patients were entered into an eight-week double-blind randomized crossover study of 'Slow-sodium' (Ciba) versus slow sodium placebo. The mean supine blood pressure was 7.1 mm Hg (6.1 per cent) lower in the fourth week of placebo than that in the fourth week of slow sodium ($p < 0.001$). Moderate sodium restriction should become part of the management of essential hypertension.

MacGregor, G. A. et al. (1982). Double-blind randomized crossover trial of moderate sodium restriction in essential hypertension. *Lancet*, **1**, 351-354.