Singapore Med J 1999; Vol 40(1):13-17

Consultation Length and Case Mix in a General Practice Clinic

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ABSTRACT

Objective: This study was conducted to determine the mean consultation length in a general practice clinic for all cases as well as for acute and chronic conditions.

Methods: The main diagnosis or reason for encounter in a general practice clinic from 25 April to 15 May 1994 was coded for all consultations using a customised clinic management software.

Results: The case mix of the clinic was comparable to the general practice pattern described in the 1993 Morbidity Survey of Outpatients. The overall mean consultation length was 9.3 minutes, the median was 6.0 minutes and the mode was 3.0 minutes. The mean consultation length for representative acute, chronic, and chronic relapsing and remitting conditions were 7.1 minutes (acute upper respiratory tract infection), 7.6 minutes (hypertension), and 9.9 minutes (bronchial asthma), respectively.

Conclusion: Consultation length for a practice is dependent on the case mix of the practice, which is in turn dependent on the number of tasks required.

Keywords: consultation length, acute, chronic, tasks

INTRODUCTION

Although the usual consultation length in general practice has been studied in many countries, it has not yet been studied in Singapore. This paper reports the consultation length in an established general practice. The mean consultation length as well as the length of time required for acute and chronic conditions are reported. Such measurements are useful for computation purposes on workload and time required in providing care in the general practice setting.

METHODS

The study was conducted over a period of 20 days from 25 April 1994 to 15 May 1994 at a suburban general practice clinic staffed by four doctors.

The diagnosis or reason for encounter of all consultations was captured by the doctors themselves directly into their computers. The clinic's customised software displays on the screen both a diagnosis (which the doctor may modify) and the three character codes of ICD 10 for the initial condition that was treated. Where two or more concurrent diagnoses or reasons for encounter existed in the patient, only the main condition was captured.

Cases which had missing diagnosis or reason for encounter, and attendances for 'repeat medicine' were excluded. These contributed 10.9% of all consultations studied.

RESULTS

A total of 1667 consultations were recorded in the system over the 20 days. Of this total, the reason for encounter or diagnosis was missing in 65 cases and 116 were attendances for repeat medicine. Of the remaining 1486 cases, 115 were for 'well' visits such as health assessment, preventive care, and family planning. The remaining 1371 cases were for 'sick' consultations.

Overall consultation length and patient profile

The distribution of consultation lengths follows a positively skewed pattern (Fig 1). The mean consultation length was 9.3 minutes, with a median of 6.0 minutes and mode of 3 minutes. Consultation lengths ranged from 1 to 140 minutes.

The 15 most common reasons for encounter in this clinic are shown in Table I. Excluding 'well' cases (eg. health assessment, preventive care, etc.) the case

Table I – Fifteen most common reasons for encounter in this study

No.	Reasons for encounter (n=1486)	Freq	%
1	Acute URTI	555	37.3
2.	Essential hypertension	67	4.5
3	Acute bronchitis	66	4.4
4	General medical examination	59	3.9
5	Gastroenteritis	43	2.9
6	Diabetes mellitus (type 2)	36	2.4
7	Gastritis & dyspepsia	32	2.2
8	Bronchial asthma	26	1.7
9	Non-specific viral infection	24	1.6
10	Anxiety – other	21	1.4
11	Atopic dermatitis	17	1.1
12	Acne	16	1.1
13	Other anorectal disease	15	1.0
14	Headache	13	0.9
15	Abdominal & pelvic pain	13	0.9

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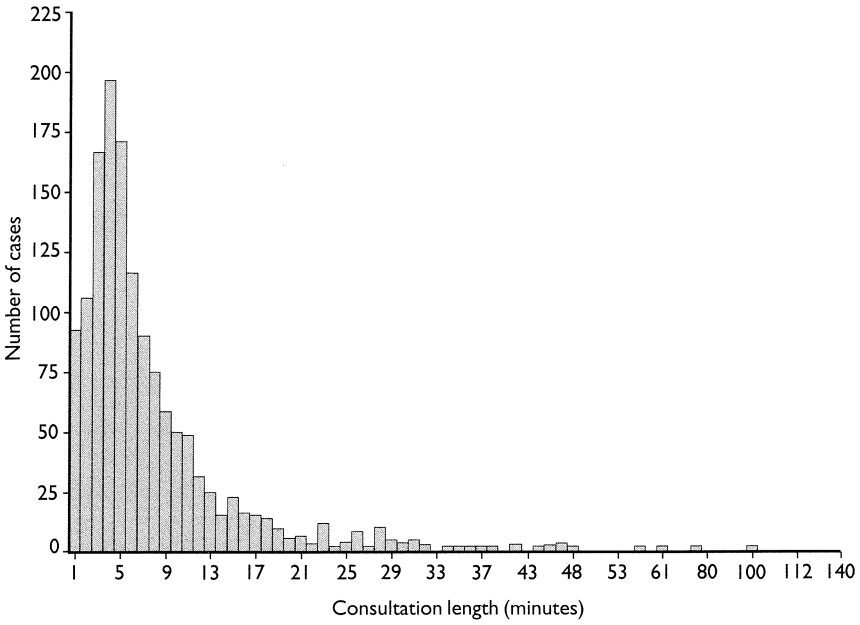

Fig 1 – Distribution of consultation lengths for all cases (n = 1486)

mix for the top ten conditions was comparable to that of general practitioners in the 1993 Morbidity Survey of Outpatients (MS)[1] (Table II). The proportion of 'well' consultations in the clinic (7.7%) was also comparable with the finding for private general practitioners (6.8%) in the MS.

However, the proportion of chronic conditions seen in this practice – hypertension, diabetes mellitus, and asthma and bronchitis – accounted for 14.9% of cases compared with 10.3% in the MS. The clinic also had relatively more respiratory and dermatological cases and fewer arthritic and diarrhoeal diseases than the MS average for general practitioners. This was contributed by the special interest of the doctors, and a visiting consultant dermatologist who conducted two sessions a week in the clinic.

Table II – Leading disease conditions among 'sick visits' to General Practitioners compared with the 1993 Morbidity Survey of Outpatients (MS)

	Total	This study (n = 1371)		MS, 1993 (n = 12693)	
		%	Rank	%	Rank
Upper respiratory tract infection	555	40.5	1	37.7	1
Dermatological disorders	121	8.8	2	5.4	4
Asthma and bronchitis	99	7.2	3	3.7	6
Hypertension	67	4.9	4	4.5	5
Diarrhoeal disorders	46	3.4	5	5.5	3
Arthritic conditions & rheumatism	45	3.3	6	5.6	2
Diabetes mellitus	39	2.8	7	2.1	8
Gastritis	32	2.3	8	2.5	7
Conditions of female genital tract	10	0.7	9	1.9	9
Conjunctivitis	9	0.6	10	1.4	10

Consultation lengths for selected 'acute' conditions

Acute upper respiratory tract infection

Upper respiratory tract infection accounted for 37.3% of the total consultations. The mean, median and modal consultation lengths for this condition were 7.1, 5.0 and 4 minutes, respectively. The distribution pattern of the consultation lengths for upper respiratory tract infection is shown in Fig 2. On the whole, the variance in consultation lengths for this condition is not high. Of these cases, 56.6% are seen within 5 minutes and 85.6% within 10 minutes.

Consultation lengths for selected 'chronic' conditions

Essential hypertension

The consultation length for essential hypertension in the clinic had a mode of 4 minutes with a second peak appearing at between 10 and 13 minutes (Fig 3). The median was 5.0 minutes and mean was 7.6 minutes. About half (52.2%) of cases were seen within 5 minutes and 79.1% were seen within 10 minutes. Most of the cases (89.6%) were seen within 15 minutes. The maximum consultation length recorded for hypertension was 35 minutes (Fig 3).

Bronchial asthma

The mean consultation length for bronchial asthma was 9.9 minutes. There were two modes in the distribution, occurring at 4 minutes and 10 minutes (Fig 4). Of these cases, 42.3% were seen within 5 minutes, 73.1% within 10 minutes, and 84.6% within 15 minutes.

Diagnostic conditions for consultations of between 2 to 4 minutes

Taking the mode of 3 minutes for all consultations into consideration, further analysis showed that there were a total of 426 cases (28.7%) which had consultation lengths that lasted from 2 to 4 minutes. The most common diagnostic conditions for these cases were comparable with those described earlier for all cases (see Table I): acute upper respiratory tract infections (46.0%), essential hypertension (6.1%), acute bronchitis (4.9%), gastroenteritis (2.3%), acute anxiety (1.9%), diabetes mellitus (1.6%), bronchial asthma (1.6%), and other conditions (35.6%).

DISCUSSION

The brevity of the typical general practice consultation has been the subject of complaint and dissatisfaction for a long time. As early as 1912, Sir Thomas Allbutt disparaged general practice as "perfunctory work by perfunctory men"[2]. Patients and consumer organisations complain that consultation lengths are generally too short to adequately deal with their problems. General practitioners are chided for sacrificing quality for speed[3]. The underlying premise is that the time doctors spend with their patients in their clinics affect the quality of care given.

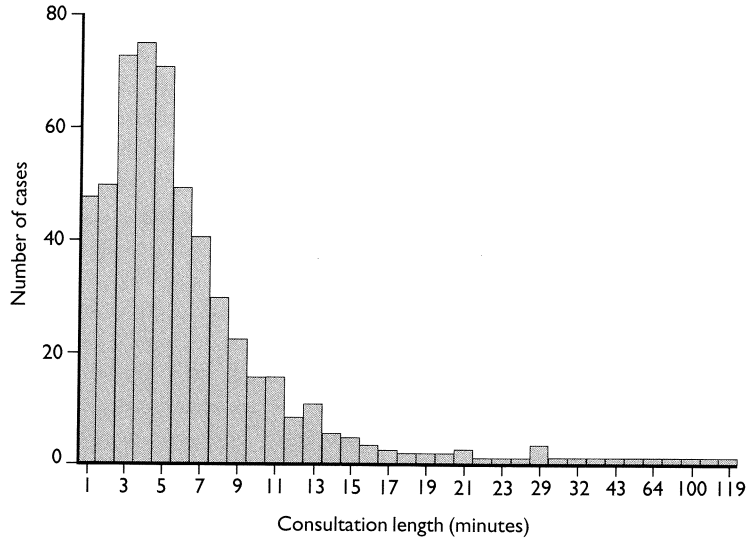

Fig 2 – Distribution of consultation lengths for upper respiratory tract infection (n = 555)

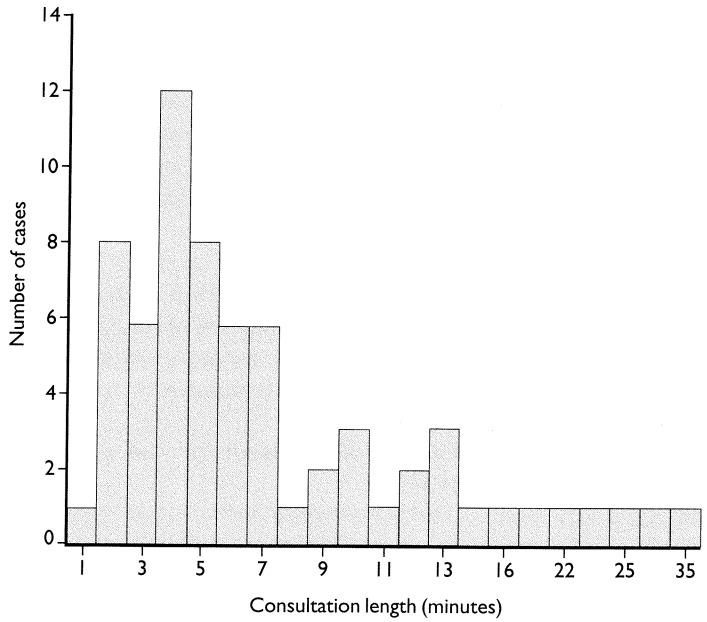

Fig 3 – Distribution of consultation lengths for hypertension (n = 67)

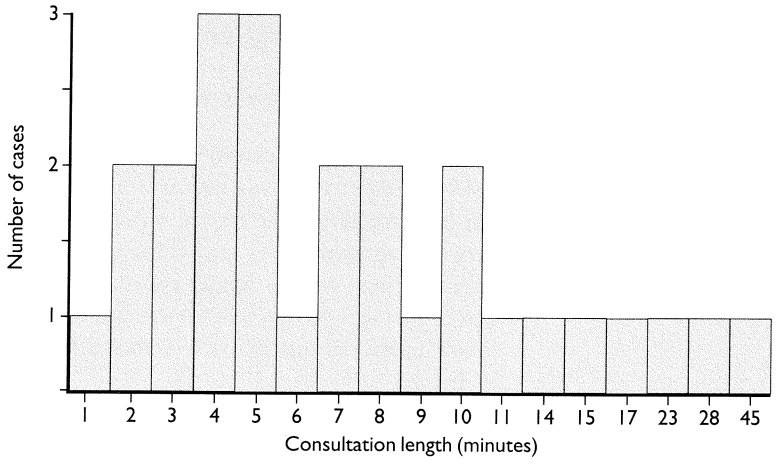

Fig 4 – Distribution of consultation lengths for bronchial asthma (n = 26)

The benefits of longer consultations

Many commentators suggest that a longer consultation would benefit both doctor and patient[4]. Several studies have indeed shown that both patient satisfaction and doctor satisfaction increased as doctors spent more time with their patients[5]. Consultations booked at longer intervals enabled doctors to take fuller history, identify more problems (especially psychosocial ones), and give more advice on prevention and health education[6,7]. Patients asked more questions and doctors explained the problem and management to their patients more readily[8]. There was no increase in physical examinations carried out, except for vaginal examinations, which tend to be more time-consuming[8]. One study found no difference in referral rates although fewer patients were asked to return within four weeks[9].

The effects of shorter consultations

It has been postulated that consultations can be shortened without much loss to service quality. An early study found no difference in the quality of history, examination, and advice given between doctors classified as 'quick' consulters (mean consultation length of 5.3 minutes) and 'slow' consulters (mean of 4.1 minutes)[10].

However, there is a practical limit to how brief a consultation can possibly be. Mechanic observed that doctors were forced to shorten their consultation pace when the patient load increased, a "particularly frustrating and uncongenial" practice which "requires them to practise on an assembly line basis which diminishes the unique satisfaction possible in general practice"[11]. Not only is personal job satisfaction diminished, but quality of care may also be compromised with inadequate time for consultations. One study noted that prescriptions were frequently offered instead of advice[12].

Bhopal and Bhopal[13] proposed a set of eight essential tasks for every consultation:

(1) review of the patient's records and summary before calling in the patient;
(2) greeting to put the patient at ease;
(3) allow the patient to present his problem and taking an appropriate history;
(4) carry out appropriate physical examination and opportunistic screening tests such as blood pressure, weight measurements, and urinalysis;
(5) make an assessment and initiate management, including investigations and referrals, where necessary;
(6) advise the patient on the nature of the problem and its prognosis;
(7) check on compliance with previous health advice and reinforce if necessary;
(8) update the clinical notes.

They suggest that it is impossible to do all this in less than 5 minutes, and propose a consultation length of at least 5 minutes, with a mode, median or mean of 10 minutes. In defence of this, Professor John Fry[14] argued that there is no need to begin every consultation with 'personal history', 'family history', and 'past history', and so forth. The familiarity of the

general practitioner with his patients and the very nature of follow-up visits would obviate the need to follow an exhaustive sequence of steps.

The optimum consultation length

Is there an ideal consultation length? The classic 6-minute consultation worked on the assumption of 10 patients seen in an hour[2]. Other researchers have suggested or assumed 10 minutes as the most generally accepted 'ideal' length[11]. Professor Fry argued that 5 to 10 minutes was the optimum average consultation length[14], citing a 1982 national opinion poll in the United Kingdom in which 72% of the patients found this duration 'about right'.

This average duration should suffice for new episodes of minor illnesses and follow-up visits, which do not require the 'whole process' of consultation, but rather, focusing usually on one or two specific areas. Consultations for 'chronic' conditions likewise may be conducted under separate sessions arranged for the patients by appointment. During each consultation, the doctor may focus on one or several aspects of care for the particular condition, eg., health education, or monitoring for complications in diabetes mellitus.

Internationally reported consultation lengths

Various studies have reported mean consultation lengths which generally fall within this range. The mean consultation lengths in the United Kingdom reported in studies between 1950 and 1980 ranged from 5 to 10 minutes[14] (Table III) with a possible trend towards longer consultations[2]. Mean consultation lengths in Europe and America tended to be above 10 minutes.

However, international comparisons are hampered by differences in the structure and role of primary care as well as differences in the doctors' systems of payment[14] in those countries and hence may result in misleading conclusions[2]. This limitation does not apply when comparing mean consultation lengths between GP clinics within the same country as this would still yield useful information.

Table III – Average consultation lengths from local and international studies

Country	Mean (min)	Median (min)
Singapore, this study	9.3	6.0
Singapore, 1996[21]	10.4	
UK, 1952, 1973[10]	5.0	
UK, 1984[15]		7.5
UK, 1987[16]	8.25	
Hong Kong[17]	3 – 10	
Germany[18]	10	
New Zealand[19]	12	
USA[17]	14	
France[17]	14	
Canada[15]	15	
Sweden[20]	21	

Tasks in consultation

When representative mean consultation lengths for a typical acute (acute upper respiratory tract infection), chronic (hypertension), and chronic relapsing and remitting condition (bronchial asthma) were compared, similarities were observed between the mode for acute upper respiratory tract infection and the first of the two modes of hypertension and bronchial asthma.

In the bimodal frequency distribution for hypertension, the majority of cases which occur around the first mode of 4 minutes may represent consultations for stabilised hypertensive patients which require fairly few tasks to be performed. As these form the majority of cases, the mean for essential hypertension (7.6 minutes) was fairly similar to those of upper respiratory tract infection (7.1 minutes). The second mode in the distribution for hypertension (10 to 13 minutes) could represent newly diagnosed cases and periodic assessments which require more thorough physical examination, patient education, and investigative procedures.

Bronchial asthma is an example of a chronic relapsing and remitting condition in which the majority of cases would present as chronic stabilised asthma. These routine follow-up visits, represented by the first mode of 4 minutes, would require fewer tasks, including perhaps a quick check-up with the prescription of repeat medication. The remainder of cases which present as acute asthma would require longer consultations as they may need more examination, explanation and reassurance, and management may involve nebulisation and subsequent review. Such cases would account for the second mode of 10 minutes.

Factors accounting for the case mix in this practice

This study was conducted in a group practice situated in a suburban upper middle class neighbourhood. Although the doctor attends to 45 patients a day on average, a figure consistent with the finding of the 1996 Survey of Housing Estate Practice Costs and GP Fees in Singapore[21], the case mix comprises a larger proportion of chronic cases than that found in the MS. As a well-established practice set up since 1979 and run by an internist principal, the clinic would be expected to have a larger proportion of chronic patients on long-term follow-up.

Relating tasks to the consultation length for chronic cases

Although chronic cases need more time because more tasks are required, this is not so in practice because not all tasks have to be carried out within one visit. Newly diagnosed cases and those requiring acute attention may require longer consultations, but by and large, the tasks required for patients on long-term follow-up may be distributed over the number of visits in a year.

Based on a comparison of the three major chronic conditions in the MS – hypertension, diabetes mellitus, and asthma and bronchitis – Government

Polyclinics generally see more chronic cases (26.4%) than GP clinics (10.3%). As the proportion of chronic cases seen at this clinic (14.9%) was lower than that of the Polyclinics, one would have expected the overall consultation length to be shorter than that of the Polyclinics. However, the mean and median consultation lengths for Polyclinics, at 5.7 and 5.0[22] minutes, respectively, turned out to be shorter than the corresponding indices for this clinic. GP clinics generally have longer consultations possibly because of the infrastructure limitations of a smaller clinic setup. In a solo GP clinic, almost everything may have to be done by the doctor himself. Government Polyclinics, on the other hand, have the range of backup services, including those of nurse-educators, dieticians, and are equipped with laboratories and X-ray facilities. This would effectively relieve the doctor of some of the tasks which he may otherwise have to perform himself.

CONCLUSION

The case mix in the general practice clinic studied is quite similar to that of general practitioners in the 1993 Morbidity Survey of Outpatients. The mean consultation length of 9.3 minutes in this study is consistent with the 10.4 minute mean obtained from the 1996 Survey of Housing Estate Practice Costs and GP Fees in Singapore[21], with internationally reported figures for UK, Hong Kong, and Germany (Table III), and falls within the 5 to 10-minute norm.

When the distribution of consultation lengths for typical acute and chronic conditions were related to the number and complexity of tasks required, a minimal consultation of at least 5 minutes appears to be reasonable, even for the greater proportion of consultations for chronic conditions, which are for routine follow-up.

Although this study focused on the process rather than the outcome of consultations, linking time spent in consultation with the tasks performed would provide useful indicators on standards of care.

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