Soc Sci Med Vol 32, No 11, pp 1301–1310, 1991
Printed in Great Britain 

0277-9536/91 $3 00 + 0 00


# DOCTOR–PATIENT COMMUNICATION AND THE QUALITY OF CARE

JOZIEN BENSING
Netherlands Institute for Primary Health Care, P O Box 1568, 3500 BN Utrecht, The Netherlands

**Abstract**—In this article a comparison is made between three independent sources of assessment of medical consultations A panel of 12 experienced general practitioners rated 103 consultations with hypertensive patients on the quality of psychosocial care There was a wide consensus between the judges, resulting in a high reliability score Two contrasting groups were formed consultations that were rated high and those rated low in quality of psychosocial care A comparison was made between this general assessment of the quality of psychosocial care and a more detailed assessment of the same consultations on nine much used communication variables made by trained psychologists Knowledge about doctor–patient communication proved to predict very well as to which quality group the consultations belonged A very high percentage (95%) was predicted accurately, solely on the basis of these nine communication variables Affective behaviour, and especially nonverbal affective behaviour had the strongest predictive power In the last part of the study a third source of asessment, i e patients' satisfaction was compared with both other sources Much lower relationships were found, although most were in the predicted direction Affective behavior seems to be the most important in determining patient's satisfaction The implications of these findings are discussed

## INTRODUCTION

Since Michael Balint challenged the medical world with his statement "The Doctor is the Drug" [1], many researchers have found themselves in the unruly but rich and relevant research area of doctor–patient communication This has resulted in a steady flow of publications Generally speaking, however, art of assessing the *quality* of physician communication is not well developed Information on communication skills is mostly derived from studies on patient *knowledge*, patients' *compliance* and patient *satisfaction* [2–4]* Whilst patients are a relevant source of information on certain aspects of care, Lebow [8] advises caution in the use of patient assessments since these do not correlate highly with what he calls 'objective', i e physician defined, measures of care, a result confirmed by DiMatteo and DiNicola [9] In this article we focus on (physician defined) quality of care In doing so we hope to meet the criticism "that the results of much research on doctor–patient communication have no face validity for clinicians and, consequently, are not readily used to change physician's behaviour in a desired direction" [5] As changes in the behaviour of physicians is the ultimate goal of our research program [10], it is relevant to explore the relationship between provider-defined quality of care and the concepts, used in this research program [10–13] If it were possible to identify a set of doctor–patient communication variables that have great powers of discrimination between consultations rated high in quality and those that are rated low in quality, this would indicate which types of behaviour should be trained in medical education

In line with Dimatteo we have classified the quality of physicians conduct along three dimensions

1 a traditional technical dimension which involves technical knowledge, skill, etc
2 a nontraditional dimension which involves concern for psychosocial aspects of care
3 an 'art'-dimension which involves the interpersonal behaviour of the physician, his or her personal qualities and in general how the care is delivered [9].

Whilst not in any way underestimating the relevance of the other dimensions, we restrict ourselves in this article to the second the quality of *psychosocial* care Psychosocial care is an underdeveloped area that needs specific research effort It is puzzling that while on one hand there is a growing insight that psychological and social factors influence the development and severity of nearly every disease and the recovery and even survival of very many patients [14–16], on the other hand the implications of this knowledge are scarcely translated either into every-day practice, into medical education programs, or in the formulating of explicit criteria in quality assessment programs [14, 17, 18] As Kerr White [14] stated in his fascinating report of the Wickenburg Conference,

> In the face of this evidence we need to ask why medicine has been so slow in acting to implement and increase this knowledge Why do we continue to behave as if it did not exist?

Psychosocial care is important in all medical practice, but especially in general practice not only in the detection and treatment of psychiatric, psychological and social problems but also (and perhaps even more because of the disguised influence of psychosocial factors) in most of the somatic problems that are presented in primary care the major killers as well as the self-limiting diseases, the chronic conditions as

*See for a review over this latter group of publications till 1983, Inui and Carter [5], and for a description respectively meta-analysis on 61 of these studies till ca 1986 Roter, Hall and Katz [6, 7]

well as (many) acute problems, clear diagnoses as well as unidentified vague complaints

There is another reason for concentrating on the quality of psychosocial care Many concepts in doctor–patient communication research (e g 'affective behaviour' or 'empathy') originate from psychological theories (e g Roger's theory of 'unconditional positive regard' [10, 19]) From this we hypothesize a strong relationship between the quality of psychosocial care and these communication variables

To stay in line with other publications in this field, and also to test the relevance of Lebow's caution in the use of patient assessments, we included a measure of patient satisfaction Many authors have argued that patients' assessment of the efficacy of their physicians' medical treatment (and hence their satisfaction) will be based on the perceived practitioners' affective behaviour (rather than on his instrumental behaviour) and on his attitude toward the patient as a human-being [20–25] From this we may hypothesize (despite Lebow's advice, but in line with some research findings [22–30]) a positive relationship between patient satisfaction on one hand and provider-assessed quality of psychosocial care, respectively doctor's affective behaviour in doctor–patient communication, on the other

## RESEARCH QUESTIONS

This leads us to two main research questions

1 Is it possible to develop a reliable measure of the 'quality of psychosocial care', and, if this is so
2 Is it possible to predict which consultations will be rated high—respectively low—on the quality of psychosocial care from ratings on certain aspects of doctor–patient communication (variables to be specified later on)? And what is the relation between quality of care, doctor–patient communication and patient satisfaction?

In this last research question we compare three kinds of assessment of the same consultation (Fig 1) (a) the assessment of the quality of psychosocial care by experienced general practitioners (b) the assessment of doctor–patient communication by trained psychologists, and (c) the assessment of the consultation and the GP in general by the patient himself This procedure can be considered as a mutual cross-validation of the three measures

## *Study I Assessing the Quality of Psychosocial Care*

### *Methods*

*Selections of the consultations* To assess the quality of care we used video recordings of real doctor–patient consultations These are considered to produce the most valuable information for assessing the quality of care in general practice [2, 5, 31] and especially the quality of psychosocial care, because these video recordings enable us to assess nonverbal as well as verbal behaviour [5] We selected the consultations for this study from videotaped doctor–patient consultations we had collected and observed in previous research projects [12, 13] These observations have been computerized to enable further analyses, besides, the tapes are ready for new observations (see for more information about this collection of video recordings Bensing, 1983 [32])

Carter and Inui [5] concluded that the heterogeneity of consultations is one of the big problems facing current physician–patient interaction research That is why we decided to select consultations which had a common diagnosis We preferred a diagnosis with a high medical relevance level We looked for the kind of problem that evidently includes both medical and psychosocial aspects In order to be able to do the necessary statistical analyses, it had to be a diagnosis with a high frequency level in general practice

Hypertension (and other blood pressure problems) proved to meet all these requirements The medical relevance of blood pressure problems is unchallenged, as hypertension is a known risk factor for cardiovascular diseases mortal enemy number one It is generally considered to be serious by general practitioners Hypertension also appears to be a condition in which both medical and psychosocial aspects are considered to be relevant by general practitioners Grol [33], Verhaak [34] and, in a slightly different way, Link *et al* [35] made use of this characteristic of the problem 'hypertension' by using 'hypertension' as an item in a rating scale to measure the so-called 'psychosocial orientation' of a general practitioner That fact that patients are aware of the psychosocial aspects of hypertension too, was illustrated by a nationwide research project run by the Netherlands Consumer Association [36], results which are in line with a survey conducted in 1973 by the National Institute of Mental Health in the U S A [37]

A general look in the vast collection of literature on 'hypertension' shows us remarkable differences in the

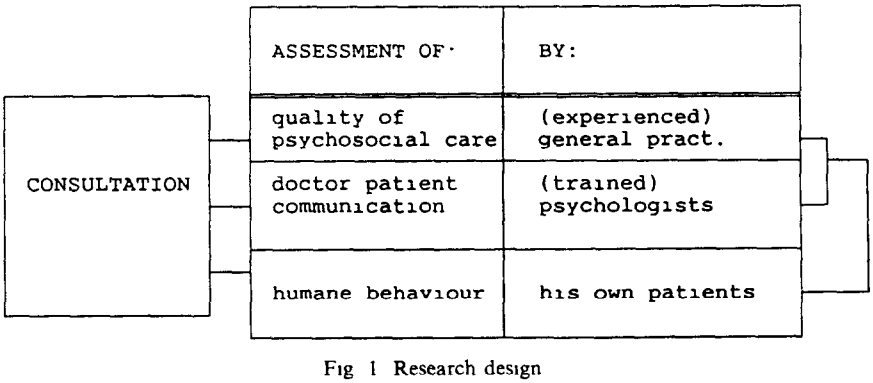



Fig 1 Research design

Table 1 Age–sex distribution of patients with hypertension or other blood pressure problems in videotaped consultations, compared with figures from the British Second National Morbidity Survey [28]

| Age | Sex | | | |
|---|---|---|---|---|
| | Man | Woman | Total | Total NMS |
| <45 | 11 | 10 | 21 (20%) | (10%) |
| 45–64 | 10 | 23 | 33 (42%) | (47%) |
| 65–74 | 11 | 14 | 25 (24%) | (29%) |
| ⩾75 | 3 | 11 | 24 (14%) | (14%) |
| Total | 35 (34%) | 68 (66%) | 103 (100%) | (100%) |
| NMS | (35%) | (65%) | (100%) | |

amount of attention paid to the psychosocial aspects of this condition In the epidemiological literature there is a widespread acceptance of the influence of social and psychological factors [38–40], even of the evident influence of a wrong diagnosis 'hypertension' on the mental state of *a priori* healthy people [36, 41] But in the literature about the (medical education of) the treatment of hypertension, there is a remarkable lack of attention to the growing body of knowledge that shows that the onset, severity, and treatment of hypertension is influenced by psychosocial factors A striking example of this is given to us by Dove's review of sets of explicit criteria for the diagnostic work-up of hypertension (cited by Donabedian, 1982) more than 60 criteria have been formulated by different groups of physicians, and not one of these criteria has to do with psychosocial factors [18]! Hypertension proves to be an eminent example of Kerr White's lamentation, "Why do we continue to behave as if this knowledge did not exist" [14] Hypertension seems to be a suitable case for treatment in this research project

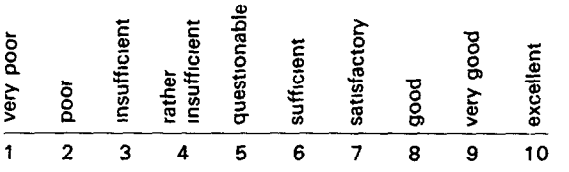
From one file in our video store ($n = 1569$), we selected all the consultations involving hypertension or other blood pressure problems (ICPC-codes K85–K87) We found 103 consultations that met the rigourous demands of technical quality (6 6%) This figure is to be expected from a random sample of consultations in general practice [42] The age–sex distribution of the patients is given in Table 1 and is much similar to distributions found in morbidity research in general practice [43] These 103 consultations have been used in this article

*Procedures* Twelve general practitioners (further to be called 'judges') were asked to rate the selected consultations ($n = 103$) The judges were all experienced general practitioners with a minimum of 5 years in practice Their ages varied from 30 to 70 Four of them were women They had no knowledge of the previous observation sessions

The judges were given a set of written instructions about how to assess the different dimensions of the quality of care (medical-technical, psychosocial and the management of the doctor–patient relationship) 'Psychosocial care' was defined as 'receptiveness for and treatment of the (aetiological and consequential) non-somatic aspects of the presented health problem'. In their assessment of the quality of psychosocial care the judges were asked to give *one general judgment on the total consultation*, considering the GP's

- sensitivity to the patients' verbal and nonverbal cues that may hint at non-somatic aspects of the health problem
- active explorations of the patients' possible psychosocial problems
- informativeness about the relationship between psychosocial problems and physical sensations or manifestations
- type of counselling, passive (supporting, comforting, reassuring) or active (intention to insight-promotion or behavioral change)
- undue attention to psychosocial aspects (too much or uni-directional attention can be as bad as too little!)

As with Dutch school marks, their ratings could vary between 0 and 10




The judges got a short training-program to become familiar with the method and the concepts used In order to avoid their mutually influencing one another, the judges worked individually To avoid bias from earlier ratings, consultations involving the same doctor (there were 27 different GP's on the video) were spread over the videotapes One of the researchers was always at hand to answer questions Sometimes it happened that a judge knew a particular general practitioner on the video To avoid bias, he did not rate these consultations

*Results*

The assessment procedure proved to be feasible; the judges had no apparent difficulties in assessing the videotaped consultations in conformance with our instructions The scale showed a good range of ratings all the judges used 6 to 9 values of the 10-point scale The judges were not afraid to give low ratings as well as high ratings The average mean of the total group is 6 0, with individual means ranging from 5 3 to 8 1

In Table 2 the correlations between the 12 judges are given Most of the correlations (92%) are significant. Moreover the interassessor-reliability, measured by Cronbach's Alpha, is high 0 88 Cronbach's alpha did not rise when any of the judges was excluded from the analysis So, it is possible to use the mean as a psychosocial quality measure However, interassessor reliability is just one and perhaps not the most important condition to develop an adequate instrument for quality of care Another condition is intercase reliability, which means that a high score on one consultation of a GP goes along with a high score on other consultations of this same GP We performed an intercase reliability-test on those doctors from our file who had 5 or more videotaped consultations. The results of these analyses for doctors are presented in Table 3

The reliability figures are high with an average Cronbach's alpha of 0 83 A oneway analysis of variance shows larger differences between GP's than within ($F = 12\ 67$; $P < 0\ 0001$) These results give additional weight to the instrument and warrant its use as a psychosocial quality measure

Table 2 Correlation matrix of the ratings of 12 independent judges

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| judge 1 | | | | | | | | | | | | |
| judge 2 | 0 32* | | | | | | | | | | | |
| judge 3 | 0 26† | 0 49* | | | | | | | | | | |
| judge 4 | 0 44* | 0 35* | 0 32* | | | | | | | | | |
| judge 5 | 0 30† | 0 50* | 0 45* | 0 31† | | | | | | | | |
| judge 6 | 0 47* | 0 50* | 0 50* | 0 43* | 0 53* | | | | | | | |
| judge 7 | 0 50* | 0 41* | 0 46* | 0 37* | 0 46* | 0 72* | | | | | | |
| judge 8 | 0 44* | 0 15 | 0 40* | 0 40* | 0 30† | 0 55* | 0 62* | | | | | |
| judge 9 | 0 40* | 0 26† | 0 49* | 0 50* | 0 15 | 0 49* | 0 42* | 0 34* | | | | |
| judge 10 | 0 45* | 0 31† | 0 30† | 0 41* | 0 29† | 0 52* | 0 55* | 0 42* | 0 38* | | | |
| judge 11 | 0 17 | 0 35* | 0 40* | 0 31* | 0 22 | 0 36* | 0 53* | 0 23 | 0 32* | 0 28† | | |
| judge 12 | 0 60* | 0 28† | 0 39* | 0 47* | 0 45* | 0 64* | 0 65* | 0 56* | 0 34* | 0 38* | 0 39* | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |

One-tailed significance †$P \leq 0\,01$, *$P \leq 0\,001$
Minimum pairwise $n$ of cases = 74

Figure 2 shows the distribution of the ratings on this quality measure The lowest rating is 3 3, the highest 8 0 The mean is 6 2, the median 6 3 The standard deviation is 0 96 The distribution has a slight positive skewness, but is a reasonable approximation of a normal distribution In the second study the ratings on this quality measure are used in the analyses When it was necessary for some specific analyses to compare contrast-groups, all consultations with ratings 'questionable' or less ($< 5\,9$) were grouped—as in Dutch classrooms—in the 'negative' category ($n = 36$, this is 35% of all consultations), in the same way all consultations with ratings 'satisfactory' or more ($> 7\,0$) were classified as 'positive' ($n = 25$, this is 24% of all consultations)

### *Study II Doctor–Patient Communication, Patient Satisfaction and the Quality of Care*

#### *Methods*

*Doctor–patient communication* For the data on doctor–patient communication we made use of the data-collection and observations of a previous study carried out by our research group The methods and reliability figures have been published elsewhere [12, 13, 34] Note that these observations of doctor–patient communication were done by psychologists, whilst the quality assessment in the first part of this study was done by general practitioners (and at a different time) There is no contamination in the observation of the independent and dependent variables in this study

Three groups of doctor–patient communication variables have been used

1 Affective behaviour The concept 'affective behaviour' (which includes attentive, listening, emphatic behaviour and the ability of the physician to communicate concern, warmth and interest in the patient as a whole person) originates from psychological theories, especially the Rogerian theory of 'unconditional positive regard' [44] but has since long made its introduction into the medical world (with Balint [1] as its famous pioneer) Now it is by far the most popular concept in doctor–patient communication research [3–7] To summarize the major findings, affective behaviour proves to be related to patients' compliance [20, 21, 26, 45, 46] and patients' satisfaction [22, 23, 25–30] It seems also to be related to the doctor's ability to detect psychiatric illness [13, 47–49] Gask *et al* [47] found an increase in affective behaviour after a training course to improve psychiatric interviewing styles, together with a significant improvement in the trainee's ability to identify psychiatric illness accurately

In this study affective behaviour has been operationalized in four variables (for more details see Refs [12, 13, 34])

1 shown interest (5-point scale)
2 nonverbal attention (proportion of time GP looks at patient)
3 encouraging (utterances/min)
4 verbal empathy (utterances/min)

2 Systematic and purposive behaviour This group of variables is derived from a popular 'school' among Dutch general practitioners, called 'the methodical approach' (developed by the Netherlands College of General Practitioners, see for an overview of this development since 1976 Sluys and van der Leden [50] It refers to the active dimension in the GP's behaviour From our own previous research we learned that a passive, empathic attitude is perhaps a necessary, but not always a sufficient condition to elicit information from the patient about more per-

Table 3 Intercase-reliability of doctors with 5 or more consultations

| Number | Cronbach's alpha |
|---|---|
| Doctor 411 | 0 81 |
| Doctor 415 | 0 85 |
| Doctor 416 | 0 87 |
| Doctor 419 | 0 91 |
| Doctor 420 | 0 66 |
| Doctor 423 | 0 85 |
| Doctor 426 | 0 77 |
| Doctor 427 | 0 90 |
| Average | 0 83 |

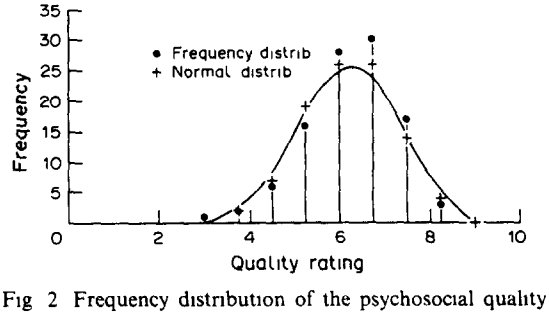



Fig 2 Frequency distribution of the psychosocial quality ratings

sonal or emotional topics [10, 11], a view that is shared by others engaged in interview-training in primary care [47] By active interventions (for instance the introduction of new topics) the general practitioner can show his willingness to discuss psychosocial aspects of the presented problem This is all the more important in general practice where patients are not always conscious of the multifaceted nature of their problems, and not always sure of their doctor's interest in non-somatic matters Knowing that patients do not always present their main problems on the first occasion, the general practitioner should ask himself with every new patient '*Why* has *this* patient come to *me* with *this* specific problem at *this* specific moment in time?' Clarifying the reason for the encounter is one important feature of 'systematic and purposive behaviour', the systematic structuring of the consultation if more than one problem is presented, another To sum up, the variables in this subgroup are the following

1 clarifying (proportion of complaints for which the reason for encounter is discussed)
2 structuring (proportion of consultations with a structured approach)
3 purposive probing (introduction of new topics)

3 Patient-centered behaviour Since Byrne and Long published their classical 'Doctors talking to patients' [57], there has been a growing interest among researchers in doctor–patient communication in terms of one of their main concepts, patient-centered behaviour (as opposed to doctor–patient behaviour) Byrne and Long introduced the so-called power-shift model in general practice, and especially when non-somatic aspects are part of the problem, it is necessary to use the knowledge of the patient (himself an expert on his own feelings) in understanding the origin of the problem and trying to find possible ways of solving it Barsky *et al* [52] also fomulated several reasons for a patient-centered structure for the medical interview in primary health care they state that the interview itself involves negotiation and consensus seeking, rather than interrogation, inquisition and prescribing Speedling *et al* [53] follow a similar line of reasoning in their plea for a yardstick that goes beyond the one dimensional concept of the 'friendly physician' They state that for a consultation to be effective the patient has to get involved in medical decision-making 'which may involve a great deal of hard work and include periods of conflict and need for compromise' Trying to involve the patient in medical decision-making is the more important in primary care, where the physician manages symptoms and disability as much as he cures biological diseases, and were it is the patient himself who actually has to carry out the plan of management and treatment Following Byrne and Long [51], we use a 5-point scale to measure the degree of influence the patient gets in a consultation And like them we make a distinction between the diagnostic phase and the therapeutic phase The operationalisations are

1 patient-centered behaviour in the diagnostic phase (5-points scale)
2 patient-centered behaviour in the therapeutic phase (5-points scale)

*Patient satisfaction* For the data on *patient satisfaction* we also make use of previous work At the time of the video-recordings, immediately after the consultation, the patients were asked to fill in a questionnaire with a Patient Satisfaction Scale This scale was developed by Verhaak [34], it is a shortened and slightly modified version of the patient satisfaction scale of Cassee [54], a much used scale in the Netherlands The scale consists of a questionnaire with 6 items of a five-point Likert rating format (see Appendix) The items are similar to items used in other patient satisfaction questionnaires [53–60] They reflect Ware's dimension of 'humaneness' [59, 60], or what other authors described as 'affective satisfaction' [56] or 'evaluation of expressivity' [57]

The scale has a moderate reliability of 0 72 (Cronbach's alpha) The scale has one clear dimension a factor analysis showed one factor with an Eigenvalue of 2 7 and 46% explained variance The factorscores are further used in this study

*Results*

We want firstly to link the quality of psychosocial care with different aspects of doctor–patient communication To be more specific we want to know if and to what extent certain much used variables in research on doctor–patient communication can predict whether a consultation will be rated high or low in terms of the quality of psychosocial care Thereafter, we will examine the interrelationships between the quality of care, doctor–patient communication and patient satisfaction, therewith linking the results of this study with others from the literature

In Table 4, the mean and standard deviation are given of the communication variables for the consultations that have positive, respectively negative ratings for the quality of psychosocial care The differences between the two subgroups (measured by the $t$-test) are given in the last column We see that there are significant differences between the positively and negatively rated consultations for all the variables of the subgroup 'affective behaviour' and all the variables of the subgroup 'patient-centered behaviour' This means that in positively rated consultations, the general practitioner shows more interest in the patient, has more eye-contact, shows more empathy (by reflecting upon the words of the patient or paraphrasing what he says), and encourages him more by semiverbal nonspecific utterances (like hm-hm, ah etc ) In these consultations he is also more patient-centered, whereas in the negatively rated consultations he is more doctor-centered This applies both to the diagnostic and the therapeutic phase The variables from the subgroup 'systematic and purposive behaviour' do not yield significant differences between the two subgroups

A discriminant analysis was performed in order to get a better understanding of the independent contribution of the nine communication variables to the discrimination between positively and negatively assessed consultations (see Table 5)

An impressively high percentage of the consultations (95%) can be predicted correctly as belonging to the positively—respectively negatively—rated, group of consultations A stepwise variable selection shows that 'nonverbal attention', that is the amount

Table 4 Communication variables in consultations with a high, respectively low psychosocial quality assessment

| Variable | Positive $x$ | (SD) | Negative $x$ | (SD) | Difference $t$ | $P$ |
|---|---|---|---|---|---|---|
| Affective behaviour | | | | | | |
| interest | 4 0 | (0 7) | 2 9 | (0 7) | 6 48 | <0 000 |
| nonverbal attention | 0 63 | (0 2) | 0 27 | (0 2) | 8 12 | <0 000 |
| encouraging | 3 9 | (2 2) | 1 9 | (1 2) | 4 27 | <0 000 |
| verbal empathy | 0 59 | (0 58) | 0 14 | (0 19) | 3 85 | <0 001 |
| Purposive structuring | | | | | | |
| clarifying | 1 2 | (0 3) | 1 3 | (0 4) | −0 47 | n s |
| structuring | 2 5 | (0 7) | 2 4 | (0 8) | −0 15 | n s |
| purposive probing | 1 5 | (1 5) | 1 1 | (1 1) | 1 23 | n s |
| Patient-centered behaviour | | | | | | |
| diagnostic phase | 3 4 | (0 9) | 2 4 | (1 0) | 3 85 | <0 000 |
| therapeutic phase | 3 0 | (0 9) | 2 3 | (1 1) | 2 76 | <0 008 |
| Total | | $n = 41$ | | $n = 32$ | | |

of eye-contact, has the strongest predictive power, followed by 'shown interest' (also nonverbal) Other variables that have a significant independent influence ($P < 0\ 000$) on the chance of a consultation being rated positively or negatively by independent judges are 'patient-centeredness in the diagnostic phase', 'verbal empathy', 'clarifying' and 'purposive probing' Summarizing the results, we may conclude that the judges let themselves be guided in their rating of the quality of psychosocial care mainly by the 'affective behaviour' of the GP in question (and especially the nonverbal affective behaviour shown interest and eye-contact), and—somewhat less—by the more verbal (and active) ways a GP tries to get patient's involvement in the consultation by clarifying the reasons for encounter, purposive probing and giving the patient influence in the diagnostic phase of the interview

In the last part of this study we want to examine the relationship between the ratings of the judges on the quality of psychosocial care, the communication variables and the expressed satisfaction of the patient As stated before, we hypothesize a positive relationship between the satisfaction of the patient and the ratings of a panel of independent general practitioners We also hypothesize a positive relationship between the satisfaction of the patient and the communication variables of this study, this hypothesis is enforced by the fact that these communication variables prove to be highly related to the ratings of the panel judges In Table 6 the results are presented In the first column the correlations are presented between patients' satisfaction on one hand, and the panel's assessment of psychosocial quality, respectively the observed doctor–patient communication on the other In the second column the correlations are presented between the panel's assessment of psychosocial quality on one hand and the observed doctor–patient communication on the other to make a comparison possible of the relative contribution of the different sources

Table 5 Stepwise discriminant analysis and classification table with quality as dependent and 9 communication variables as independent variables

| Step | Entered | Wilk s lambda | Significance |
|---|---|---|---|
| 1 | Nonverbal attention | 0 558 | 0 000 |
| 2 | Interest | 0 384 | 0 000 |
| 3 | Patient-centered behaviour in diagnostic phase | 0 334 | 0 000 |
| 4 | Verbal empathy | 0 296 | 0 000 |
| 5 | Clarifying | 0 274 | 0 000 |
| 6 | Purposive probing | 0 267 | 0 000 |

95% Correct classifications
1 canonical discriminant function with an EIGEN value of 2 75

| Actual group | ($n$) | Predicted group membership: High quality | Low quality |
|---|---|---|---|
| High quality | (26) | 25 (96%) | 1 (4%) |
| Low quality | (36) | 2 (6%) | 34 (94%) |
| Total | (62) | 27 | 35 |

Patient's satisfaction on the 'humaneness' or 'the affective aspects' of the consultation has a barely significant ($P = 0\ 045$) and not very high (0 19) correlation with the panel-assessed quality of psychosocial care Of the communication variables three variables have a slight relationship ($P = 0\ 05$) with patients' satisfaction 'shown interest', 'verbal empathy' and 'purposive probing' The other correlations are low to very low A discriminant analysis with patients' satisfaction as dependent and the nine communication variables as independent variables (analogue to the discriminant analysis of the quality rating, described above) showed 77% correct predictions (see Table 7), which is only 27% more than chance (with two groups about 50% of the consultations would have been predicted correctly by chance) The variables with an independent (albeit small) influence on patients' satisfaction were (in this order)

1 nonverbal attention
2 verbal empathy
3 encouraging
4 purposive probing

## CONCLUSION AND DISCUSSION

This study has produced some interesting results First, it proved to be possible to develop a reliable instrument for the assessment of the quality of psychosocial care (interassessor alpha = 0 88, average intercase alpha = 0 83), using a method that is primarily based on implicit criteria the judges were not asked to score explicit criteria, but to weigh up the different aspects of psychosocial care (according to a written definition and operationalization) into one final judgment, thereby following Donabedian's advice "for the asessment of those cases that do not

Table 6 Correlation matrix of patients' satisfaction, physicians' quality rating and observed doctor–patient communication

| | Factorscore on the patient satisfaction scale | Quality rating independent judges |
|---|---|---|
| Quality rating of independent judges (GP's) | 0 19† | |
| Assessment of doctor–patient communication | | |
| *Affective behaviour* | | |
| Interest | 0 25† | 0 60** |
| Nonverbal attention | 0 06 | 0 66** |
| Encouraging | 0 03 | 0 42** |
| Verbal empathy | 0 24† | 0 39† |
| *Purposive structuring* | | |
| Clarifying | 0 00 | 0 03 |
| Structuring | −0 02 | 0 04 |
| Probing | 0 23† | 0 16* |
| *Patient-centered behaviour* | | |
| Diagnostic phase | 0 12 | 0 39** |
| Therapeutic phase | 0 04 | 0 30** |

†$P < 0.05$, *$P < 0.01$, **$P < 0.001$

conform to the more strictly medical criteria" [18] In the discussion about the relative merits of assessment procedures using implicit criteria versus those using explicit criteria, the supposed low reliability of the former is considered to be a major reason for refraining from quality assessment based on implicit criteria This is a serious problem for researchers in primary health care (as well as those engaged in medical education in this field), as explicit criteria are seldom completely satisfactory for the assessment of consultations that do not conform to the more strictly medical criteria—which is very common in primary health care In this light the relatively high reliability figures in our study come as a welcome surprise However, the high reliability of the used procedure in our study is probably caused by the size of our panel ($n = 12$), which proved to be large enough to cancel out random fluctuations Caution is still needed when using smaller sized panels and with this study we certainly do not want to open the door for 'single-handed' implicit quality assessments, as often is done in medical-education literature, where one- or two-people panels are no exception

The reliability tests showed another interesting result the intercase reliability proved to be high, which means that a high score on one consultation of a GP goes along with a high score on other consultations of this same GP As we have spread the consultations of the GP's over the videotapes to minimize the so-called 'Halo-effect' on the judges, we can assume that 'quality of psychosocial care' is a doctor's characteristic as well as a consultation's characteristic This means that observing about five consultations of a certain GP handling patients with the same health problem (in this case hypertension) can give a fairly good impression about his general performance with these patients

Having found a satisfactory answer to the reliability-question, we now want to turn to the always much more complicated question of the validity of our measures The limitations of this study just make it possible to draw conclusions about concurrent validity, no predictive validity can be assessed as we have no actual measure of the quality of care, such as outcome of treatment or health and functional status of the patient Nevertheless, within these limitations some interesting results can be reported We found a remarkable powerful relationship (95% correct predictions in a discriminant analysis) between the panel's psychosocial quality assessment on the one hand, and a set of much used communication variables on the other Therewith the study certainly establishes what it is that experienced general practitioners view as quality visits Appreciating the consistency with which these criteria are applied (as reflected by the correlations among judges) it can be argued that the quality ratings are a reflection of common conceptions and norms of practice among physicians, and thus build a good case for the (face) validity of the communication skills under study, particularly 'affective behaviour' and 'patient-centered behaviour' As a result, this study provides us with indications as to what types of behaviour are useful for training purposes in medical and postgraduate education Gask *et al* [47, 48], Hornsby *et al* [61] and Bensing *et al* [10] demonstrated the possibility to train such behaviour and to evaluate the effects of such a training program

The results of this study particularly enforce the relevance of 'affective behaviour' for an adequate medical interview, as many authors have stressed before [7, 20–30, 46–50, 61], but contradict the research results of other authors [62–65] who doubt this major influence For that matter, the results can also shed some light upon a possible explanation for these contradictory findings in literature, for we found that especially the *nonverbal* aspects of affective behaviour (eye-contact and shown interest) had a strong predic-

Table 7 Stepwise discriminant analysis with patients' satisfaction as dependent and 9 communication variables as independent variables

| Step | Entered | Wilk's lambda | Significance |
|---|---|---|---|
| 1 | Nonverbal attention | 0 87 | 0 028 |
| 2 | Verbal empathy | 0 78 | 0 014 |
| 3 | Encouraging | 0 64 | 0 002 |
| 4 | Probing | 0 54 | 0 000 |

77% correct classifications
1 canonical discriminant function with an EIGEN value of 0 850

tive power on the quality rating of psychosocial care. The researchers that press the importance of more instrumental types of behaviour (e g. 'task-oriented' behaviour) over 'socioemotional' behaviour—the later being more or less comparable with our concept of 'affective behaviour'), like Roter *et al* [64] and Wolraich *et al* [63] use audiotapes as observation instruments and only code verbal behaviour In these studies the nonverbal aspects of affective behaviour are necessarily neglected It seems wise to maintain a distinction between the verbal and the nonverbal aspects of affective behaviour and, as Inui and Carter have stated [5] "to complement systems that categorize and analyze a single type of interaction (e g verbal statements only) by other analytic approaches, to capture and characterize other means of communication (e g gesture and nonverbal communication)" The present controversies in literature on this point could possibly be resolved, if the much used observation protocols of Bales, Roter or Stiles, that completely rely on verbal behaviour, would be enlarged with nonverbal measures This links up with a pivotal statement made by Davis [66], in which she states that most doctors know how to talk in a warm and friendly way, without being really patient-centered or really interested in the patients' problems or wishes. She stresses that it is much easier to control your verbal behaviour than your nonverbal behaviour More research is necessary, but this study again stresses the relevance of nonverbal behaviour, also in determining patient satisfaction!

Another point worth discussion, however, is the much weaker relationship between the quality ratings and the communication variables on one hand, and the patient satisfaction scores, on the other We did find a significant ($P < 0\,05$) correlation between patient satisfaction and panel-assessed psychosocial quality, but one of a modest magnitude (0 19) This means that only 3 6% of the variance in the quality assessments can be explained by patients' satisfaction Of the nine observed communication variables the GP's 'shown interest', his verbal empathy and purposive probing have a significant (but equally modest) correlation with patient satisfaction We did not expect this modest relationship, because the way the satisfaction questions were formulated (see Appendix) is close to the operationalisation of many of our communication variables But the results are in line with Lebow's cautions in the use of patients' assessments [8] and the comparable results in some other studies DiMatteo found low correlations (average $r = 0\,10$) between physicians and patients as rating source [9], Comstock found that physician empathy correlated with patient satisfaction only weakly, while physical attention (e g eye contact) did not correlate with satisfaction at all [58], Wolraigh found the interesting result that physician's relational behaviour correlated with physician's estimate of patient satisfaction, but not with patient satisfaction as verbalized by the patient himself [63], a result that was also found by Merkel [67] Stewart found non-significant correlations between patient satisfaction and several modes of patient-centered behaviour [68] Significant meaningful correlations are sometimes found in studies which use analogues instead of real patients [64], while the doctor–patient communication is not measured independently from patients' satisfaction [69].

One possible explanation for this modest relationships could be, that patients are, on the whole, very satisfied with their general practitioner The range of the scores is very short In the case of some questions on the Patient Satisfaction Scale in our study the lowest score (on a 5-point scale) is the neutral one Transformed to a 100-point-scale, as carried out by Ware and Hays in a comparative study on different satisfaction measures [70], the mean responses on the 6 items vary between 0 66 and 0 95 However, this problem is well known in patient satisfaction research A close inspection of the data of other research projects reveals that the data distribution of patient satisfaction scores is always very positively skewed Mean satisfaction figures on that same 100-point scale are seldom lower than 0 80 and often above 0 90, especially the figures about satisfaction on 'humaneness' or 'affective behaviour' [56–58, 70–73] This could mean that the small differences that exist, probably say more about different answering tendencies than about differences in satisfaction There is one additional finding that underlines this supposition even doctors that only got positive quality ratings had patients with different satisfaction scores, and (perhaps even more important) doctors that only had negative quality scores had patients that were very satisfied Another (methodological) explanation could be that the patient satisfaction scale while specific to communication by the doctor is non-specific as to the particular communication of the consultation, whereas the GP and psychologists' ratings are of the particular consultation and the communication skills displayed therein Some ground for this argument can be found in Verhaaks's research (using the same patient satisfaction scale), who found a relationship between patient satisfaction, patients' willingness to discuss psychosocial problems with their GP and the GP's sensitivity to psychosocial problems on the doctor's level, but not on the consultation level [34] In our study the average number of consultations per GP is too small to test this hypothesis However, as shown above, the same lack of relationship is found in studies in which specific satisfaction scales are used, so that this methodological question can hardly be a sufficient explanation for the modest relationship between patient satisfaction on the one hand and panel-assessed quality of care, respectively observed communication skills on the other Nevertheless, further research into the most adequate level of analysis is recommended

## REFERENCES

1 Balint M *The Doctor, His Patient and the Illness* Pitman Medical, London, 1957
2 Barro A R Survey and evaluation of approaches to physician performance measurement *J Med Assoc* **48,** 1051, 1973
3 Inui T S , Carter W B , Kukull W A and Haigh V H Outcome-based doctor–patient interaction analysis I Comparison of techniques *Med Care* **20,** 535, 1982
4 Carter W B , Inui T S , Kukull W A and Haigh V H Outcome-based doctor–patient interaction analysis II Identifying effective provider and patient behavior *Med Care* **20,** 55, 1982

5 Inui T S and Carter W B Problems and prospects for health services research on provider–patient communication *Med Care* **23,** 21, 1985
6 Roter D. L, Hall J A and Katz N R Patient–physician communication a descriptive summary of the literature *Patient Educat Counseling* **12,** 99, 1988
7 Hall J A, Roter D L and Katz N R Meta-analysis of correlates of provider behavior in medical encounters *Med Care* **26,** 657, 1988
8 Lebow J L Consumer assessments of the quality of medical care *Med Care* **12,** 328, 1974
9 DiMatteo M R and Dinicola D D Sources of Assessment of physician performance, a study of comparative reliability and patterns of intercorrelation *Med Care* **19,** 829, 1981
10 Bensing J M and Sluys E M Evaluation of an interview training course for general practitioners *Soc Sci Med* **20,** 737, 1985
11 Bensing J M and Verhaak P Ruimte voor de patient ("Room for the patient") *Nederlands Tijdschrift voor de Psychologie en haar grensgebieden* **37,** 19, 1982 (available in English)
12 Verhaak P F M Variations in the diagnosis of psychosocial disorders a general practice observation study *Soc Sci Med* **23,** 595, 1986
13 Verhaak P F M Detection of psychological complaints by general practitioners *Med Care* **26,** 1009, 1988
14 White K L *The Task of Medicine, Dialogue at Wickenburg* The Henry J Kaiser Family Foundation, California, 1988.
15 Ben-Sira Z Chronic illness, stress and coping *Soc Sci Med* **18,** 725, 1984
16 Maes S, Spielberger C D, Defares P B and Sarason I G *Topics in Health Psychology* Wiley, Chicester, 1988
17 Ben-Sira Z The stress-resolving component in primary medical care *Stress Med* **2,** 339, 1986
18 Donabedian A *Explorations in Quality Assessment and Monitoring Vol II, The Criteria and Standards of Quality* Health Administration Press, Ann Arbor, Michigan, 1982
19 Fine V K and Therrien M E Empathy in the doctor–patient relationship skill training for medical students *J Med Educat* **52,** 752, 1977
20 Dimatteo M R A social-psychological analysis of physician–patient rapport toward a science of the art of medicine *J Soc Issues* **35,** 12, 1979
21 Dimatteo M R, Taranta A, Friedman H S and Prince L M Predicting patient satisfaction from physician's nonverbal communication skills *Med Care* **18,** 376, 1980
22 Ben-Sira Z The function of the professional's affective behavior in client satisfaction a revised approach to social interaction theory *J Hlth soc Behav* **17,** 3, 1976
23 Ben-Sira Z Affective and instrumental components in the physician–patient relationship an additional dimension of interaction theory *J Hlth soc Behav* **21,** 170, 1980
24 Ben-Sira Z Lay evaluation of medical treatment and competence-development of a model of the function of the physician's affective behavior *Soc Sci Med* **16,** 1013, 1982
25 Ben-Sira Z Stress potential and esothericity of health problems the significance of the physician's affective behavior *Med Care* **20,** 414, 1982
26 Korsch B M and Negrete F Doctor–patient communication *Sci Am* **66,** 227, 1972
27 Vuori H, Aaku T, Aine E, Erkko R and Johansson R. Doctor–patient relationship in the light of patients' experiences *Soc Sci Med* **6,** 723, 1972
28 Van Dorp C Luisteren naar patienten de Tijdstroom, Lochem 1977
29 Friedman H S Nonverbal communication between patients and medical practitioners *J soc Issues* **35,** 82, 1979
30 Klein Buller M and Buller D B Physicians' communication style and patient satisfaction *J Hlth soc Behav* **28,** 375, 1987
31 Royal College of General Practitioners What sort of doctor? Report from General Practice, No 23, Royal College of General Practitioners, London, 1985
32 Bensing J M Watching doctors using videotapes for research purposes *Conf Proc. 10th WONCA World Conference on Family Medicine*, WONCA, Singapore, 1983
33 Grol R Preventieve attitude van huisartsen, University Institute of General Practitioners, Nijmegen, Netherlands, 1981
34 Verhaak P F M Interpretatie en behandeling van psychosociale klachten in de huisartspraktijk een onderzoek naar verschillen tussen huisartsen Netherlands Institute for Primary Health Care, Utrecht, 1986
35 Link B, Levav J and Cohen A The primary medical care practitioner's attitudes toward psychiatry *Soc Sci Med* **16,** 1413, 1982
36 Wolffers I Hart en bloeddruk, een onderzoek in opdracht van de Consumentenbond (the Netherlands Consumer Association) Contact, Amsterdam, 1988
37 National Institute of Health, *The Public and High Blood Pressure*, DHEW Publication No 75 NIH, Bethesda, Maryland, 1973
38 Jenkins C D Recent evidence supporting psychological and social risk factors for coronary disease *New Engl J Med* **294,** 987, 1976
39 Gallagher J E, Yarnell J W and Butland B Type A behaviour and prevalent heart disease in the Caerphilly Study increase in risk or symptom reporting? *J Epidem community Hlth* **42,** 226, 1988
40 Lindgarde F, Furu M and Ljung B-O A longitudinal study on the significance of environmental and individual factors associated with the development of essential hypertension *J Epidem community Hlth* **41,** 220, 1987
41 Bloom J R and Monterossa S Hypertension labeling and sense of well-being *Am J Publ Hlth* **71,** 1228, 1981
42 Royal College of General Practitioners, Prevention of Arterial Disease in General Practice, Report from General Practice, No 19 RCGP, London, 1981
43 Office of Population Censuses and Surveys, *Morbidity statistics from General Practice, Second National Study 1971–1972*, Studies on Medical and Population Subjects, No 26 HMSO, London, 1979
44 Rogers C R *Client-Centered Therapy* Houghton, Miffin, Boston, 1951
45 Davis M S Variations in patients' compliance with doctors' advice an empirical analysis of patterns of communication *Am J Publ Hlth* **58,** 274, 1968
46 Francis V, Korsch B M and Morris M J Gaps in doctor–patient communication *New Engl J Med* **280,** 535, 1969
47 Gask L, Goldberg D, Lesser A L and Millar T Improving the psychiatric skills of the general practice trainee an evaluation of a group training course *Med Educat* **4,** 22, 132, 1988
48 Gask L McGrath G, Goldberg D and Millar T Improving the psychiatric skills of established general practitioners evaluation of group teaching *Med Educat* **2,** 21, 362, 1987
49 Like R and Zyzanski S J Patient satisfaction with the clinical encounter social psychological determinants *Soc Sci Med* **24,** 351, 1987
50 Sluys E M and van der Leden J Methodisch werken de ontwikkelingen sinds 1976 *Huisarts en Wetenschap* **31,** Suppl 3–7, 1988

51 Byrne P S and Long, B E L *Doctors Talking to Patients*. Her Majesty's Stationary Office, London, 1976
52 Barsky A J, Kazis L E and Freiden R B Evaluating the interview in primary care medicine *Soc Sci Med* **14a**, 653, 1980
53 Speedling E J and Rose D N Building an effective doctor–patient relationship from patient satisfaction to patient participation *Soc Sci Med* **24**, 351, 1985
54 Cassee E *Naar de Dokter* ("going to see the doctor") Boom, Meppel, 1973
55 Zastowny T R, Roghman K J and Hengst A Satisfaction with medical care replications and theoretic reevaluation *Med Care* **21**, 294, 1983
56 Putnam S M, Stiles W B, Jacob M C and James S A Patient exposition and physician explanation in initial medical interviews and outcomes of clinic visits *Med Care* **23**, 74, 1985
57 Zyzanski S J, Hulka B S and Casel J C Scale for the measurement of "satisfaction" with medical care modifications in content, format and scoring *Med Care* **12**, 611, 1974
58 Comstock L M, Hooper E M, Goodwin J M and Goodwin J S Physician behaviors that correlate with patient satisfaction *J Med Educat* **57**, 105, 1982
59 Ware J E and Snyder M K Dimensions of patient attitudes regarding doctors and medical care services *Med Care* **13**, 669, 1975
60 Roberts J G and Tugwell P Comparison of questionnaires determining patient satisfaction with medical care *Hlth Services Res* **22**, 637, 1987
61 Hornsby J L and Payne E A model for communication skills development for family practice residents *J family Practice* **8**, 71, 1979
62 Fitzpatrick R and Hopkins A Problems in the conceptual framework of patient satisfaction research an empirical exploration *Sociol Hlth Illness* **5**, 297, 1983
63 Wolraigh M L, Albanese M, Stone G, Nesbitt D, Thomson E, Shymansky J, Bartley J and Hanson J Medical communication behavior system An interactional analysis system for medical interactions *Med Care* **24**, 891, 1986
64 Roter D L, Hall J A and Katz N R Relations between physicians' behaviors and analogue patients' satisfaction, recall and impressions *Med Care* **25**, 437, 1987
65 Roter D Patient question asking in physician–patient interaction *Hlth Psychol* **3**, 392, 1985
66 Davis K *Power under the Microscope* Foris Publications, Dordrecht, 1988
67 Merkel W T Physician perception of patient satisfaction—do doctors know which patients are satisfied? *Med Care* **22**, 453,1984
68 Stewart M A What is a succesful doctor–patient interview? A study of interactions and outcomes *Soc Sci Med* **19**, 167, 1984
69 Willson P and McNamara J R How perceptions of a simulated physician–patient interaction influence intended satisfaction and compliance *Soc Sci Med* **16**, 1699, 1982
70 Ware J E and Hays R D Methods for measuring patient satisfaction with specific medical encounters *Med Care* **26**, 393, 1988
71 Stiles W B, Putnam S. M, Wolf M H and James S A Interaction exchange structure and patient satisfaction with medical interviews *Med Care* **17**, 667, 1979
72 Weinberger M, Greene J Y and Mamlin J J The impact of clinical encounter events on patient and physician satisfaction *Soc Sci Med* **15e**, 239, 1981
73 Woolley F R, Kane R L, Hughes C C and Wright D D The effects of doctor–patient communication on satisfaction and outcome of care *Soc Sci Med* **12**, 123, 1978
74 Locker D and Dunt D Theoretical and methodological issues in sociological studies of consumer satisfaction with medical care *Soc Sci Med* **12**, 283, 1978

## APPENDIX

*Items of the Patient Satisfaction Scale (5-Point Scale)*

1 My doctor knows exactly what is wrong
2 My doctor keeps his patients at a distance(—)
3 My doctor is interested in me as a person
4 My doctor is good at handling problems
5 My doctor talks about non-medical problems as well
6 My doctor allows enough time for me