

Study of the effect of time availability on the consultation

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SUMMARY. *This study looked at the effect of different appointment time intervals on process and outcome measures in the consultation. Over a five-month period patients attending a two-partner surgery were non-systematically allocated to appointments at five, 10 or 15 minute intervals. Consultations were audiotaped and analysed. When appointments were scheduled at longer intervals, doctors asked significantly more questions and made significantly more statements explaining the problem and its management, while patients asked significantly more questions and made significantly more statements of their own ideas about the problem. In consultations booked at shorter intervals patients were significantly more likely to report in satisfaction questionnaires that they had little or far too little time available. The implications of the results for future planning are discussed.*

Introduction

IT is now routine for general practitioners to learn and teach consultation skills. However, there have been comparatively few attempts to measure the process and outcome of the consultation. Verby¹ demonstrated that general practitioners could improve their consultation skills using peer review of audiovisual recordings, but at the expense of a 40% increase in the length of consultations. He also found a positive correlation between time spent and consultation 'score' in the control group. This led Roland, Morrell and colleagues² to propose that a doctor's ability to communicate effectively may be largely a function of the time available for the consultation. Their study measured the effect of different booking times on verbal communication, other clinical content and patients' satisfaction with the consultation.^{2,3} Patients attending one practice were allocated non-systematically to surgeries booked at five, 7.5 or 10 minute intervals. Some aspects of verbal communication improved significantly in longer consultations whereas physical examinations and other aspects of clinical content varied comparatively little.

The study was criticized on two counts. First, it was undertaken in an inner city practice and it was not clear whether the results would apply to other practices. Secondly, the doctors usually booked patients at 6.7 minute intervals, so booking patients at five minute intervals did not involve a large reduction

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in booking time. It was argued that lack of change in some variables, like physical examinations, might be due to this. A significant change in response variables might occur if, for example, doctors who usually booked patients at 10 minute intervals were constrained to five minute appointments.

In order to answer these criticisms we decided to replicate the experiment in a practice which serves a suburban population, and which usually books patients at 10 minute intervals. One new concept was added; Pendleton and colleagues⁴ have emphasized the importance of routinely enquiring about patients' ideas and concerns and Tuckett⁵ and co-workers found that patients were rarely given the opportunity to express their own ideas. We therefore decided to include patients' ideas and concerns as response variables in this study. The 10 hypotheses were that in surgery sessions booked at 15 minute intervals compared with 10 and five minute intervals the following differences would be recorded — doctors would spend more time with patients; doctors would ask more questions; patients would answer more questions; patients would express more ideas about their condition; doctors would give more explanations; more patients would have physical examinations; more problems, including psychological problems, would be identified; fewer prescriptions would be issued; patients would report more satisfaction with the amount of time spent; and patients would initiate fewer consultations in the ensuing four weeks.

Method

Informed consent was obtained from patients and the trial was approved by the local medical ethics committee. All patients who consulted over a five-month period in 1987-88 and who agreed to participate were included. The practice is in Thames Ditton, Surrey, and consists of two doctors and a population of approximately 2000 patients. The area is a suburb on the outskirts of London, many of the patients being London commuters. Appointments are usually scheduled at 10 minute intervals.

Experimental surgery sessions

The study employed the design and instruments described by Morrell and colleagues.^{2,3} The following changes were made. During the study equal appointment intervals were booked for all patients in any particular week. This was to prevent receptionists allocating patients to different booking times available in the same week on the basis of their perception of the patient's need for time. The appointment book was marked up so that in week 1, all surgeries were booked at five minute intervals; in week 2, all surgeries were booked at 10 minute intervals; and in week 3, all surgeries were booked at 15 minute intervals. In subsequent weeks the cycle was repeated, so the doctors experienced a different booking interval each week over the five months. Each of the two doctors undertook four experimental surgeries per week, two in the morning and two in the evening. On arrival at reception all patients were asked for written consent for their consultation being audiotaped. The actual length of the consultation was recorded from the audiotape to the nearest 0.01 of a minute. The verbal content of all the audiotaped consultations was analysed by J.R. She learned the method using the instructions from Morrell's study and in collaboration with Bartholomew, who had undertaken the consultation rating for that study. The method of analysis was originally developed by

Bain⁶ and modified for both experiments. A systematic sample of 20 consultations were rerated by the same person at the end of the study. In comparing the two ratings, the difference was calculated, together with within subject and between subject variance.⁷

The method of data collection and analysis was the same as that employed by Morrell's group, except that consultations were not included if patients had consulted within the previous four weeks, so a greater proportion of new illness episodes were included in this study. In analysing physical examinations, doctor and patient initiated consultations were considered together.

Observer variability

As with Morrell's study there was considerable observer variability in rating the number of statements made, sometimes exceeding 50% of the variance. However, the rater was not told whether she was listening to consultations booked at five, 10 or 15 minute intervals, and actual consulting time varied considerably regardless of booking time. As the observer was effectively 'blind', the effect of observer error was unlikely to be systematic. It is likely that if measurement of numbers of statements could have been more precisely standardized, the trends actually identified would have been still more statistically significant.

Regression analysis of the various outcome variables was carried out to assess possible trends between outcomes seen at five, 10 and 15 minute interval surgeries. Allowance was made for the possible confounding effects of age and sex, and which of the two doctors was consulting. However, these variables did not alter the trends, which are therefore reported without any adjustment. Binary variables, such as carrying out an examination, were analysed using logistic linear models, while counted variables such as number of questions asked by the doctor, were regarded as Poisson variables and log linear models were fitted.⁸

Results

Actual time spent with patients

Thirty six patients decided not to participate in any part of the study. Some patients asked us not to record their consultations, but agreed to participate in other ways, such as completing a satisfaction questionnaire.

From 961 consultations, complete tapes and data were collected in 914 (95%). The mean time actually spent with each patient increased as the booking interval increased (Table 1). In the sessions booked at five minute intervals, the mean time spent with each patient was 6.6 minutes (95% confidence interval 6.2 to 7.0 minutes). In sessions booked at 10 and 15 minute intervals, the mean consultation times were 8.0 minutes (95% confidence interval 7.5 to 8.5 minutes) and 9.2 minutes (95% confidence interval 8.6 to 9.8 minutes).

Table 1. The mean, median and range of times recorded on audiotape for consultations booked at five, 10 and 15 minute intervals.

Booked time (min)	Number of consultations	Actual consultation time (min)		
		Mean (SD)	Median	Range
5	339	6.6 (3.5)	5.9	1.0-22.6
10	259	8.0 (4.3)	7.5	1.0-24.0
15	316	9.2 (5.2)	7.9	0.7-29.5

SD = standard deviation.

Verbal statements made

Table 2 shows that in consultations booked at longer intervals, there was a significant trend towards the doctor asking more questions ($P<0.001$), facilitating more ($P<0.001$), and giving more psychosocial leads ($P<0.05$). In addition, there was a significant trend towards the doctor explaining the problem ($P<0.001$) and

Table 2. Percentage of consultations in which the number of statements was greater than the overall median, and the mean number of statements made.

Statements	Overall median number of statements per consultation	Percentage of consultations with more than median number of statements in surgeries booked at:			Mean number of statements made in surgeries booked at:		
		5 min (n = 339)	10 min (n = 259)	15 min (n = 316)	5 min (n = 339)	10 min (n = 259)	15 min (n = 316)
<i>Statements by doctor</i>							
D1 Social exchange	0	12.7	18.5	16.5*	0.1	0.2	0.2*
D2 Facilitation/encouragement	1	43.4	50.2	51.3***	2.6	3.9	4.0***
D3 Asking questions	7	39.2	51.0	53.8***	7.2	8.9	9.3***
D4 Psychosocial leads	0	36.3	38.6	40.8*	0.9	1.1	1.4*
D5 Statements explaining problem	3	41.3	46.7	58.5***	4.0	4.3	5.1***
D6 Statements explaining management	5	45.1	45.9	50.0***	5.9	5.8	6.8***
D7 Prevention and health education	0	27.1	26.3	26.6	0.3	0.3	0.3
<i>Statements by patient</i>							
P1 Social exchange	0	12.7	18.5	16.5*	0.1	0.2	0.2*
P2 Presentation of problem	4	40.7	39.4	44.9*	4.4	4.5	4.8*
P3 Answering questions	7	43.1	55.6	57.9***	7.8	9.4	10.2***
P4 Asking questions	2	33.9	32.8	40.8***	2.1	2.2	2.6***
P5 Expression of ideas about condition	1	28.3	36.7	42.1***	1.1	1.6	1.6***
P6 Expression of concerns about condition	0	20.6	20.5	19.0	0.3	0.4	0.3

* $P<0.05$, *** $P<0.001$, test for trend from log linear models. n = total number of consultations audiotaped.

its management to patients ($P<0.001$). However, there was no trend towards more prevention and health education in consultations booked at longer intervals.

There was no social exchange in 84% of consultations, but there was a trend towards more social exchange between doctor and patient when surgeries were booked at longer intervals ($P<0.05$). In consultations booked at longer intervals, there was a significant trend towards patients making more statements presenting the problem ($P<0.05$), answering more questions ($P<0.001$), asking more questions ($P<0.001$) and expressing more ideas about their condition ($P<0.001$) but no increase in expressions of concerns.

Physical examination of patients

The examinations carried out were classified into eight systems, with blood pressure, vaginal and rectal examinations itemized separately. At least one of the 11 named types of examination was examined in 83% of consultations (Table 3). Increased time available did not lead to a significant increase in the number of examinations of any type, except for vaginal examinations; significantly more vaginal examinations were carried out when consultations had been booked at 15 minute intervals (odds ratio 2.9, 95% confidence intervals 1.3 to 6.6).

Table 3. Percentage of consultations at which examinations took place.

Examinations carried out	Percentage of consultations in surgeries booked at:		
	5 min (n = 348)	10 min (n = 277)	15 min (n = 336)
Any examination	82	83	83
Ear, nose and throat	21	23	23
Chest	18	22	17
Blood pressure	22	17	16
Skin	14	19	19
Abdomen	13	10	12
Joints	8	9	10
Eyes	6	4	4
Vaginal ^a	3	2	7
Cardiovascular system	4	3	3
Rectal	2	2	3
Nervous system	1	1	2

n = total number of consultations. ^an = 229, 190 and 227 for women over 16 years.

Problems recorded, prescribing and return consultations

The doctors did not record more problems, including psychological problems, in longer consultations, nor did they issue fewer prescriptions overall or for antibiotics or psychotropic drugs in particular (Table 4). There was no significant association between booking longer consultations and patients returning in the ensuing month.

Patient satisfaction

As Table 5 shows, patients were significantly more likely to complain that they had 'too little' or 'far too little' time with the doctor in surgeries booked at shorter intervals. The test for trend was statistically significant ($P<0.05$). After consultations booked at longer intervals, patients were more likely to report that they felt very free to discuss problems and very free to tell doctors about their ideas and concerns, but the trends were not significant at the 5% level. Only two-thirds of patients reported they felt very free to discuss their ideas and concerns.

Table 4. Problems recorded, prescriptions issued and return consultations.

Event	Percentage of consultations with events recorded in surgeries booked at:		
	5 min (n = 348)	10 min (n = 277)	15 min (n = 336)
Two or more problems recorded	14	19	14
Psychological problem recorded	8	8	5
Prescription issued	61	63	58
Antibiotic prescribed	22	26	22
Psychotropic drug prescribed	3	3	2
Doctor asked patient to return	20	19	23
Patient returned for one or more consultations in subsequent four weeks	30	29	31

n = total number of consultations.

Table 5. Patients' responses to satisfaction questionnaire.

Patients' response to satisfaction questionnaire	Percentage of patients (total number of questionnaires) attending surgeries booked at:		
	5 min	10 min	15 min
Little or far too little time available	9 (340)	5 (261)	3 (319)*
Very free to discuss problems	66 (334)	68 (257)	71 (314)
Very satisfied with information received about condition (of those who said that they needed information)	91 (218)	91 (170)	91 (200)
Very free to tell doctors about ideas and concerns	62 (328)	60 (248)	68 (306)

* $P<0.05$

Discussion

Six of the 10 hypotheses were supported by the data collected. Doctors did spend more time with patients when the booking interval was increased, although the effect was not as large as might have predicted from the larger variation in booking time (from five to 15 minutes) compared with Morrell's study (between five and 10 minutes).³ It is likely that when appointment times are varied on a weekly basis, doctors adapt to the time available much less than they would do if appointment times are changed on a long term basis. The change in other variables, however, suggests that small differences in actual time spent are associated with significant changes in behaviour.

Our evidence supports Morrell's finding that in longer consultations doctors ask more questions and patients answer more questions. Clearly clinical problem-solving does not depend only on the quantity of data collected. But given equal capacity for clinical reasoning, it seems likely that doctors with a fuller history will come to more informed judgements in the consultation than those with less information.

Medical students and general practitioner trainees are increasingly schooled in the technique of eliciting patients' ideas and concerns. Our study introduced the hypothesis that in longer consultations patients would express more ideas about their condition and there was indeed a significant trend towards more

ideas being expressed in consultations booked at longer intervals. In the satisfaction questionnaire, more patients reported they felt very free to tell doctors about their ideas and concerns when the booking interval was 15 minutes, but the increase was not statistically significant.

General practitioners are being urged to take a more consumerist approach to patient care and in Cartwright and Anderson's study the most common complaint that patients made was that doctors did not explain things fully.⁹ The evidence from our study adds weight to Morrell's findings that in consultations booked at longer intervals, general practitioners made more statements explaining the problem and management. Tuckett has argued that explanations will be more educationally effective if they are expressed in response to patients' questions and ideas;⁵ an important new finding therefore was that patients also asked significantly more questions in longer consultations.

It may be argued that it is obvious that longer consultations will have more content and one might therefore expect similar increases in all the measures of behaviour. However, the results of this study are consistent with Morrell's findings that booking times did not affect the number of physical examinations which doctors perform. The exception to this was that in consultations booked at 15 minute intervals, vaginal examinations were more likely to be undertaken. One explanation is that general practitioners find this examination particularly time-consuming so they will not carry it out when there are constraints of time.

Contrary to Morrell's findings, longer consultations did not lead to more problems, including psychological problems, being recorded in the notes. The extent to which difference in the space available to store records affected the recording of diagnostic information is not clear. Morrell's practice uses A4 size records, so an increase in note-taking would not present problems of space, whereas the Thames Ditton practice uses traditional Lloyd George envelopes and cards which may reduce the general practitioner's propensity to record additional information. Little is known about this issue, but it has important implications both for the primary care team and for researchers.

Results from observational studies¹⁰ which compared different practices had suggested that an inverse relationship would exist between consultation length on the one hand, and prescribing and follow-up consultations on the other. However, the evidence from the experimental studies of ourselves and Morrell and colleagues does not support this hypothesis. It is possible that attributes such as consultation interval and prescribing levels cluster together in practices, because both are a function of general practitioners' attitudes, which act as a confounding variable in observational studies. When doctors' attitudes are held constant by using the same doctors in an experiment, the proposed relationship between consultation length on the one hand, and prescribing and follow-up consultations disappears.

Research into the consultation tends to focus on process. One outcome is patient satisfaction. Morrell had found trends towards increased satisfaction with longer consultation intervals. However, the results fell short of significance at the 5% level. In this study, patients were significantly more likely to be satisfied with the time available in consultations booked at longer intervals. Other studies^{11,12} have shown an inverse relationship between time spent with each patient and list size. If recent government proposals^{13,14} lead to higher list sizes and consequently less time spent with each patient, this policy is likely to result in decreased consumer satisfaction.

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MRCGP Examination

The dates for the next two examinations for Membership of the College are as follows:

May/July 1990

Written papers: Wednesday 9 May 1990 at centres in London, Manchester, Edinburgh, Newcastle, Cardiff, Belfast, Dublin, Liverpool, Ripon, Birmingham, Bristol and Sennelager. Oral examinations: in Edinburgh from Monday 25 to Wednesday 27 June inclusive and in London from Thursday 28 June to Saturday 7 July inclusive. The closing date for the receipt of applications is Friday 23 February 1990.

October/December 1990

Written papers: Tuesday 30 October 1990. Oral examinations: in Edinburgh on Monday and Tuesday, 10-11 December and in London from Wednesday to Saturday, 12-15 December inclusive. The closing date for the receipt of applications is Friday 7 September 1990.

Proficiency in basic cardiopulmonary resuscitation is now an entrance requirement for the MRCGP examination. Further details about the examination and an application form can be obtained from the Examination Department, Royal College of General Practitioners, 14 Princes Gate, London SW7 1PU.