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Practice Research

List size and patient contact in general medical practice

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Abstract

One hundred and ninety nine general practitioners collected data on consultations with patients for a representative sample of recording days. The number of consultations and amount of time spent in patient contact were positively correlated with the number of registered patients (list size), whereas the consultation rate and the amount of time spent with each patient were negatively correlated. These relations, however, were not too strong, and there was considerable variation among doctors, particularly for those with lower list sizes. These findings have implications for issues concerning quality of care and the potential effects of reductions in patient list size.

Introduction

Surprisingly little information is available on the number of patients seen by general practitioners, the amount of time spent with each patient, or the length of time doctors spend in surgery and on home visiting. Still less is known about the relation between the number of patients on a general practitioner's list and the frequency and duration of contacts between doctor and patients. Such information is relevant to debates about the quality of care in general practice if it is assumed that the amount of time available is a constraining factor in the achievement of quality. Since the remuneration of general practitioners

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is related to the number of patients on the list there is a potential conflict between the understandable desire to maximise income and the desire to provide high quality care.

The most comprehensive review of the information available on these subjects was provided by Butler in 1980, who summarised the evidence from many small and a few larger studies of general medical practice. With respect to the time spent in consultations with patients each week, including immediately associated activities such as administration and travelling to home visits, he estimated that the average lay between 35 and 42 hours, but that the range was somewhere between 25 hours and 55 hours. The mean duration of each surgery consultation was estimated to be between 5.0 and 6.5 minutes and each home visit between 10 and 15 minutes. In examining the frequency of contact on the basis of 80 observations derived from 24 different studies the mean surgery consultation rate (consultations per patient per year) was 3.2 and the home consultation rate 1.3. The largest provider based study, the Second National Morbidity Study, reported an overall consultation rate for 1971-2 of 3.2. In contrast, the largest consumer based study, the General Household Survey, reported a consultation rate of 3.8.

Apart from building a descriptive picture of general practice, Butler used the available studies to examine the relations between list size and the frequency and duration of patient contact. He concluded that the available data were inconclusive with respect to the amount of time spent with patients. The total time spent in the practice was as likely to reflect personal and idiosyncratic considerations as any systematic variation in list size. With respect to the average duration of consultations the evidence suggested that list size was not usually an important determinant of the duration of consultations. Consultation rates did show a broad negative association with list size for both surgery and home consultations. Butler was careful, however, to point out the weaknesses of the data on which these conclusions were based. In particular, he drew attention to the fact that most of the reported studies were of self selected practitioners, and differences in the

definitions and methodologies used suggested a need for caution in interpretation. Indeed, the firmest conclusion was that much remains obscure about the ways in which the frequency of consultations, the time devoted to each consultation, and the time in total patient contact may be related to the total number of patients cared for.

More information is needed about all aspects of general medical practice to inform debates about the future of primary health care, not least as a background to the formulation of policy locally and nationally. The pressure of work or constraints of time are often used as reasons for patterns of care which fall short of or deviate from acceptable standards. Perceptions of pressures and time constraints may differ from the reality. It is important to examine the problem so that the debate about quality of care may proceed in the context of an accurate estimate of the amount of work undertaken and the time available.

This paper presents evidence on the frequency of and length of time spent in patient contact for a large representative sample of urban general practitioners. These data may also be related to variations in the number of patients on individual doctors' lists.

Methods

The research area consisted of five health districts and part of a sixth, all around Manchester. (The inclusion of general practitioners practicing in part of a sixth district accounts for the difference in the number of participating doctors referred to in this paper and in the previous paper.¹) To achieve maximum coverage all doctors practicing in these districts were invited to be interviewed for a study of the structure of general practice.² There were 522 general practitioners, of whom 397 (76%) agreed to be interviewed. All 397 doctors were asked to participate in a subsequent study of the process of care.³ 240 (60%) agreed to do so and began collecting data. Most studies of general practice in the United Kingdom have either been conducted by individuals or small groups of doctors on their own practices or they have relied on general practitioners to present themselves as volunteer participants. Despite the undoubted value of these studies there is good reason to suppose that the often arduous collection of data and the need for doctors to take the initiative by volunteering discourage many from participating in research. Although the response rate for the present study was by no means ideal, it is a great improvement on anything currently available. Two hundred and one general practitioners (39% of all those in the study area) completed data collection; 199 of these had lists of more than 1000 registered patients, and this group is included in the analyses that follow. The participating doctors were broadly representative of all general practitioners in the study area (table 1), but participants differed from non-participants in respect of age of doctor and patient list size. The study underrepresents older general practitioners in

TABLE 1—Comparison of participating and non-participating doctors (percentage)

Characteristics of doctors and practices	Participants (n=199)	Non-participants (n=323)	All general practitioners (n=522)
Sex			
Male	85	77	72
Female	114	146	160
Age (years)			
30-39	3	3	3
40-49	27	22	24
50-59	27	27	27
60 and over	43	48	46
Country of origin			
United Kingdom and Isle of Man	199	200	399
Elsewhere	19	23	42
Size of partnership			
One	19	21	20
Two	17	22	20
Three or four	11	11	11
Five or more	5	11	8
Number of patients on list			
1500-1999	25	13	19
2000-2999	27	23	25
3000 or more	12	4	8

Results

Table 1 shows the overall distributions for each of the patient contact variables and the relation among these and list size for three broad groupings of list size. Twenty two per cent of general practitioners saw fewer than 101 patients each week and 32% saw more than 160. The range was from 26 to 295. Consultation rates, which describe the average annual frequency of contact per patient on the doctor's list, show the same variation, ranging from 0.6 to 6.5. Both number of consultations and consultation rate were related to list size. For list sizes of up to 2000 patients 46% of doctors saw fewer than 101 patients each week and 42% had a consultation rate below 3.5. The converse was true for larger lists (over 2500 patients), 46%

TABLE 1—Frequency and duration of patient contact by list size

	List size			
	<2000	2001-2500	>2500	Total
	(n=57)	(n=73)	(n=69)	(n=199)
No. of consultations per week				
<80	17 (30)	2 (3)	3 (4)	22 (11)
80-100	9 (16)	16 (22)	17 (25)	42 (21)
101-120	6 (11)	6 (8)	6 (9)	18 (9)
121-140	11 (19)	16 (22)	11 (16)	38 (19)
141-160	6 (11)	15 (21)	15 (22)	36 (18)
161-180	7 (12)	14 (19)	12 (17)	33 (16)
>180	4 (7)	10 (14)	20 (29)	34 (17)
Consultation rate				
2.0-2.49	11 (19)	3 (4)	10 (15)	24 (12)
2.5-2.9	6 (11)	13 (18)	22 (32)	41 (20)
3.0-3.49	6 (11)	21 (29)	13 (19)	40 (20)
3.5-3.9	11 (19)	12 (16)	2 (3)	25 (13)
>4	4 (7)	10 (14)	14 (20)	28 (14)
Time spent in patient contact per week (h)				
<12-16	21 (37)	4 (6)	6 (9)	31 (16)
16-20	14 (25)	16 (22)	10 (15)	40 (20)
20-24	12 (21)	18 (25)	11 (16)	41 (20)
24-28	2 (4)	20 (27)	21 (30)	43 (21)
>28	2 (4)	1 (1)	2 (3)	5 (2)
Minutes spent in surgery and home visits per patient per year				
<15	6 (14)	3 (4)	12 (17)	21 (12)
15-19.9	10 (18)	14 (19)	7 (10)	31 (16)
20-24.9	13 (23)	13 (18)	22 (32)	48 (24)
25-29.9	10 (18)	13 (18)	9 (13)	32 (16)
>30	13 (23)	7 (10)	1 (1)	21 (11)
Average surgery consultation rate				
<4	4 (7)	1 (1)	6 (9)	11 (6)
4-9	9 (16)	9 (12)	5 (7)	19 (10)
9-14	10 (18)	11 (15)	9 (13)	30 (15)
>14	14 (25)	11 (15)	6 (9)	31 (16)

FIG 1—Number of consultations per week by list size groups.

seeing more than 160 patients per week and 41% having consultation rates below 2.5. Although these relations were quite clear, there were sizeable minorities who did not conform to the general pattern. Thus, for example, 30% of those with lists up to 2000 had consultation rates below 2.5, but only 9% of those with lists of more than 2500 had consultation rates of 1.5 or higher.

The amount of time spent in patient contact clearly reflects the number of consultations. Sixteen per cent of general practitioners spent less than 12 hours each week seeing patients, but 10% spent more than 28 hours. The range was from five hours to 46 hours. The amount of time spent in patient contact was negatively correlated with list size (fig 2). The pattern was not consistent over the full range of list sizes. Only for lists of more than 2500 patients did there seem to be a consistently lower consultation rate. Figure 3 shows a similar pattern in relation to time. Mean time spent in patient contact increased with list size, although there was relatively little variation in the middle range of list sizes (2001-2500 patients). The reverse is true for the mean length of time spent per patient per year, which was negatively correlated with list size (fig 4).

FIG 2—Minutes spent per patient per year by list size groups.

In this case there was a noticeable decline in the amount of time for list sizes of more than 2500. Lastly, fig 5 shows only a slight relation between average consultation rate and list size. There was little variation up to list sizes of 2750 and only a slight decline for those doctors with the longest lists.

The mean values presented in figs 1-5 should be interpreted with some caution since they conceal a considerable range within list size groupings. Variations tended to be greater among those general practitioners with relatively low list sizes, and least among those with large lists. Table 11 shows the coefficients of variation for general practitioners with lists up to 2000 and for those with lists of more than 2750. The coefficient of variation expresses the relative magnitude of variation around the mean as a percentage. In each case there is more variation for the low list sizes. This suggests that where the general practitioner's list was relatively small the number and duration

Most doctors (62%) with lists of 2000 patients or fewer spent no longer than 16 hours in patient contact each week. Their colleagues looking after more than 2500 patients usually spent more time in patient contact, 30% more than 24 hours. A quarter of this group, however, spent 16 hours or less. The implications of these patterns for patients may be seen by examining the average amount of time devoted to each patient on the list over a year: 31% of general practitioners were in contact for an average of less than 20 minutes per patient per year and 25% for 30 minutes or more. Though small list

FIG 3—Consultation rate by list size groups.

sizes were associated with more time per patient, the relation was not strong. A third of those with lists of 2000 or fewer patients spent more than 30 minutes per patient, but a quarter of the same group spent less than 20 minutes. For large list sizes the relation was clearer, only 13% spending more than 30 minutes and only one doctor spending more than 35 minutes. Average surgery consultation times ranged from four to 15 minutes. Forty three per cent of general practitioners with lists of up to 2000 patients had average consultation times of more than eight minutes, but 16% had averages below six minutes. There was only a weak relation between list size groups and average consultation times.

Figures 1-5 show the means for each of the patient contact variables for general practitioners in seven list size groupings. The number of consultations per week shows a consistent relation with list size, although between 2000 and 2750 there was little difference in the total number of consultations. The correlation coefficient for number

TABLE 11—Coefficients of variation for high and low list sizes

	List size	
	<2000	>2500
No. of consultations per week (s.d.)	43 (8)	48 (24)
Annual consultation rate (s.d.)	40 (8)	48 (24)
Time spent in surgery and on home visits per patient per year (s.d.)	42 (27)	40 (24)
Minutes spent in surgery and on home visits per patient per year (s.d.)	26 (20)	20 (20)
Average consultation rate (s.d.)	26 (20)	20 (20)

of consultations might have been influenced by variables other than list size. In contrast, for larger lists it seemed that the number of patients for whom care was provided reduced the scope for variation in the number of consultations and the amount of time spent, both in total and on each patient. For average consultation time coefficients of variation were similar for both small and large lists.

Discussion

The evidence presented above is derived from a large and representative group of general practitioners who practise in and around Manchester. It differs from other such studies, not only in the number of general practitioners participating but also in the degree of bias likely to have been introduced through self selection. The demands made on participating general practitioners, in terms of the length of the recording period and the amount of detail required, were much less than in most other studies. Relatively short recording periods, a simple encounter form, and substantial clerical help ensured the cooperation of many doctors who might otherwise have been unable to devote the time to research. There was no evidence of underreporting, except perhaps a slight underestimation of home visits. Thus the data are likely to be more representative than those used in most other studies of this topic. We emphasise, however, that this was not a study of the total workload of general practitioners. The data refer to time spent by doctors in contact with their registered patients and the frequency of contact. This is only part of the general practitioners' work since it does not include other aspects of patient care or activities not directly connected with patient care.

If the amount of time available is a constraining factor in the provision of high quality care the wide range of behaviour among general practitioners must raise questions about whether patients who attend different doctors receive care of similar quality. It is sometimes argued that the demands of providing basic care for even an average size list of patients leave insufficient time to provide the highest quality of care. Our evidence shows, however, that there are considerable differences among general practitioners in the amount of time spent in patient contact, regardless of list size: 36% spent less than 16 hours per week in consultations with patients, and 21% spent more than 24 hours. Doctors may see these differences as part of the variation in workload among different sorts of practices. Patients may see the variation as a reflection of important differences in the accessibility of general practitioners (and thus other parts of the Health Service) and in the amount of the doctor's time available to them. Clearly, patients who are registered with different general practitioners will have very different experiences of both the frequency with which they see the doctor and the amount of time used. What we do not know is what effect these differences have for health outcomes for the patients.

We have concentrated our analyses on the relation between patient contact variables and list size. As we said in the introduction, the importance of list size lies in its assumed relation to workload and quality of care, and because of this, in its use as a partial determinant of the level of remuneration of general practitioners. The evidence shows positive correlations between list size and number of consultations and the amount

ONE HUNDRED YEARS AGO

It is satisfactory to note that the important Government Department over which Mr. Mundree presides, as Vice-President of the Council of Education, is alive to the sanitary necessity of providing playgrounds for the children attending public elementary schools. In reply to a memorial sent by the Manchester and Salford Sanitary Association in favour of the provision of suitable playgrounds for the children of the poorer districts of the city, it has long been the policy of the department to require a playground to be attached to a school, especially to an infant school, and that in every case in which loans are made to school boards for the purpose of providing schools, the department always requires that a playground should be provided. It is a matter of course that the cost of obtaining land for the purpose is often very serious. The reply further states that, if there are any schoolhouses now under the jurisdiction of school boards which are without playgrounds, the department will be glad to give assistance in the acquisition of school grounds in supplying

British Medical Journal, 1910, 2, 73.