PRACTICE OBSERVED

Practice Research

Has treatment for childhood gastroenteritis changed?

G A KUMAR, T M LITTLE

Abstract

Because so many children with gastroenteritis in our area were being treated with drugs, which are potentially harmful, we assessed the extent of treatment before admission to hospital of 288 children. Sixty four had been treated: 45 with antibiotic, antidiarrhoeal, or antiemetic drugs and 34 had been given glucose-electrolyte solution, 15 of those had also been given drugs; 119 had had no treatment. Since 1979 there has been a decrease in the use of drugs for gastroenteritis, but glucose-electrolyte mixtures are still underused.

Introduction

In 1979-80 we found that the treatment of childhood gastroenteritis in general practice was unsatisfactory; too many children were being given potentially harmful drugs, whereas too little attention was being paid to oral rehydration treatment.[1] Since then the subject has been widely discussed in the medical press, and several drug companies have vigorously promoted glucose-electrolyte preparations.[2] To assess the effects of these measures we examined the preadmission treatment of children with gastroenteritis in 1982-3.

Methods and results

Over a 12 month period in 1982-3 288 children with gastroenteritis were admitted to this hospital. Of these, 250 came from the Medway district, 37 from Maidstone, and one from Gravesend. The sex, age, source of referral, and home treatment were recorded together with the treatment given in hospital, the duration of stay, and the results of cultures of bacteria in the stools.

In hospital the children were given a glucose-electrolyte solution (Dioralyte, Armour Pharmaceuticals) or intravenous fluids if necessary. Antibiotics were given to one child with *Salmonella* septicaemia; otherwise no drugs were given after admission. There were 145 boys and 143 girls; they ranged in age from two weeks to 10 years (mean 1·4 years); 141 were infants. General practitioners or their deputies had referred 170 patients, 87 came from the accident and emergency department, eight were brought to the ward by their parents, and 23 had been transferred from other units.

Comparison of patients with gastroenteritis admitted in 1979-80 and 1982-3

	1979-80 n = 181*	1982-3 n = 288
Preadmission treatment		
Drugs	90 50%	45 16%
Antibiotics	39 22%	22 8%
Antidiarrhoeals	54 30%	14 5%
Antiemetics	41 23%	13 5%
Glucose-electrolyte mixture		34 12%
Hospital treatment		
Oral rehydration treatment	151 83%	271 94%

*Eight month period

Sixty four (22%) patients had been treated before admission; 45 had been given one or more drugs: 22 had been given antibiotics, 14 antidiarrhoeal drugs, and 13 antiemetics. Thirty four had been given a glucose-electrolyte solution; 15 of these had also been given drugs. General practitioners had referred 119 (41%) children who had had no treatment at home.

The mean duration of stay in hospital for patients who had been treated before admission with a glucose-electrolyte mixture or admitted after self referral was 1·89 days; this compares with 2·29 days ($p<0·05$) for those who had been referred by their general practitioners with no home treatment and 2·35 days ($p<0·01$) for those who had been given drugs at home with or without a glucose-electrolyte mixture. Seventeen patients (6% of the total) needed intravenous fluids. There were no deaths. Pathogenic bacteria were cultured from the faeces of six patients; four had *Salmonella* species and two *Campylobacter jejuni*. The table compares the drug treatment given to children in 1979-80 and 1982-3.

All Saints' Hospital, Chatham, Kent ME4 5NG

G A KUMAR, MD, MRCP, senior house officer

T M LITTLE, MB, FRCP, consultant paediatrician

Correspondence to: Dr Little

Discussion

Since 1979-80 there has been a change in the treatment of gastroenteritis in general practice in this area. The decrease in the use of potentially harmful drugs is encouraging, but glucose-electrolyte mixtures are still underused and it is disappointing that so many children—41% of those admitted—were referred to hospital without any home treatment. The *British National Formulary* emphasises the importance of oral rehydration treatment and draws attention to the adverse effects of antibiotics and antidiarrhoeal drugs. *Prescribers' Journal* also had an article on the treatment of childhood diarrhoea, in 1982,[3] and *Medicine Forum*, the report of a symposium on diarrhoea, was sent to all general practitioners in the same year; hence all should be aware of the principles of treatment.

Drugs are of no benefit in the treatment of gastroenteritis and distract attention from giving adequate fluids. The children who had been given drugs before admission had the longest stay in hospital, a finding also noted in a recent study from Australia.[4] The number of severely ill children, as measured by the need for intravenous fluids, declined over the four year period but there was no fall in the admission rate.

Most of these patients could have been treated at home; for this to be successful their parents must have clear instructions about oral rehydration treatment and the withdrawal and reintroduction of milk and solids. Instruction sheets, such as those published by *Modern Medicine*[5] may be helpful, but most important are the support and supervision of the family doctor.

We thank the nursing staff for their help in collecting the data, Dr P D Manuel and Dr M C Sanderson for allowing us to study their patients, Mr I Dawson for statistical analysis, and Mrs T Redknap who typed this report.

References

1 Morrison PS, Little TM. How is gastroenteritis treated? *Br Med J* 1981;283:1300.
2 Jackson W. How should we manage acute diarrhoea? In: *Medicine Forum*. Oxford: Medicine Publishing Foundation, 1982.
3 Cutting WAM. Acute diarrhoea in children in the UK. *Prescribers' Journal* 1982;22:2:32-8.
4 Halliday K, Edmeades R, Shepherd R. Persistent post enteritis diarrhoea in childhood. *Med J Aust* 1982;1:18-20.
5 Jeavons G. Treatment of gastroenteritis. Health Education Series. *Modern Medicine* 1983;28.

(*Accepted 19 February 1985*)

Consultation length: general practitioners' attitudes and practices

ANDREW D WILSON

Abstract

A survey by postal questionnaire of 190 Nottingham general practitioners on consultation length was conducted and a response rate of 82% achieved. Reported consultation length was associated with the doctor's gender, use of an appointment system, membership of the Royal College of General Practitioners, and the number of patients seen during an average surgery. Seventy two per cent of respondents would have liked to have offered longer consultations and most thought that longer consultations would result in a higher standard of care and a lower prescription rate.

Introduction

More and more general practitioners are expressing dissatisfaction with the brevity of the consultation in general practice and advocating that its length should be increased to an average of at least 10 minutes. After their detailed study of the use of time in a sample of Scottish general practices Buchan and Richardson in 1973 concluded that to fulfil the newer methods and philosophy of general practice at least 10 minutes per consultation should become a priority.[1] Several authors have since noted the near impossibility of seeing patients at a rate of 10 an hour without sacrificing clinical standards,[2] trivialising the patient's problems,[3] or relying on a style of work in which "frequent prescriptions for psychosomatic illness is coupled with a relatively low level of examination and investigation."[4] This view is supported by Dunnell and Cartwright, who in 1972 found that 52% of the general practitioners questioned thought that they would write fewer prescriptions if more time was available.[5] It has also been suggested that lack of time may be a reason for a lack of anticipatory care[6] or health education[7] in the consultation.

Not only doctors are dissatisfied. Cartwright and Anderson found in 1977 that 40% of the patients they surveyed were worried about wasting the doctors' time. One in eight put off a visit for this reason, and one in seven criticised the doctor for hurrying.[8] Thus it was suggested that there is a vicious spiral between short and frequent consultations, with patients perceiving the consultation as trivial and, therefore, appropriate for trivial complaints.[9] An extension of this argument is that longer consultations may provide an opportunity to explore unresolved or undischarged anxiety and thus dealing with these problems may reduce the need for further consultations."[10]

It is not known whether these opinions about the length of the consultation are representative of general practitioners. The aims of this study were: (*a*) To discover in what way a group of general practitioners arranged the length of their consultations. (*b*) To investigate factors associated with reported length of consultations. (*c*) To explore the attitudes of this group of general practitioners towards length of consultation and, particularly, the possibility of longer consultations.

Method

All 190 general practitioner principals who work in central Nottingham and the immediate surrounding area were included in the survey, their names being drawn from the current family practitioner committee list. Each doctor was sent a postal questionnaire with a reply paid envelope. Non-responders were sent a second and, if necessary, third questionnaire.

Department of Community Health, University of Nottingham, Queen's Medical Centre, Nottingham NG7 2UH

ANDREW D WILSON, MB, MRCGP, lecturer in community health

Respondents were asked to place their name on the questionnaire but could answer anonymously if they preferred.

The questionnaire was divided into three sections. Firstly, inquiry was made about current practice concerning the length of the consultation. Respondents were asked to estimate the length of their average consultation, and those with appointment systems were asked how many patients were booked per hour. The second part of the questionnaire explored attitudes towards increased consultation length and how this might be achieved. Closed questions were used throughout the questionnaire. For example, the question regarding how longer consultations might be achieved asked the respondents to indicate any or all of the following: increased delegation (administrative); increased delegation (clinical); smaller list size.

As there was no evidence that reported consultation times followed a normal distribution, non-parametric tests were used in the analysis.[11] The Mann-Whitney U test was used in comparing two variables and the Kruskal-Wallis test used in comparing more than two variables. Spearman rank correlation was used as a test of association.

Results

RESPONSE RATE

Of the 190 general practitioners who were sent the questionnaire, with up to two reminders, 156 (82%) returned it appropriately completed, but 14 of these responded anonymously. In comparing responders with non-responders these anonymous responders had to be classified as non-responders. There were, however, significant differences between responders and non-responders in college membership and date of qualification. Of the 36 college members who were approached, 34 (94%) replied, whereas, of the 154 non-members, 108 (70%) replied ($\chi^2=7·89$, $p<0·01$). The median qualification date for responders was 1965 and for non-responders 1960 (Mann-Whitney U test, $p<0·05$, seven missing values).

CURRENT PRACTICES

One hundred and thirty eight doctors (88%) had an appointment system, although nearly all (90%) of these saw some "extra" patients between appointments. For those doctors with appointment systems a median number of 10 patients was booked to be seen an hour, range five to 20 (five missing values). The estimated number of patients seen during an average surgery ranged from three to 30, with a median of 19 (three missing values). The estimated average length of consultation ranged from four to 15 minutes, the median being seven minutes.

FACTORS ASSOCIATED WITH REPORTED CONSULTATION LENGTH

The length of the average consultation correlated negatively with the number of patients booked per hour ($\rho=-0·69$). There was an association between the number of patients seen per surgery and the reported consultation length (table I). College members saw fewer patients per surgery (median for members 16, for non-members 20; Mann-Whitney U test, $p<0·001$).

TABLE I—*Estimated average length of consultation v number of patients seen per surgery*

No of patients per surgery	No	Median consultation length (min)
<14	14	9
15-19	59	8
20-24	56	7
>25	19	5
Total	148	7

$p<0·001$ (Kruskal-Wallis test).

The use of an appointment system, female gender, and membership of the college were all associated with longer estimated consultation length, as follows: median length of consultation was seven minutes for 133 doctors who used an appointment system and five minutes for 18 not using one (Mann-Whitney U test, $p<0·001$); median length was seven minutes for 112 men doctors and eight minutes for 37 women doctors (Mann-Whitney U test, $p<0·05$); median length was eight minutes for 41 members of the college and six minutes for 109 non-members (Mann-Whitney U test, $p<0·001$); for the total number of doctors in each group median length of consultation was seven minutes.

Consultation length was significantly associated with list size at the extremes of list size only; in the range 1000-3000 patients there was no association, the median length being seven minutes. For the 23 doctors with lists of over 3000 patients the median reported length of consultation was five minutes. Similarly, there was a significant difference in the number of patients per surgery only for doctors with list sizes above 3000 and below 1000 patients.

Average consultation length was not associated with age, size of partnership, or appointment as a trainer. Eighty doctors worked with a practice nurse, but this was not associated with any difference in average length of consultation or in the number of patients seen per surgery.

ATTITUDES

Desire for change—One hundred and twelve (72%) respondents stated that they would like to increase the average length of their consultation. All groups of doctors responded similarly to this question, and there was no difference in response between those with shorter or longer consultations. When asked how this increase might be achieved 47% of doctors indicated reduction in list size as important. Fewer (39% and 33% respectively) thought that increased delegation of clinical or administrative duties would help to achieve longer consultations.

Optimal consulting rate and length of surgery—The general practitioners were asked what rate of consulting was compatible with practising to their highest standards, and what number of patients per surgery was compatible with this goal. The median response to the first question was six patients an hour, only 7% choosing fewer than five patients an hour. The median response to the second question was 14·5 patients per surgery. The responses to these questions did not differ significantly according to age, sex, or membership of the college. Current practice, however, did affect median responses. There was a negative association between average length of consultation and what was considered the ideal number of patients to book an hour ($\rho=-0·34$, $p<0·001$). Those with an average length of six minutes or less ($n=64$) thought that seeing eight patients an hour was their optimal rate, whereas those with an averge consultation length of seven minutes or more ($n=87$) thought that seeing six patients an hour was their optimal rate. Similarly, there ws an association between the number of patients seen per surgery and the number considered optimal ($\rho=0·29$, $p<0·001$). Those who saw fewer than 20 patients per surgery ($n=75$) thought that 13 patients was ideal, whereas those who saw 20 or more thought that 15 patients was ideal.

Perceived effects of longer consultations—Respondents were asked whether they thought that longer consultations would alter their behaviour, job satisfaction, or the quality of care provided to their patients. The most frequent responses were that the prescribing rate would decrease, investigation and referral rates would remain the same, patients' consulting rates would decrease, and both quality of care and job satisfaction would increase (see table II).

TABLE II—*General practitioners' views on the effects of longer consultations: percentages in parentheses*

	Increase	Decrease	Stay the same	Total No
Prescription rate	2 (1)	83 (56)	63 (43)	148
Investigation rate	47 (32)	12 (8)	90 (60)	149
Referral rate	5 (3)	48 (32)	97 (65)	150
Consultation rate	21 (14)	68 (47)	57 (39)	146
Quality of care	109 (72)	0 (0)	42 (28)	151
Job satisfaction	118 (78)	1 (1)	32 (21)	151

Discussion

The overall response rate to the survey (82%) suggests a high level of interest in consultation length among general practitioners. The higher response from members of the Royal College of General Practitioners and more recently qualified graduates is not surprising but should lead to some caution in extrapolating the results to all general practitioners.

Verifying responses was not an aim of this study, but it is reassuring that there was a close association between the estimates of consultation length and the more easily answered, and therefore possibly more reliable, question about the number of patients booked per hour. It is also notable that the estimates of consultation length are close to those actually measured in another recent study. In interpreting the data it is important to recognise that the consultation lengths given are estimates and may reflect aspirations rather than reality. This, however, does not invalidate comparisons between groups of doctors nor does it influence the perhaps more important investigations of doctors' attitudes towards the length of the consultation.

The discrepancy between the median number of patients booked per hour (10) and the median average length of consultation (seven minutes), as well as the fact that nearly all doctors saw some extra patients between booked patients, supports the impression that many surgeries have a tendency to run late. It would be interesting to study why doctors who know that they are seeing patients at seven minute intervals continue to book patients into the surgery at the rate of 10 an hour. This surely adds to the much discussed pressure that doctors feel themselves to be under while consulting as well as causing the patient some frustration. Might doctors fear that if they increased the length of their appointment slots the length of their consultations would increase still further?

The association between longer consultations and fewer patients seen per surgery also merits further research, particularly as it has already been suggested that longer consultations may be associated with a lower consultation rate. This is supported by the finding that within the range 1000 to 3000 patients the consultation length, not the list size, was related to the number of patients seen per surgery. To draw any conclusions, however, it would be necessary to look at the number of surgery sessions. These findings are similar to Butler's, who in his review of published reports on list size noted that the relation between list size and consultation length was unclear, whereas there was evidence of a relation between consultation length and the number of patients seen per surgery session. What is not known is whether longer consultations cause a reduction in consultation rate or whether a lower rate allows the doctor to increase the length of the consultation. An intervention study conducted before and after a change in the number of patients seen an hour would help to clarify this.

The longer estimated consultation length of women doctors agrees with other studies,[10] and it is also known that members of the college differ from non-members in their practice and attitudes. The shorter consultation length associated with not having an appointment system might be either cause or effect; perhaps doctors who conduct shorter consultations do not feel the need for appointments or an appointment system allows for longer consultations by reducing the pressure of time.

The lack of association between the employment of a practice nurse and either the length or number of consultations was perhaps surprising and perhaps suggests that such nurses provide a complementary service to the doctors rather than work in a delegated capacity.

Whatever their present arrangements most doctors thought that they would like to see fewer patients per surgery and spend more time per consultation. The doctors were fairly conservative about the changes that they would like to make, however, those now spending six minutes per patient or less thinking seven and a half minutes ideal and those now spending more than six minutes thinking 10 minutes ideal. It is striking that only 7% of respondents thought that a consulting rate of four or fewer patients an hour was ideal.

Clearly most respondents thought that longer consultations would increase their job satisfaction as well as the quality of care of their patients. The expected reduction in the prescribing rate with longer consultations suggests that respondents thought that either a prescription is sometimes used to terminate a consultation or the pressure of time prohibits management based on education or non-pharmacological methods. This relation between longer consultations and lower prescribing rates has previously been noted. There was less agreement among respondents on the difference that longer consultations might make to investigation rates. The 32% who thought that their investigation rate would increase might have thought that having more time would allow them to analyse and work up their patients' problems better. The 8% who thought that their investigation rates might decrease may be using investigations as a way of terminating consultations—as issuing a prescription is described above. Of those who thought that longer consultations would alter their referral rates, nearly all thought that they would refer fewer patients. Again this suggests that respondents feel too hurried to analyse and deal with their patients properly. The small number (3%) who thought that their referral rate might increase suggests that few think that time constraints cause them to miss serious disease that needs referral. The finding that 47% thought that longer consultations would decrease their patients' consulting rate suggests that many may feel that they and their patients are caught in the vicious cycle of short and frequent consultations.

Given these responses, the question arises: Why, if doctors feel that they would like longer consultations and that these would be beneficial to their patients, do they not make these changes? This question is particularly pertinent for those who thought that such a change would decrease their patients' consultation rate since if this were the case total workload might not increase. Even for those who do not think consultation rate would decrease the methods advocated to allow longer consultations—change in list size and delegation—are within the doctor's control. Perhaps general practitioners feel reluctant to take such a leap into the dark in the absence of hard evidence of the effects such a change would have. In the wake of medical unemployment and the advent of the nurse practitioner such evidence is urgently needed.

References

1 Buchan IC, Richardson IM. Time study of consultations in general practice. No 27. Edinburgh: Scottish Home and Health Department, 1973.
2 Hart JT. General Practice workload, needs and resources in the National Health Service. *J R Coll Gen Pract* 1976;26:885-92.
3 Gray DJP. Just a GP. Gale Memorial Lecture. *J R Coll Gen Pract* 1980;30:231-9.
4 Marsh GN, Wallace RB, Whewell J. Anglo-American contrasts in general practice. *Br Med J* 1976;i:1321-5.
5 Dunnell K, Cartwright A. *Medicine takers, prescribers and hoarders*. London: Routledge and Kegan Paul, 1972.
6 Howie J. General practice: choice before change. *Modern medicine* 1984;May:10-3.
7 Boulton MG, Williams A. Health education in general practice consultations: doctors' advice on diet, alcohol and smoking. *Health Education Journal* 1983;42:57-63.
8 Cartwright A, Anderson R. *Patients and their doctors 1977*. Occasional paper 8. London: Royal College of General Practitioners, 1979.
9 Hughes D. Consultation length and outcome in two group general practices. *J R Coll Gen Pract* 1983;33:143-7.
10 Gray J. The effect of the doctor's sex on the doctor patient relationship. *J R Coll Gen Pract* 1982;32:167-9.
11 Siegel S. Non-parametric statistics for the behavioural sciences. Tokyo-London: McGraw-Hill Kogakusha, 1956.
12 Wilkin D, Metcalfe DHH. List size and patient contact in general medical practice. *Br Med J* 1984;289:1501-5.
13 Butler JR. *How many patients? A study of list sizes in general practice*. Occasional Papers in Social Administration, No 64. London: Bedford Square Press, 1980.

Accepted 13 February 1985