

VARIATIONS IN THE DIAGNOSIS OF PSYCHOSOCIAL DISORDERS: A GENERAL PRACTICE OBSERVATION STUDY

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Abstract—The factors that influence the interpretation and treatment of psychosocial complaints by general practitioners are discussed. The assessment of complaints differs considerably from one GP to another, in the sense that one will attach significance to psychological and sociological factors in many more cases than another. We investigate the effect of physician characteristics and their styles of communication on their bias over psychosocial assessments and treatment, and the way these effects are interrelated. The interpretation and eventually the treatment of complaints by 30 GPs (complaints presented at approx. 50 consultations per GP) were studied. Data of treatment and communication were collected from observation of the videotaped consultations, data of interpretation were collected on questionnaires for each consultation; doctor characteristics were inventorized by questionnaire.

The following results can be reported. When a doctor communicates with a patient in an open manner, more complaints are interpreted as 'non-somatic' and treated as such. The same is the case among doctor's with a 'general medical' approach, rather than a 'clinical' one, when we look at interpretation. The effect on treatment is less marked. Practice characteristics and a GP's subjective feeling of competence have greater consequences for treatment than for judgement. There is not much interaction between the discerned effects.

Key words—doctor-patient communication, general practice, psychosocial complaints

INTRODUCTION

A large proportion of the complaints that are presented to GPs are given the label 'mental,' 'psychiatric,' 'nervous,' or some such similar term by them.* This occurs when the GP fails to find physical causes and/or imputes the complaints to mental causes. Furthermore, many physical complaints involve a certain degree of stress and thus in turn lead to mental complaints. The proportion of complaints that is not taken to be purely physical varies widely among GPs [1-5].

Further analysis of the differences found has shown they cannot be entirely accounted for by chance errors, measuring errors, differences in measuring instruments and/or operationalization or in morbidity [5]. The phenomenon has been extensively investigated by Goldberg and Huxley [6]. They report the following findings: not all of the people within the community with psychosocial complaints actually consult a physician and those attending primary care physicians are not all identified as 'psychosocial' cases. Whether a doctor makes a psychosocial diagnosis depends on a number of factors. It is necessary to dwell on the subject of case identification, before we discuss these factors further. Goldberg and Huxley distinguish three aspects of the doctor's diagnostic capacity. First there is the bias of a doctor towards psychiatric assessments. Some doctors tend to give a higher estimate of the proportion of non-

somatic complaints than others. This bias differs from one physician to another and causes considerable variation between individual GPs in their reporting rates for psychiatric illness. Goldberg and Huxley point out that there is no relationship between the level of psychiatric illness, reported by the GPs and the level of psychiatric illness, assessed by a screening questionnaire. Secondly, Goldberg and Huxley talk about the accuracy of the GPs judgement. This deals with the correlation between the diagnosis by the physician (e.g. psychiatric vs non-psychiatric) and the assessment provided by the screening questionnaire. Thirdly, they distinguish an identification index: the ratio of assessed cases (by the physician) to expected true positives (as measured by the screening questionnaire). As we are interested in differences among general practitioners (and furthermore, since we have not been able to measure 'true positives' in our own research), we shall only deal with the first aspect: that of the bias of a GP towards psychiatric assessment.

From our point of view, it does not matter much to what extent this bias is related to the level of 'true psychiatric illness': what we are interested in is the frame of reference within which the doctor treats his patient. Doctors with a psychiatric bias may treat their patients differently from doctors with a somatic bias. This will influence the 'career' of the patient within the health care system: there is quite a difference between talking to social workers and being examined by medical specialists. This distinction is important in The Netherlands, because in the Dutch health care system the general practitioner functions as a 'gate-keeper.' A patient has to see his GP in order to obtain a referral to specialist care.

*There is a great deal of confusion about this terminology. For convenience sake we use these terms as equivalents, to cover all complaints that are not purely somatic.

However, as social work is part of the primary health care system, it is in principal freely accessible, but in practice most psychological problems arrive at social work by means of referral from the general practitioner (for a more elaborate description of the Dutch health care system consult Tiddens *et al.* [7]).

As the GP has a pivotal position in the system, the factors which influence the way in which he refines the vast amount of vague symptoms into workable diagnoses is a highly relevant issue in our context. Let us take a look at the factors, presented by Goldberg and Huxley. Broadly speaking they may be divided into two groups: the characteristics of the doctor and the characteristics of the doctor's interview style. GPs who have a bias towards psychiatry are positively inclined to psychiatric diagnoses, as are older physicians with more experience. High status doctors, with a large proportion of privately insured patients, are negatively biased. Perhaps this negative bias is related to the high socio-economic class of the practice, where the socio-economic class of the patient is negatively correlated with psychiatric diagnosis, as Hollingshead and Redlich [8] pointed out. GPs who show interest and concern in their interviews, and who are sensitive to verbal cues, are also positively biased towards psychiatric diagnosis. It would seem not unreasonable to assume that particular beliefs about psychiatry and a certain type of communication style contribute to the perception of complaints as being 'not purely somatic.' However, these factors can be seen as part of a more comprehensive whole. We think that a bias towards psychiatry is a feature of a typology which allows us to distinguish between two types of GPs. The one type is interventionist-oriented, addresses the complaint as a biological given, takes few risks, is science-oriented and concentrates on cure. We shall call this the 'clinical' type. The other type is maintenance-oriented, addresses the patient as an individual, takes risks (e.g. does not immediately refer to the specialist), does not exclusively lean towards the natural sciences, but also makes use of the social sciences and concentrates on care. We shall call this the 'general-medicine oriented GP.' Doctors who are 'focused on psychiatry' tend to be general-medicine oriented [9-13].

Goldberg and Huxley lay great emphasis on the GP's personality characteristics. Much less attention is paid to the actual opportunity for the GP to detect and treat psychiatric illness properly. (With the exception of the experience already mentioned.) GPs who cooperate closely with colleagues and other workers in health and welfare (and who consent to external monitoring) have a proper appreciation of the doctor-patient relationship and of social factors as determinants of disease. This appears from such things as the intercorrelation between the subscales of the test battery on 'Attitudes to Social Issues in Medicine' [ATSIM, 14]. This awareness of the benefits of cooperation is reflected in the organization of the practice, one-man practice, group practice with one discipline, multidisciplinary group practice, and in the frequency with which consultations with other professional workers occur. There are specific factors relating to the GP and his practice which would allow for an increased likelihood of the GPs diagnosing the complaint as psychosocial and in consequence treat-

ing it as such. The GP can for example enhance his skills in this field by following post-graduate courses. Such training courses have resulted in a different attitude towards non-somatic complaints [15,16]. On the other hand, more time is required if a complaint is to be interpreted and treated in a non-somatic perspective. The more time a GP devotes to a patient, the more he will be likely to pursue this treatment. The fewer patients there are in the practice, the more time the doctor will have for them.

In the same way, the aspects of communication which are put forward by Goldberg and Huxley, may be augmented by others. Their concepts of 'interest' and 'concern' can be further elaborated. Numerous writers have pointed out the importance of certain interview techniques in demonstrating the non-somatic aspects of complaints, the importance, for example, of affect, sympathy, interest has been stressed by many authors [17-20].

In this context the positive effects of such an attitude on patient satisfaction and on the patient's compliance with instruction have been pointed out [21-23].

A GP's sensitivity to verbal clues relates to the opportunity that he provides for the expression of these clues; on the one hand the process must be an open one: leading questions produce no more information from the patient than is being fed to him. A certain measure of prescriptiveness is, however, required; Stimson and Webb [24] are right in pointing to the fact that the GP has to clarify and localize a problem within 10 min, if surgery hours are to remain manageable. Purposive probing therefore implies: attempting to locate the problem quickly and then giving the patient the freedom to come forward with his knowledge and experience. This approach has in practice proved to lead to the detection of an increased number of mental problems [25]. Another characteristic of the interview style which in theory at least should lead to an increase in the number of psychosocial complaints is the structured approach: the patient is first asked what exactly he wants from the doctor (i.e. uncover the question behind the question), then questions are dealt with one by one, and the consultation is organized in a straightforward pattern, all of these features are required for coherence and tend to reduce the risk that particular things are left unsaid. However, there is not yet empirical evidence to support the assumption that a well-organized approach is more productive in the presentation of mental complaints. Interviews dealing with mental complaints were found however to be conducted in a more structured way than interviews about somatic complaints [26]. One last factor, introduced by the work of Byrne and Long [27] is the degree to which a 'shift of power' occurs from GP to patient. Patients are often as able (or indeed more able) than the GP to assess the relative importance of non-organic factors, in particular. Byrne and Long measured the participation which the GP allows the patient in the decision on diagnosis and the choice of therapy; although their operationalization is open to objection [28] the important issue is whether the patient is given room to make his contribution in respect of the position taken earlier by Szasz and Hollender [29], i.e. that mental problems are more

appropriately dealt with in the 'mutual approach model' than in the 'active doctor-passive patient model.'

Emphasis on the characteristics of the doctor (personality, facilities) in combination with aspects of the consultation situation would seem to be a productive approach. However, thus far, the various explanations have been dealt with separately from one another, in most cases, instead of in interaction with one another. We don't know whether a doctor, regardless of his personal beliefs, would 'see' more psychiatric morbidity if he used the method of communication indicated with his patients, neither do we know if a doctor with a favourable attitude to psychiatric illness and an open style of communication would tend to be more psychiatrically oriented in his judgement if he lacked time or knowledge. The final question in this article is to ask how beliefs, facilities and communication during consultation interact in their contribution to the variance in the doctor's assessment and treatment of the complaints which are referred to as psychiatric. Before we can discuss this interaction, we shall have to look at the simple relationships between a GP's style of communication, beliefs and facilities on the one hand and the bias towards psychosocial treatment and the actual treatment of such complaints on the other hand. This leads to the questions our investigation seeks to answer:

1. What are the effects of the characteristics of doctors which we have mentioned and the interviews on the GP's bias towards psychosocial assessments and treatment?
2. In what way are these effects interrelated?

METHOD

The material used to provide an answer to these questions has been collected from 30 GPs. It consists of approx. 50 videotaped interviews by each GP, questionnaires completed by GP and patient about one another, and questionnaires completed by the doctors afterwards, these were also completed by another group of GPs. We inferred the GP's judgement on the role which psychosocial factors played from the questionnaire filled in after each interview. We were also able to draw inferences on the treatment of complaints judged to be psychiatric in nature and on the interview style of the GP from the videotaped interviews. The questionnaires which were completed afterwards provided us with information about the characteristics of the GP and his practice as mentioned above.

The GPs who took part in the video recording were approached by intermediaries who were in contact with our research institute. In some cases the GPs participated as a group; there were individual decisions to participate as well. GPs were not selected because of their interest in psychiatric illness, or for some such similar reason, however the group as a whole was not as representative of the total population of Dutch GPs as we would have liked. As the questionnaires which they completed afterwards were also filled in by a national sample of GPs, a comparison with a national sample was possible. A

comparison will be made of the scores of the video-group and the national sample with the presentation of the frequency distributions. We shall see that the video-group is slightly more general-medicine oriented, has larger proportion of GPs working in health centres, and has a whole attended more postgraduate training courses than the national sample. However, the distribution over the two groups is in all cases the same.

In principle, videotapes were made of all consultations until 60 recordings had been made. About 15% of the patients refused to participate when asked by the experimenter. There was no difference in mean age between participants and non-participants. Women refused to participate slightly more often than men (62% of the participants and 66% of the non-participants were women). Patients who would not allow a recording to be made reported psychiatric social complaints relatively more frequently. This means that the variability in our material decreases in this respect. Since we are interested in the first place in the variation between doctors, and not in a generalizable survey of psychiatric complaints in general practice, we do not consider this loss of patients as being very dramatic.

OPERATIONALIZATION AND FREQUENCY DISTRIBUTION

Dependent variables

One thing to be explained in this study is the extent to which GPs examine complaints with a mental/emotional frame of reference. This has been established by having the doctor classify each complaint presented in each interview in one of the following categories:

- this complaint is strictly somatic;
- this complaint is mainly somatic, but mental aspects came into play;
- this complaint is presented in somatic terms, but I suspect mental factors underly it;
- this complaint is primarily mental, emotional or social.

For each GP, we obtained a distribution of approx. 90 judgements (on average each interview contained 1.8 complaints), from which we deduced there was a general tendency to call complaints either purely somatic or purely mental (or one of the other categories). One aspect of GP behaviour that was measured by observation of the interviews was their management of those complaints, which were not strictly somatic. In the first place, the observer determined whether the GP paid attention to non-somatic aspects at all. If he did, the following courses of action were distinguished:

- prescribing psychopharmacological drugs;
- counseling;
- advice;
- referral;
- returning the problem to the patient ("I cannot do anything for you, you have got to solve this problem yourself").

The distribution of the frequency of judgement and treatment scores are shown in Table 1.

Table 1. Dependent variables, interpretation of complaints and treatment of complaints judged as 'not strictly somatic' (30 GPs)

Variable	Maximum (%)	Minimum (%)	\bar{x} (%)	SD	F-ratio
<i>Interpretation</i>					
This complaint is strictly somatic	83	24	53	14.0	5.06*
This complaint is mainly somatic, but mental aspects come into play	58	0	18	11.8	6.84*
This complaint is presented in somatic terms, but I suppose that mental aspects are behind it	38	3	16	7.9	3.15*
This complaint is purely mental/emotional or social	31	0	13	7.7	3.29*
<i>Treatment</i>					
GP takes up non-somatic aspects	89	34	66	13	3.55*
If GP takes up: counseling	95	46	78	11	4.25*
Psychopharmacological drugs prescribing	30	0	13	7	1.59†
Advice	38	0	13	9	1.76†

* $P < 0.001$; † $0.001 < P < 0.05$.

When we look at range and standard deviations, it is obvious that the 30 GPs differed from one another. These differences are also apparent from analysis of variance between doctors at consultation level. Each relation that is shown in Table 1 differs significantly more between doctors than within the consultations of one doctor. Actually the earlier reported results of Marks, Goldberg and Hillier, on the difference in bias and of Shepherd, on the difference in treatment of psychosocial complaints, are confirmed by these results.

Independent variables: communication style

We specified the following features of communication style which should reveal a positive bias in respect of the psychosocial judgement and treatment of complaints. They are interpreted in the following terms: 'interest and concern,' 'purposive probing,' 'structure of the consultation' and 'patient participation.'

We used three measures for affective attitude (a rating of non-verbal attention, number of empathic manifestations and number of a-specific utterances, hm, hm, ah, etc.). Structuring was measured by counting the number of complaints where the doctor clarified the question and by ascertaining, for each consultation, whether the GP rounded off the questions consecutively. Patient participation in deciding on the diagnosis and therapy was rated on two 5-point scales. Probing was operationalized by tallying the number of times the GP brought up a new subject in the discussion.

All these measures were assessed by observation, i.e. different types of utterances (emphatic utterances, open ended questions, closed questions, introducing new subjects, a-specific utterances) were counted;

attention and patient participation were measured on rating scales; duration of consultation and parts of it were measured by means of a stopwatch.

The observation was carried out by five observers. After a training course together, each of them observed a number of the consultations that had taken place. Every month 1 or 2 days were spent on joint observation. We based measurements of interobserver reliability on these observations. These varied from: 0.43 to 0.89 for the variables that could be counted; 'probing' and 'empathic utterances' were not reliably measured (interobserver reliability 0.43 and 0.53 respectively). Variables that were judged on rating scales all had reliability scores of about 0.45. We also collected test-retest scores, by observing about 30 consultations again, one and a half years afterwards. These interobserver reliabilities were higher than those mentioned before. Nevertheless, we may conclude that we were confronted with a considerable observer effect. We have tried to neutralize this effect, by assigning observers to GP consultations on an equal basis. Our success in this appears from the fact that monitored observer effect did not change the mean score of any of the measured variables. Average scores, standard deviations and the range of these measures are shown in Table 2.

In all respect, save one, the 30 GPs differed from one another, as we noticed before. Another finding is that the differences repeatedly exhibited the same pattern. At GP level the variables therefore showed high intercorrelation, and factor analysis initially yielded one factor on which all variables (except the non-discriminating 'dealing with more than one complaint consecutively,' which will be left out of consideration below) loaded more than 0.60. For the rest of this article we shall use the standardized factor score

Table 2. Means, standard deviations and range of communication scores of 30 GPs

Variable	Maximum	Minimum	\bar{x}	SD
<i>Affective attitude</i>				
Non-verbal attention (five-point scale)	4.0	2.2	3.4	0.4
Aspecific utterances (number)	32.8	4.4	12.6	6.1
Empathic manifestations (number)	3.5	0.2	1.4	0.8
<i>Structuring the consultation</i>				
Percentage of complaints where GP 'clarified the question'	48	3	20	12
Percentage of consultations where GP rounds off questions consecutively	83	36	60	11
<i>Patient participation</i>				
In deciding on diagnosis (five-point scale)	3.7	1.8	2.9	0.4
In deciding on therapy (five-point scale)	3.7	1.8	2.8	0.4
<i>Probing</i>				
New subject in discussion (number of times)	1.3	0.2	0.7	0.3

derived from this analysis. The question arises as to how far the fact that patients and complaints were involved by chance has affected the results. In order to gain an insight into this matter, we aggregated the given variables for six homogeneous subgroups of patients: men under 40 and over 40, women under 40 and over 40, consultations on problems rated as exclusively somatic and consultations also containing problems that were interpreted as psychosocial. An identical one-factor structure emerged in all these subgroups. The six resulting factor scores showed a correlation of 0.84 (young men) to 0.94 (somatic consultations) with the general factor. In other words, each homogeneously constituted subgroup showed the same distribution of the communication factor over the 30 GPs.

Independent variables: characteristics of the doctor and the practice

In our introduction we distinguished the following doctor characteristics as important in the sense that we expected a relationship between them and the assessment and treatment of psychosocial complaints: a 'general medicine' orientation (as opposed to a 'clinical' orientation), and a feeling of competence with regard to the treatment of psychosocial complaints are important personality characteristics. A feeling of competence can be seen as a doctor's belief in his own ability. Other variables, which define these abilities are post-graduate training, practice size, type of practice, consultation time and cooperation with primary and mental health care. All these characteristics were assessed for the video-group and for the national sample as well, by means of a questionnaire.

General medicine orientation was measured by the means of three scales. One scale may be seen as the operationalization of Goldberg and Huxley's 'focus on psychiatry.' It measures whether GPs assign relatively high or low value to the mental aspects of complaints such as an ulcer, overweight or eczema. The scale consists of 12 five-point items; it has a reliability of 0.77 (Cronbach's alpha). A second aspect of 'general medicine orientation' is whether a GP always plays safe and thus prefers to treat a patient in a somatic way without reason, rather than incur-

ring the risk of mistakenly omitting to treat the patient. From the clinical point of view this is playing for safety, from a general medicine point of view this implies that many problems will, be dealt with in an all too restricted, purely somatic, way. This attitude with regard to taking risks is measured by a five-point scale consisting of six items with a reliability of 0.73. Another aspect concerns the degree to which the doctor sees the patient as an equal 'a partner in collaboration,' who must be kept as fully as possible informed, who has the power to decide, and with whom it is possible to deliberate. This is measured by nine five-point items (reliability: 0.68).

Competence was measured by presenting the respondent with a number of specific tasks (e.g. treatment of agoraphobia), and asking him whether he felt competent in performing those tasks. There were again five possible answers. Originally the scales consisted of 12 items, but the oblique distribution forced us to reduce the scales to seven items. The reliability score of the remaining scales was 0.73.

Post-graduate training was measured by counting the number of different sorts of post-graduate courses on psychosocial topics which were offered during the past five years.

Practice size and type of practice (one-man group, group practice, health centre) were filled in by the respondents.

The respondents indicated the frequency of regular consultation with other primary care and mental health disciplines by giving one of three possible answers: more than once a week, more than once a month, but less than once a week or less than once a month. As consultation with non-primary care mental health disciplines was less than a month in most cases, we only consider primary care consultations in our further analysis. For this purpose we used a sumscore for the disciplines of home nursing, social work and physiotherapy, which may vary from three (regular contacts less than once a month with all three disciplines) to nine (regular contacts once a week or more with all three disciplines).

In Table 3 the scores on all these 'doctor-variables' for the video-group and (in parentheses) for the national sample are shown. From these data we infer, as has been said before, that doctors in the video-

Table 3. GPs and practice characteristics (in parentheses means and standard deviations of the national sample)

Variable	\bar{x}	SD
<i>Views and norms</i>		
'General medicine-clinical': taking of risks (six items*)	19.8 (18.5)	3.4 (4.1)
'General medicine-clinical': taking in account what patient wants (nine items*)	28.8 (26.5)	5.8 (4.6)
'General medicine-clinical': influence attributed to psychosocial aspects (12 items*)	41.2 (37.9)	6.3 (5.9)
Competence (seven items*)	21.4 (21.1)	3.4 (3.7)
<i>GP characteristics</i>		
Number of postgraduate training courses	2.7 (1.5)	1.8 (1.5)
Years graduated	12 (14.9)	6.3 (9.2)
<i>Practice characteristics</i>		
Number of patients listed	2342 (2456)	592 (729)
Consultation time estimated by GP (in minutes)	10.0 (10.10)	2.1 (2.5)
Consultation time measured by observation (in minutes)	9.0 (—)	1.3 (—)
Amount of primary care consultation (three items†)	6.8 (6.2)	1.9 (1.6)
<i>Type of practice</i>		
Single handed 50%	(56%)	
Monodisciplinary group practice 17%	(34%)	
Multidisciplinary health centre 33%	(10%)	

*Five-point scale, summation. †Three-point scale, summation.

group were more general-medicine oriented, had had more post-graduate training and work more frequently in health centres. However, standard deviations are quite similar in both groups; we concluded therefore that although the GPs in our video-group are not representative of 'the' Dutch GP, the group does show all the varieties that might be expected, in all respects.

RESULTS

We can now turnover to the main question, in our investigation, as to how the differences in the judgement and treatment of psychosocial complaints that are found are related to the various explanatory variables and to the interrelation between communications and doctor characteristics (Table 4). Our first impression is the following; in respect of interview style we might say that a closed communication style is accompanied by a negative bias towards psychiatrically formulated diagnoses and by a low percentage of cases treated among these recognized. If treatment occurs, it will relatively often be in the form of advice, which is not considered to be the most appropriate treatment for psychosocial complaints. In order to preclude the possibility that the positive communication factor results from a relatively large number of mental complaints, we have, as we have said before, also computed the communication factor for the homogeneous group of 'consultations with purely somatic subject matter.' The results for the 'somatic communications factor' are in parentheses, and yield more or less identical results.

In respect of doctor's views and norms, we find that a general medicine orientation influences both his judgement and his treatment in a positive sense. When we look at those factors that facilitate psychosocial treatment (number of patients on the list, competence, etc.), we see that most of them have a positive effect on treatment, but not on judgement. There is one exception to this rule, post-graduate training has nothing to do with treatment, but it does have something to do with judgement. It seems to be more of an ideological than a practical characteristic.

Let us now turn to the main question of our research: to what extent do communication, GP's beliefs and facilities influence one another. At this point in our analysis we met with the problem that we had only 30 cases at GP level, which is insufficient for any multivariate analysis. At the level of the consultations, however, we had 1373 consultations, and we knew the communication characteristics and their effects on judgement. Our analysis was done at the aggregation level of the consultation; the design was as follows, at first we determined what the contribution of the communication variables was to the explained variance of the judgement score in the total sample by multiple regression analysis. We then repeated this analysis for distinct subsamples of consultations from doctors who scored high or low respectively in respect of several characteristics. By this means we were able to determine approximately if the mechanism of the communication effects operated irrespective of the GP's characteristics or vice versa, i.e. if communication characteristics only had an effect in the case of a particular type of doctor.

Table 4. Correlation between interpretation and treatment on one hand and communication, views, norms, GP characteristics and practice characteristics on the other hand

	Interpretation			Treatment				
	Strictly somatic	Percentage somatic with psychosocial aspects	Percentage somatic presentation psychosocial beliefs	Percentage psychosocial	Percentage reaction	Counseling	Psychopharmacological drug prescription	Advice
<i>General communication factor</i> (Communication factor based on somatic consultation)	-0.48* (-0.42)*	NS (0.30)*	NS (NS)	0.34* (0.9)	0.78* (0.65)*	0.69* (0.60)*	NS (-0.30)†	-0.59† (-0.53)†
<i>Views and norms</i>								
Taking of risks	-0.31*	NS	NS	0.31*	NS	NS	NS	NS
Taking in account what patient wants	-0.52*	0.32*	0.27†	NS	0.39*	0.32*	NS	-0.57*
Influence attributed to psychosocial aspects	-0.47*	NS	NS	0.58*	0.35*	0.33*	NS	-0.25†
Competence	NS	NS	NS	0.39*	0.37*	0.31*	NS	-0.36*
<i>GPs characteristics</i>								
Years graduated	NS	NS	NS	NS	-0.37*	-0.41*	NS	0.30†
Post-graduate training	-0.34*	0.50*	NS	NS	NS	NS	NS	NS
<i>Practice characteristics</i>								
Number of patients listed	NS	NS	NS	NS	NS	-0.39*	NS	0.24†
Consultation time (estimated)	NS	NS	NS	NS	NS	NS	NS	0.28†
Consultation time (observed)	NS	NS	NS	NS	0.40*	0.55*	NS	-0.53*
Primary care consultation	-0.25†	0.27†	NS	NS	0.42*	0.35*	-0.30†	-0.29†
Type of practice	NS	NS	NS	0.27†	NS	NS	NS	-0.26†

Only significant coefficients ($P < 0.10$ are shown). * $P < 0.05$; † $0.05 < P < 0.10$.

This was not required for all of the GP and practice characteristics mentioned, because of the inter-correlations between the following explanatory variables:

Several variables, giving the GP's facilities are closely related: type of practice, number of patients, cooperation with primary care workers. Doctors with many resources in these respects also accept more risks.

General medicine orientation: 'cooperation with the patient' and the view that mental factors have much influence show a great coherence.

'Post-graduate training received' forms a singular variable.

For this reason we analyzed consultations of doctors practising alone and those working in groups; of doctors who attribute relatively much and little influence to psychosocial aspects and of doctors who attended many and few training courses. Regression on 'judgement' [this was taken as a four-point scale from 1 ('strictly somatic') to 4 ('psychosocial')] in the total sample (Table 5) shows that the factors: 'a-specific utterances,' 'patients contribution to treatment' and 'clarifying the question' did not significantly contribute to the explanation of 24% of the variation in the GP's interpretation of complaints. For the two first mentioned factors this may be due to the correlation with 'consultation time' and 'patient's contribution to diagnosis' respectively.

Table 6 presents the mean values and standard deviations for the judgement and communication characteristics of each subgroup. For all three divisions (one-man practice versus group practice, much versus little influence on psychosocial aspects, many versus few post-graduate training courses) it is true that all of the variables investigated, both those we wished to explain and the explanatory communication variables, differed significantly between the two groups: doctors who attribute much influence to psychosocial aspects, doctors in health centres and group practices and doctors who attended many training courses tend to communicate more in terms of the conditions formulated by us and more often arrive at psychosocial judgement. The next question to be addressed is whether the relationship between communication and judgement differs (Table 5), as the doctor or the practice exhibit different characteristics. For this purpose the regression of communication characteristics on GP judgement was re-

Table 5. Multiple regression on 'judgement' in 1,373 consultations of 30 GPs (standardized regression coefficients and *F*-values)

Independent	Dependent variables	
	β	<i>F</i>
Non-verbal attention	-0.65	5.73*
A-specific utterances	0.05	1.84*
Empathy	0.07	6.49*
Clarifying	0.02	0.88
Patient participation in diagnosis	0.13	17.10*
Patient participation in treatment	0.05	2.52
Probing	0.11	17.30*
Consultation time	0.30	33.97*
<i>R</i>	0.49	
<i>R</i> ²	0.24	

**P* < 0.05.

Table 6. Mean values and standard deviations of communication characteristics in consultations, split with regard to GP characteristics

	Influence psychosocial aspects						Type of practice						Post-graduate training					
	High (N = 648)		Low (N = 725)		Single handed (N = 596)		Group/health centre (N = 777)		High (N = 544)		Low (N = 829)		High (N = 544)		Low (N = 829)			
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD		
Interpretation (four-point scale)	2.0*	1.0	1.7*	0.9	1.8*	1.0	1.9*	1.0	1.9*	1.0	1.8*	1.0	1.9*	1.0	1.8*	1.0		
Non-verbal attention	3.6*	1.0	3.2*	0.9	3.2*	0.9	3.6*	0.7	3.6*	0.8	3.2*	0.8	3.6*	0.8	3.2*	0.8		
A-specific utterances	14.7*	15.0	10.8*	11.1	10.0*	11.1	14.7*	15.0	14.3*	15.7	11.6*	11.9	14.3*	15.7	11.6*	11.9		
Empathy	1.5*	2.5	1.2*	2.1	1.0*	2.0	1.6*	2.4	1.7*	2.5	1.1*	2.1	1.7*	2.5	1.1*	2.1		
Clarifying	27%*	40	19%*	36	15%	33	28%*	41	29%*	42	18%*	35	29%*	42	18%*	35		
Patient participation in diagnosis	3.0*	1.1	2.7*	1.1	2.6*	1.1	3.1*	1.1	3.1*	1.1	2.7*	1.1	3.1*	1.1	2.7*	1.1		
Patient participation in treatment	2.9*	1.1	2.6*	1.1	2.5*	1.1	2.9*	1.1	2.9*	1.1	2.6*	1.1	2.9*	1.1	2.6*	1.1		
Probing	0.7*	1.1	0.6*	1.0*	0.5*	0.9*	0.8*	1.1	0.8*	1.1	0.6*	1.0	0.8*	1.1	0.6*	1.0		

*Significant differences.

Table 7. Multiple regression on judgement in consultations for subgroups

	Influence psychosocial aspects				Type of practice				Post-graduate training			
	High (N = 648)		Low (N = 725)		Single handed (N = 596)		Group/health centre (N = 777)		High (N = 544)		Low (N = 829)	
	B	F	B	F	B	F	B	F	B	F	B	F
Non-verbal attention	-0.10	6.8*	-0.06	2.8†	-0.05	1.43	-0.07	4.7	0	0	-0.11	10.8*
A-specific utterances	0.06	1.6	-0.01	0.1	0	0.76	0.08	2.8	0.09	2.4	0.01	0.2
Empathy	0.08	3.9*	0.06	2.3	0.13	8.4*	0.04	1.1	0.07	2.1	0.08	5.3*
Clarifying	0.08	5.2*	-0.03	0.7	0	0.37	0.03	0.85	0.03	0.07	0.01	0.2
Patient participation in diagnosis	0.10	5.0*	0.16	14.8*	0.13	8.7*	0.12	8.4*	0.11	4.5*	0.13	12.1*
Patient participation in treatment	0.08	3.3†	0	0.9	0.07	2.4	0.04	0.9	0.02	0.3	0.06	2.7†
Probing	0.07	3.3†	0.14	15.8*	0.12	9.8*	0.10	8.4*	0.05	1.7	0.15	20.8*
Consultation time	0.34	45.9*	0.31	41.2*	0.28	27.6*	0.32	52.7*	0.29	30.6*	0.32	46.7*
R	0.51		0.47		0.50		0.48		0.47		0.50	
R ²	0.26		0.22		0.25		0.23		0.22		0.25	

* $P < 0.05$. † $0.05 < P < 0.10$.

peated for the subgroups previously distinguished (see Table 7). The results are hard to interpret: the variable 'influence attributed by the GP to mental aspects' is the only one to discriminate in the expected way. All communication variables contributed significantly to the explained variance in judgement in respect of those doctors who attributed considerable influence to mental factors; for these doctors a somewhat greater amount of variance can be explained than for doctors who attribute little influence to mental factors. Furthermore, in the scores for the latter group of GPs, three variables are missing.

For the other GP/practice characteristics the multiple R is highest for the group who scored, lowest on communication and on psychosocial judgements, the doctor practising alone and the GP with little post-graduate training respectively. On examination of the importance attached to the various communication variables in different circumstances, it is striking to discover that 'clarifying the question' and 'allowing the patient to participate in the decision on a therapy' contribute significantly only for GPs who attribute considerable influence to mental factors. The most important contribution to the explanation of the variables is always made by 'consultation time,' 'broaching new subjects' and 'patient's contribution to the decision on a diagnosis.'

CONCLUSIONS

Doctors who notice a psychosocial component in many complaints are doctors who broach new subjects more than is done on average, who are concerned with the patient's opinion of his own complaints, who show feelings of interest and empathy and who try to uncover the 'question behind the question' in an interview more than happens on average. They are doctors to whom it is of importance to treat the patient as an equal and to inform him; they do not want to refer the patient immediately to specialist care, but prefer to wait for spontaneous improvement or solutions found by the patient himself. They are GPs who have considerable post-graduate training in this subject. The tendency to interpret many complaints as not purely somatic shows little relation with the size of the practice, mean duration of consultations or type of practice.

GPs with the style of communication outlined above more often respond to mental problems they notice, and if they do, they tend to talk it over with the patient. They resort less often to giving advice—a procedure to which GPs are disposed by the nature of their profession, but the benefits of which are considered much more dubious in the case of psychosocial complaints than with somatic complaints [30]. The effects of general-medicine oriented views on the treatment of psychosocial complaints are less marked than on judgement; the effect of post-graduate training has not been demonstrated. The characteristics of the practice, however, and a GP's subjective feeling of competence have greater consequences for the GP's effective dealing with a complaint by talking rather than merely giving advice, than for judgement. In short there is a psychological process, dependent on attitudes and training, but there is also actual

practice which is influenced by the GPs facilities (time, mutual consultation, competence) *inter alia*. Thus, our additional concept of opportunity/facilities has little to do with 'bias'; it seems to be that a doctor does not consider what he actually can do, when he says a complaint is not merely physical. However, the factors that we took into account influence the treatment positively.

These are the relationships at GP level; we have already noted that the influence exerted by the elements we distinguished is much less clear at consultation level. While the correlation between interview style on the one hand, and judgement and treatment on the other hand are obvious at GP level, we still find the effects of four features on judgement at consultation level; these are broaching new subjects, non-verbal attention offering the patient the opportunity to participate and, above all, the length of the period of consultation. We are here confronted with the problem that a correlational relationship is involved. Cause and effect are hard to distinguish. We can only fall back on the relationship we found at GP level between 'somatic interview style' and 'judgement and treatment,' from which we may infer that apart from the number of psychosocial complaints that are presented, a particular interview style is associated with many psychosocial judgements. However, if we want to ascertain whether the said communication characteristics are the cause of the psychosocial judgement an experimental research design is required that will be difficult to realize in practice.

One remarkable finding is the lower level of interaction between a GPs views and norms and his communication style. One of the few additional findings this item yielded was that 'clarifying the question' only 'worked' with general-medicine oriented GPs. In general we can state that displaying the proposed interview techniques is principally effective in the case of GPs who were classified by us in the general-medicine oriented group. For further GP characteristics with which the study was concerned little difference emerged, though probing for mental/emotional backgrounds and at the same time allowing the patient room to make his own contribution resulted in the same 'mental return' under all circumstances.

When we return to our problem definition, as stated in our introduction, we can say that we have outlined above a number of characteristics of the GP who notices and treats many psychosocial problems. We have not succeeded terribly well, however, in uncovering the relationship between those variables and the mechanisms which lead to many or few psychosocial interpretations. It seems likely that, even when the characteristics of the GP are not appropriate for detecting psychosocial aspects (e.g. little post-graduate training) he will still notice psychosocial complaints when he uses an affective, patient-centred etc. communication style. However, the fact is that this sort of doctor does not use that sort of style very often. If we wish to uncover the complex relationship between these variables, we shall first have to look for an economic way to assess styles of communication, in order to measure all those variables for a larger group of doctors, then true multivariate analysis will be possible. The

findings of this investigation, in respect of the fact that doctors appeared so consistent in communication style, are in this respect at least promising.

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