
THE DOCTOR/PATIENT RELATIONSHIP

The doctor/patient relationship and its effect upon outcome

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SUMMARY. The study of 299 chronically ill patients examined the doctor/patient relationship by asking two questions: first, what factors affect the quality of the relationship and secondly, does the doctor/patient relationship affect outcome for the patient? The doctor/patient relationship was measured by indicators of the doctor's awareness of the patient's problems.

The following factors were found to be positively associated with the doctor's awareness: a small number of patient problems, a large number of recent visits, and the patient, rather than the doctor, initiating the consultation. The patient's age and education, the completeness of family care, and duration of care were not found to influence awareness. After eliminating the effect of confounding variables, the relationship between the doctor's awareness and the patient's recovery was maintained for some groups of patients. Awareness did not significantly affect the patient's satisfaction. We list some practical recommendations to aid doctors in increasing their knowledge of their patients.

Introduction

IT is widely recognized that assessments of the process of health care should be associated with measures of outcome. One approach is to relate the technical

competence of care to improvement in the patient's health status. More common now are investigations concerned not only with the technical aspects of care, but also with the doctor/patient relationship (Hulka *et al.*, 1971; Freemon *et al.*, 1971; Starfield, 1973; Ley *et al.*, 1976). In addition, information about health outcomes is often supplemented by measures of compliance and satisfaction.

This study describes the doctor/patient relationship as reflected by the doctor's knowledge of the patient's problems, psychological and social as well as physical. The importance of knowledge and understanding on the part of the doctor of the patient's presenting complaint was emphasized by Magraw (1958). Other writers have pointed out that the activity of history taking ought to lead not merely to the conventional diagnosis, but to an understanding of the patient's problems (Balint, 1964; Greco and Pettinger, 1966; Shocket and Lisansky, 1969; McWhinney, 1972; Browne and Freeling, 1976). We believe that a doctor with a holistic approach will elicit more social and emotional problems than one who pays attention only to physical complaints.

Aims

This study had two purposes: to determine the factors that affect the doctor's knowledge of the patient's problems and to find out if such knowledge has a bearing on the patient's recovery and satisfaction with care.

Method

1. Information from patients

The five participating doctors were part-time members of the Department of Family Medicine at the University of Western Ontario who worked in a group practice in rural south-western Ontario. They had expressed a willingness to co-operate in research.

Adult patients whose problem list on the medical record included one of the chronic conditions listed in Table 1 were eligible for inclusion in the study. When

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This paper was presented at the annual meeting of the North American Primary Care Research Group in April 1976.

©: *Journal of the Royal College of General Practitioners*, 1979, 29, 77-82.

Table 1. Chronic conditions admitting a patient to the study.

Hypertension
Arthritis
Diabetes
Ischaemic heart disease
Congestive heart failure
Other heart ailment
Stroke
Peptic ulcer
Chronic bronchitis, chronic asthma
Chronic skin condition (neurodermatitis, psoriasis)
Chronic back pain
Obesity
Varicose veins

These conditions were chosen by a panel of clinicians on the basis of their high prevalence in general practice.

such patients visited their physician they were interviewed first by one of the authors (M.A.S.) and asked to provide baseline information such as: 1) demographic characteristics; 2) complaints; 3) associated discomforts, worries, disturbances of daily living, and social problems. Each was rated on a four-point scale. The patients were asked specifically about 15 social problems. If there was at least one complaint with associated discomfort, worry, or disturbance of daily living, the patient was asked to enter the study.

2. Information from the doctors

The patients were followed for three months after entering the study. At the end of this period, the doctor completed a questionnaire for each patient. He was asked to list the complaints which each patient had brought to him during the study period and to assess the degree of associated discomfort, worry, and disturbance of daily living. The same list of 15 social problems that had been presented to the patient was given to the doctor with the request that he identify and estimate the magnitude of each one faced by the patient. Since it was not the doctor's memory that was being tested, he was encouraged to consult his records when completing the questionnaire.

The questionnaire was completed at the end of the three-month study period rather than on the day each patient visited, in an attempt to minimize the effect of a constant reminder of the aim of the research—the Hawthorne effect. Two other precautions were also taken: first, the co-operating doctors saw the questionnaire only once before the study began; and secondly, the doctors were not told which of their patients entered the study, although they did occasionally notice a patient being interviewed by the investigator.

3. Comparison of information obtained from patients and doctors

The doctors' responses to the questionnaire were compared with the baseline information which had been

Table 2. Percentage distribution of scores on the five indicators of the doctors' knowledge.

Indicators	Scores			Total	Number of patients
	<0.5	0.5 to 0.99	1.00		
1. Knowledge of complaints	18.7	34.8	46.5	100	299
2. Knowledge of discomforts	27.6	23.1	49.3	100	268
3. Knowledge of worries	25.6	19.5	54.9	100	195
4. Knowledge of disturbances of daily living	23.5	14.3	62.2	100	196
5. Knowledge of social problems	51.5	25.8	22.7	100	229

given by the patient three months earlier. For each patient, five scores were calculated, one for each indicator of the doctor's knowledge (Table 2). Each score was calculated as follows:

$$\frac{\text{the number of problems known by the doctor}}{\text{the total number of problems in that category mentioned to the interviewer}}$$

Thus a perfect score on any indicator was 1.00. If the doctor recorded a problem which had not been mentioned by the patient, this was interpreted as reticence of the patient during the interview with the investigator and did not alter the doctor's score.

4. Measures of outcome

At the end of the three-month follow-up period, the patients were re-interviewed to assess their recovery and satisfaction. Three subjective measures of recovery were used: a) patient's evaluation of general progress ("In general, do you feel better/same/worse than three months ago?"); b) patient's perception of recovery from discomfort, worry, disturbance of daily living, and social problems; and c) level of activity measured by changes in patient's status in terms of being bedridden, inactive, or feeling unhealthy (Public Health Service, 1964). Two measures of satisfaction were used: a scale of satisfaction with the personal qualities of the doctor (Zyzanski *et al.*, 1974), and the patient's opinion of the amount of help given by the doctor.

Results

Four hundred and sixty-two adult patients had at least one of the chronic conditions which were required for entry into the study. Of these, 45 refused the initial interview with the investigator (these patients were similar in terms of age and sex to the study group); 54 were missed, 33 because they were too ill and the rest through an administrative error (these 54 patients were older than the study group) and finally, 44 were ineligible because they had no complaint with

Table 3. Doctors' knowledge of each kind of social problem.

Social problems	Number of patients bothered by problem	Percentage of these known to the doctor
1. Illness or injury of a family member	98	70.4
2. Problem (other than illness or injury) of an elderly member in your family	37	16.2
3. Death of a friend or family member	41	29.3
4. Separation from friend or family member	35	20.0
5. Had to give up something valuable or useful (i.e. job, car, house)	30	33.3
6. Problems with neighbours or friends (i.e. not getting along, misunderstanding)	14	7.1
7. Problem with child or children (i.e. discipline, not getting along)	47	55.3
8. Problem with husband or wife (i.e. not helping out, not getting along)	25	56.0
9. Problem with boss (i.e. not getting along)	3	33.3
10. Other problem at work	11	63.6
11. Being too busy	63	22.2
12. Being bored with life	43	30.2
13. Problem with money	29	34.5
14. Being lonely	55	45.5
15. Any other personal problem. What is it?	22	45.5

Table 4. Percentage distribution of scores on knowledge of discomfort by number of complaints with discomfort.

Number of complaints with discomfort	Knowledge of discomfort Scores			Total
	<0.5	0.5 to 0.99	1.00	
One	32.2	0	67.8	100
Two	12.5	54.5	33.0	100
Three plus	47.1	41.2	11.8	100

$\chi^2 = 113.8$, d.f. = 4, $p < 0.001$.

Table 5. Percentage distribution of scores on knowledge of social problems by number of visits in the six-month period preceding entry into the study.

Number of recent visits	Knowledge of social problems Scores			Total
	<0.5	0.5 to 0.99	1.00	
Zero/one	73.1	11.5	15.4	100
Two	59.6	19.1	21.3	100
Three plus	37.5	35.8	26.7	100

$\chi^2 = 21.4$, d.f. = 4, $p < 0.001$.

discomfort, worry, or disturbance of daily living (these patients were similar in age and sex to the study group). The remaining 319 patients were asked to co-operate with the follow-up interview and only 20 refused. Thus the effective response rate was 72 per cent:

$$\frac{299}{462-44} = \frac{299}{418}$$

Most of the 299 patients who completed the study had more than one of the list of chronic conditions and more than one complaint. Nearly half were between 45 and 65 years old, almost three fifths were female, and two thirds had no high-school education. Compared with the 1971 rural population of Ontario aged 25 years and over, middle-aged people and those with limited education were over-represented in the study group.

Degree of knowledge

The doctors' awareness of complaints, discomforts, worries, and disturbances of daily living can be described as moderately high. Their scores on the indicator of knowledge of social problems was far less high (Table 2). Table 3 shows the doctors' knowledge of each kind of social problem.

Factors influencing knowledge

1. We predicted that scores on the indicators of physicians' knowledge would vary according to the age and education of the patient. This prediction was not supported.

2. We predicted that the greater the number of the patient's problems, the lower would be the level of the physician's knowledge. This prediction was supported at a high level of statistical significance for all five indicators of knowledge ($p < 0.001$). As an example we display in Table 4 the cross-tabulation of knowledge of discomfort by number of complaints with discomfort.

3. We predicted that frequent visits by the patient in the six-month period preceding entry into the study would increase the doctor's knowledge. This prediction was supported for only one of the indicators, knowledge of social problems (Table 5).

4. An unpredicted observation was that the physician's knowledge of the patient's complaints was greater when the patient initiated the consultation. This difference was statistically significant for four of the five indicators and the remaining one, knowledge of worries, approached significance ($p = 0.07$). Table 6 gives as an example of the difference the physician's knowledge of the total number of complaints.

5. We predicted that the physician's knowledge would vary directly with the duration of his care of the patient and with the completeness of his care of the family. Duration of care was measured in the following intervals: less than one year, two to four years, five to nine years, and 10 or more years. Completeness of family care by the physician was measured on the following three-point scale: minority, majority, or all

Table 6. Percentage distribution of scores on knowledge of the total number of complaints by who initiated the visit.

Visit initiated by	Knowledge of complaints Scores			Total
	<0.5	0.5 to 0.99	1.00	
Patient	6.6	24.6	68.9	100
Doctor	21.8	37.4	40.8	100

$\chi^2 = 16.6$, d.f. = 2, $p < 0.001$.

family members were cared for by the physician. No association was found between the physicians' knowledge and either duration of care or completeness of family care.

The effect of doctors' knowledge upon outcome

1. There were no significant associations between any of the five indicators of knowledge and either of the measures of the patient's satisfaction with the care received. Nevertheless one subgroup of patients revealed non-significant trends toward greater satisfaction, measured by the scale of Zyzanski and colleagues (1974), as the scores on four of the five indicators of doctor's knowledge increased. Table 7 shows the trends for the four indicators. The subgroup of patients referred to had been randomly chosen to respond to the intermediate questionnaire, one of three versions of the scale of satisfaction with the personal qualities of the physician. Details of the three versions are provided elsewhere (Stewart and Wanklin, 1978).

2. Of the three subjective measures of the patient's recovery only one, the patient's perception of recovery, showed a positive association with the doctor's knowledge. When the confounding variable of who initiated the visit was held constant, the significant positive association between doctor's knowledge of patient's complaints and patient's recovery was evident only for the group whose visits were patient-initiated (Table 8).

Discussion

There are three limitations of this study which deserve emphasis:

1. The results, based on information from five doctors serving a rural population, cannot be generalized to all family doctors and to all types of patients.
2. The scores on the indicators of the doctor's knowledge were based upon a comparison of data elicited from the patient by one of the investigators with those recorded or remembered by the doctor. Implicit in this method was the assumption that the interviewer elicited the truth. Such an assumption can be justified but not proven. The interview, similar to the approach used and discussed by Cartwright and her

Table 7. Percentage of patients with high satisfaction scores by doctor's knowledge shown only for patients who were administered the intermediate version of the satisfaction scale.

Scores on doctor's knowledge	Percentage of patients with high satisfaction scores*	N
Knowledge of the complaints		
<0.5	42.9	21
0.5 to 0.99	46.7	30
1.00	47.1	51
Knowledge of the discomforts		
<0.5	42.9	28
0.5 to 0.99	38.1	21
1.00	58.5	41
Knowledge of the worries		
<0.5	37.5	16
0.5 to 0.99	25.0	12
1.00	60.5	38
Knowledge of the disturbance of daily living		
<0.5	50.0	16
0.5 to 0.99	50.0	6
1.00	57.4	47

*A high score on the satisfaction scale is >69.2.

Table 8. Patients' perception of recovery according to the doctor's score on knowledge of complaints (for patients who initiated the visit to the physician).

Scores on doctor's knowledge of the complaints	Patients' perception of recovery			Total	N
	No improvement	Somewhat improved	Greatly improved		
<0.5	75.0	0.0	25.0	100	4
0.5 to 0.99	23.1	61.5	15.4	100	13
1.00	25.7	22.9	51.4	100	35

$\chi^2 = 12.5$, d.f. = 4, $p < 0.02$.

colleagues (1976), was based on a list of questions devised by clinicians but differed from a doctor's method of history taking in that every question was asked of every patient.

Three choices for such an interview are available: 1) direct observation of the doctor/patient visit by a clinician or other observer trained to notice missed leads; 2) baseline interview by a clinician other than the patient's doctor; and 3) a questionnaire given to the patients. When we compared information from a questionnaire with that from an interview, we found that the questionnaire provided incomplete information. The first two methods have been used by others and showed similar results to ours, thereby lending credibility to our method (Querido, 1963; Williamson *et al.*, 1964; Bentsen, 1976). Because, in

order to reduce the Hawthorne effect, the doctor completed his questionnaire three months after the interview with the investigator, it was not possible to deal with problems known to the doctor but not to the investigator. Ideally such problems should have increased the doctor's score, but we thought it more important to avoid any effect upon the doctor's behaviour during the three-month period of study.

3. The interview with the investigator may have affected the content of the visit with the physician. Eighty-three per cent of the study patients were interviewed before seeing their doctor. However, because the investigator was occupied elsewhere, 17 per cent were interviewed after their consultation. A comparison of these two groups of patients showed no difference in terms of doctor's awareness. Either the interview with the investigator had no affect upon the ensuing doctor/patient visit or the following two possible effects occurred with equal frequency: 1) the interview organized the patient's thoughts and aided him in communicating with the doctor; 2) the interview provided the patient with an opportunity to discuss his problems and thus reduced his need to mention all of them to the doctor.

This study, unlike others (Bart, 1968; Korsch *et al.*, 1968), found that the age and education of patients did not affect the doctor/patient communication. Our findings from an urban setting gave results similar to those of the present study, suggesting that the doctors who participated in our studies, all teachers of family medicine, are successful in overcoming age and other cultural barriers to communication (Stewart *et al.*, 1975).

Table 3 shows that doctors were commonly aware of one problem, regardless of the number presented to the investigator. This finding, supported by another study (Bentsen, 1976), suggests that doctors tend to focus on one complaint, probably the most pressing one.

Our observations on the relationship between the doctor's knowledge and the number of recent visits by the patient suggest that the complaints, discomforts, worries, and disturbances of daily living were relatively easy for the patient to reveal, while social problems took more time and mutual involvement on the part of the doctor and patient.

Balint and colleagues (1970) pointed out that repeat prescriptions may replace intimacy and discussion of the patient's problems of living. Perhaps our observations about the initiator of the visit illustrate a similar situation, in which doctors have their own expectations of a follow-up visit and structure the dialogue around these legitimate concerns. In this context, such questions as "What else is bothering you?", "How are things going?", may seem unnecessary.

Duration of care and completeness of family care by one doctor have been studied indirectly through evaluation of comprehensive care programmes (Gordis and Markowitz, 1971; Becker *et al.*, 1974). The results

have been equivocal. Nevertheless a strong belief in their importance seems widespread. A possible explanation for our negative finding is that the method of categorization did not take account of the number of contacts between patients and doctor.

This study, and other recent research, suggests that there are aspects of the doctor/patient relationship which make important contributions to compliance, satisfaction, and recovery (Korsch *et al.*, 1968; Hulka *et al.*, 1975; Ley *et al.*, 1976). We observed that the doctor's knowledge of the patient's complaints was positively associated with their alleviation. Further study would be productive if it explained *how* the doctor's knowledge of different kinds of problems affected the patient's subjective assessment of recovery. Is the patient comforted merely by talking about certain kinds of problems, while for others, specific activities in management are essential? Some observations relevant to this question are reported elsewhere (Stewart and Buck, 1977).

Our findings about the factors influencing the quality of the doctor/patient relationship can be put to some practical use. They suggest that doctors could increase their awareness by devoting particular attention to multiple problems and to the management of follow-up visits.

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