

Telephone consultations with patients: a brief study and review of the literature

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SUMMARY. The use of the telephone is described in a small, single-handed practice in Israel over a period of six months. Eighty per cent of the 350 calls were received during office hours and none after midnight. There were twice as many female as male callers. Half of the calls were made on behalf of the patient by a third party and 10 per cent were answered by the doctor's wife in his absence. Eighty per cent of the calls were concerned with medical symptoms and in half of the cases the problem was a new one. The commonest diagnoses were upper respiratory tract infection, gastro-intestinal disorders and fever. In more than half the cases, discussion and advice as to home management was sufficient to solve the problem presented. The average annual telephone consultation rate was 2.2 and the call:office visit ratio 1:2.2.

The telephone was used to the doctor's satisfaction for two main purposes—the early reporting of new symptoms, and the feedback of follow-up information. It is thought that this behaviour both reduced the surgery consultation rate and extended the range of medical surveillance.

Introduction

THE use of the telephone for consultation in general practice has become commonplace, but is relatively undocumented (*British Medical Journal*, 1978). In an American time-and-motion study of primary paediatric practice, an eighth of the doctors' time was spent in consultation by telephone (Bergman *et al.*, 1966). Studies of the role of the telephone in total medical care in a Kaiser Foundation prepaid group practice system (Pope *et al.*, 1971; Greenlick *et al.*, 1973) demonstrated ratios of telephone consultations to surgery consultations (call:visit ratio) of between 1:2.5 and 1:4.5.

Isolated aspects of the subject have been studied in the past: the purpose of the calls (Greenlick *et al.*, 1973); the doctor's pattern of response (Greenlick *et al.*, 1973; Fischer and Smith, 1979); the distribution of diagnoses and the use of paramedical personnel to handle calls (Katz *et al.*, 1978; Fischer *et al.*, 1979); and after-hours calls (Greenlick *et al.*, 1973). However, no study has described all these aspects together as seen by general practitioners in their daily work. Descriptive studies such as this have implications for the training of family physicians, for the evaluation of primary care and for the organization of general practice.

When Balint (1968) discussed telephone calls with a group of general practitioners he found sharp controversy, with different doctors' attitudes dependent on their individual personalities. Greenlick and colleagues (1973) found that the call:visit ratios varied markedly among different doctors, and that this was more important in determining the way telephone calls were handled than any combination of patient variables. There is some experimental evidence to support the view of those who would not give medical advice over the telephone. Medical histories taken over the telephone using simulated patients have been found to be seriously incomplete (Brown and Eberle, 1974; Ott *et al.*, 1974; Greitzer *et al.*, 1976). Nickerson and colleagues (1975) followed up real patients who had consulted over the telephone for earache and found that the diagnosis was incorrect in one fifth of the cases. On the other hand, Conrath and colleagues (1975), also using simulated patients, showed that doctors who were used to this means of communicating did well. Thus training in the technique of telephone consultation should improve performance, but evaluations of training programmes have given conflicting results (Curry and Schwartz, 1978; Smith and Fischer, 1980).

Patients perceived by the doctor as being more dependent, especially in the higher socio-economic groups, have been found to use the telephone more extensively in place of surgery visits (Pope *et al.*, 1971). Israel, with its high consultation rate of nine per patient per year (Kersch and Ron, 1978), provides an interesting setting

for the investigation of alternative forms of doctor-patient contact such as by telephone. My hypothesis is that the Israeli population would not show a low telephone consultation rate. However, most patients are cared for in the health centres of Kupat Holim (a prepaid health insurance scheme covering more than three quarters of the population), which are often poorly provided with telephones, so that it is technically difficult to reach the doctor. The study practice, on the other hand, is in small, privately owned premises and the patients are informed that the doctor is happy to answer questions over the telephone. The payment arrangements are through Kupat Holim and are identical in rate and cover to those for health centre care. I was able to use this practice to describe the pattern of use of the telephone and to test my hypothesis.

Methods

The practice

The practice consists of 311 patients in a suburban middle-class area. Nearly half the families are immigrants to Israel from English-speaking countries, as I am myself. Most adults are employed in academic or professional positions.

Consulting hours are limited to two hours a day, by appointment only. The patients receive written details of the service offered by the practice, including the information that the doctor will answer telephone enquiries between 06.30 and 07.30 or during consulting hours (early afternoon and early evening on alternate days), but that urgent calls are accepted at any time. Eighty per cent of households served by the practice

have a telephone. The average annual consultation rate (surgery visits) is five.

The study

I and my wife kept a record of all telephone conversations with patients between June and December 1980. Calls made with the sole intention of booking an appointment were excluded. The details recorded were: time, identity of caller, name, age and sex of the patient, handler of call, the nature of the problem and the way it was handled.

Results

Three hundred and fifty calls were recorded during six calendar months, representing 2.24 calls per patient per year and a call:visit ratio of 1:2.2. The time of the call was noted in 159 cases and 30 were found to have been made outside the hours specified for telephone consultation. No calls were recorded between midnight and 06.30 (Table 1).

Two out of three calls involved female patients. Older women used the telephone the most heavily, younger men the least (Table 2). In 155 cases (44 per cent), the calls were made on behalf of the patient by a third party, usually a child's mother (112). Twelve fathers, 16 husbands and four wives also called and 11 others including various relatives and friends. In 15 cases the doctor telephoned the patient and in 38 cases the doctor's wife answered the call in his absence.

The content of the calls related to a new problem in 153 cases (44 per cent) and to an existing problem in 129 cases (37 per cent). The remaining calls were about results of laboratory tests (7 per cent), administrative arrangements (9 per cent) or repeat prescriptions (2 per cent). The diagnostic categories are listed in Table 3.

The calls led to a variety of responses from the doctor. In 60 per cent advice about home management was sufficient, with arrangements for follow-up. Seventy-eight patients (22 per cent) received advice on medication over the telephone. Seventeen of these were for antibiotics, either as prophylactic cover, for example severe upper respiratory tract infection in an asthmatic, or in accordance with sensitivity results on culture, for example in urinary infection, or at the request of a dental practitioner for periodontal disease. Eighteen

Table 1. Time of calls.

Time	Number of calls
00.00-06.29	0
06.30-07.29	26
07.30-13.59	10
14.00-15.29	46
15.30-18.59	14
19.00-20.29	57
20.30-23.59	6

Table 2. Age-sex distribution of patients making calls.

Age	Patients			Calls			Calls per patient per year		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-14	73	91	164	75	106	181	2.1	2.3	2.2
15-44	58	68	126	26	96	122	0.9	2.8	1.9
45-64	9	6	15	13	23	36	2.9	7.1	4.8
65+	3	3	6	4	7	11	2.7	4.6	3.7
All patients	143	168	311	118	232	350	1.7	2.8	2.2

patients were asked to go for laboratory investigation and arrangements were made for 46 (13 per cent) to be seen by a doctor (33 regular appointments, four home visits, six direct to the hospital emergency department and three to specialist consultation).

My wife dealt differently with the calls she handled. Sixteen of her 38 calls were referred on with advice about how to contact me or my partner personally. Eleven calls were for administrative procedures which she was able to deal with appropriately, and two were for repeat prescriptions. The remaining nine were of a clinical nature. In five of these an appointment was arranged and in the other four the patient was satisfied with the non-professional advice which the doctor's wife was able to offer. This advice was based on her experience as a mother of four children and as a qualified medical social worker, but was presented to the patients as clearly not professional.

Discussion

The differences in structure between the American practices previously studied and between them and the

present study make it very difficult to compare results (Table 4). There are, however, striking similarities in the low rate of doctor-initiated calls and in the extent of medication advice offered over the telephone, which perhaps indicate a certain consensus about reasonable doctor behaviour. The vast difference in the use of the telephone for ordering repeat prescriptions requires further investigation (Balint *et al.*, 1970). Freeman (1980) has noted that patients receiving medication by telephone tend to be older and more helpless and that there is a preponderance of psychopharmacological medication, a pattern quite similar to the classic descriptions of repeat prescriptions in general. Our relatively young population in a newly established practice might not yet have established repeat prescription behaviour.

The overall rate of telephone consultation in this study is twice as high as that found by Greenlick and colleagues (1973), but the call:visit ratio is similar, and thus my null hypothesis is not refuted. The consultation rate at the surgery was itself much lower than the national average, but was the same as that found in the nearby Kupat Holim health centre, which did not have telephone consultation (Sive and Bialik, 1978). The health centre had a practice nurse and it is likely that she coped in person with many of the situations which the author dealt with over the telephone. The reasons for the relatively low consultation rate have not been explored, but may be related to the high socio-economic standard of the neighbourhood, to a high proportion of immigrants from English-speaking countries or to the concurrent use of other medical agencies. Nonetheless, the consultation rate of five is high in comparison with the UK's three per patient per year (RCGP, OPCS and DHSS, 1974) or the USA's 1.3 (National Ambulatory Medical Case Survey, 1976).

It may be feared that encouraging the use of the telephone would involve an intolerable encroachment on the doctor's privacy and leisure, and therefore the low rate of out-of-hours calls was a reassuring finding.

Table 3. Diagnostic categories.

Diagnosis	Calls
Upper respiratory tract infection	49
Gastrointestinal (including hepatitis)	41
Fever	38
Other symptoms	26
Genito-urinary	24
Skin diseases	22
Trauma	20
Endocrine and metabolic	17
Respiratory disease	15
Gastroenteritis	13
Gynaecological	13
Total (=80 per cent of all calls)	278

Table 4. Comparison with published surveys.

	Present study	Greenlick	Fischer	Katz
Personnel	GP and wife	GP	GP	Paediatric health assistant
Hours	All hours	Office	All	Office
Number of calls	350	5191	587	1484
Purpose				
New symptom	44%	28%		
Follow-up	37%	19%		
Laboratory result	7%	10%		
Administration	9%	7%		
Prescription	2%	30%		
Doctor-initiated	5%	6%		
Disposal				
Home management advice	60%	40%	43%	30%
Medication	22%	37%	26%	—
Appointment	13%	20%	31%	45%
Investigation	5%	—	—	—

The use of other out-of-hours services, such as hospital casualty departments, the municipal emergency service or private doctors, was negligible, but neither I nor the local health centre have accurate figures for comparison. It was my intention that the availability of the family doctor out of hours should minimize the necessity for alternative services.

The greater use of the telephone by or for female patients was even more marked than noted by Fischer and Smith (1979) (M:F 42:49). A trend noted by Greenlick and colleagues (1973) was also seen in our patients—greater use by older women and minimal use by younger men. As with the overall relation between calls and visits, here too the age–sex pattern of use reflects the general behaviour as seen in visits to the doctor (Sive and Bialik, 1978).

The function of the third party who contacts the doctor on behalf of the patient has been researched in the context of requests for house calls by means of a Balint group (Bailey, 1979). Diagnosis of the intermediary's anxiety was found to be an essential component of management. This process was apparent in the common situation of a mother telephoning about her child's fever, when a simple question about the specific anxiety in the mother's mind often indicated the degree of intervention necessary. Legitimizing minor medications such as antipyretics was frequently the underlying cause for the telephone call, rather than any real anxiety as to the severity of the condition. Westbury (1974) also found that third-party consultation was a common feature and accounted for one third of his telephone calls.

The extensive use of the telephone for follow-up reporting may be reasonably considered as an extension of traditional care rather than a substitute for a personal consultation. I found that much of my own anxiety was relieved by up-to-date information on the patient's progress.

The usefulness of the telephone as a tool of doctor-patient contact may be judged by the small number of patients for whom further contact was arranged (13 per cent). Thus the doctor clearly felt confident in coping with most problems over the telephone, using his professional judgement. Since the most frequent management tactic was advice alone, it may be concluded that the patients had learned in which areas the doctor felt comfortable about providing help by listening and discussion alone, and that it was in these areas that they would use the telephone as an adjunct or alternative to personal consultation.

Delegating the handling of telephone calls to semi-trained or untrained staff has been studied in American paediatric practice. Using simulated patients these staff were found to do better than paediatric house physicians in taking clinical histories, deciding on a course of action and in interviewing (Perrin and Goodman, 1978). In actual practice, with their clinical responsibility strictly defined, they resolved 92 per cent of problems

and satisfied 90 per cent of the patients (Katz *et al.*, 1978). The methods used by my wife in the present study to deal with calls by referral or advice were broadly the same as those used by the paediatric health assistants described by Perrin and Goodman (1978). Her interviewing skill as a trained social worker may have contributed to her competence, but perhaps formal training should be offered to doctors' spouses to help them cope with the clinical aspects of the contacts they inevitably have with their partner's patients.

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Trimethoprim and urinary tract infections in the elderly

Ninety-six elderly patients (mean age 80 years) with acute urinary infections were treated in a single-blind trial, with either one 200 mg dose of trimethoprim or 200 mg b.d. for five days. After one week the initial pathogen was eliminated in 67 per cent of patients who had received the single dose and in 94 per cent who received the drug for five days. Only three patients suffered possible side-effects.

Source: Lacey, R. W., Simpson, M. H. C., Lord, V. L. *et al.* (1981). Comparison of single-dose trimethoprim with a five-day course for the treatment of urinary tract infections in the elderly. *Age and Ageing*, **10**, 179-185.

Onset of diabetes

In a prospective investigation of the pre-diabetic period before onset of type 1 (insulin-dependent) diabetes, HLA genotypes were determined in 582 healthy parents and siblings of 160 affected children. Islet cell antibody was sought by both the conventional (ICA-IgG) and the complement fixation (CF-ICA) techniques during regular prospective observation over a mean period of 2.0 years. Four siblings and two parents became diabetic; the interval before detection of any biochemical abnormality exceeded a year in four of these (range 3-30 months), and in all cases ICA-IgG was positive from the outset, CF-ICA being positive in five. These observations suggest that the initiation of pathogenesis may precede the abrupt clinical onset of diabetes by several years, even in children.

Source: Gorsuch, A. N., Lister, J., Dean, B. M. *et al.* (1981). Evidence for a long pre-diabetic period in type 1 (insulin-dependent) diabetes mellitus. *Lancet*, **2**, 1363-1365.



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