THE EUROCOMMUNICATION STUDY

AN INTERNATIONAL COMPARATIVE STUDY IN SIX EUROPEAN COUNTRIES
ON DOCTOR-PATIENT COMMUNICATION

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1 THE EUROCOMMUNICATION STUDY

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1.1 Introduction

In the last few decades the emphasis in health care has shifted from acute to chronic diseases, from instrumental interventions to lifestyle related health promotion, from cure to care, and from doctor-centred to patient-centred behaviour. In all these respects, doctor-patient communication has become even more important and the need for good communication skills will only increase. Communication is crucial, because discovering the true nature of a patient's health problem, the translation into a diagnosis and the physician's treatment depend on good doctor-patient communication. This communication is carried out through an exchange of verbal and non-verbal information.[1-8]

Doctor-patient communication is of great importance in primary health care. Research into doctor-patient communication has revealed a number of positive and negative effects of general practitioners' communication style on such outcome-related variables as patient satisfaction[9-12], adherence to doctor's prescriptions and advice[13-15], the prevention of somatic fixation[16], referral and prescription rates[17], and the recognition of mental disorders[18,19]. It follows that doctor-patient communication has an impact on the cost-effectiveness of medical care. Dissatisfied or non-compliant patients, unnecessary prescriptions and referrals lead to unnecessary costs. Doctor-patient communication is not a non-committal matter; it has far reaching consequences for the quality of care.

Communication may also be affected by other factors depending on the characteristics of different health care systems. European harmonization in many product and service areas and in economic and monetary policy, is leading to the integration of health care policies[20]. It is therefore necessary to provide a framework for general practice in Europe within which individual countries can formulate their own policies. The development of this framework is part of a comprehensive process aimed at increasing awareness of the role of general practice in promoting population health. Strengthening the role of primary health care is one of the aims of health care policy in Europe[21]. Since general practice has been the core professional discipline involved in the delivery of primary health care, the position of general

practitioners is of importance in health care policy. The professional domain of family medicine combines the features of the medical generalist, such as care for all and early signs/symptoms, with features of the personal doctor associated with family medicine, patients' expectations, and addressing individual, social and cultural norms and values.[22]

The position of general practitioners is stronger in some countries than in others according to the part they play in the health care system[23]. In countries where they act as gatekeepers to secondary care, patients see their general practitioners first even when they require specialist services. A fixed patient list encourages general practitioners to take personal responsibility for the medical problems of their registered patients. The employment status of general practitioners is also closely associated with the structure of the health care system. In most West-European countries general practitioners are predominantly self-employed. Differences in structure reflect important cultural values, as people have strong, often positive, feelings about their health care system.[22] But at the same time differences in structure have important economic consequences; countries with a primary care-based structure have more cost-effective services.[24]

The main objective of the study was to investigate how the characteristics of various health care systems affect doctor-patient communication in general practice. This objective is consistent with the need for research on the efficiency and quality of health care delivery.

1.2   Health care systems

The following aspects of health care systems were considered capable of affecting doctor-patient communication (see figure 1).

Figure 1   Health care system characteristics of the six participating countries

	gatekeeper	fixed list	employment	payment
The Netherlands	yes	yes	self-employed	mixed
United Kingdom	yes	yes	self-employed	capitation
Spain	yes	yes	employee	capitation
Belgium	no	no	self-employed	fee for service
Germany	no	no	self-employed	fee for service
Switzerland	no	no	self-employed	fee for service

a. General practitioner as gatekeeper versus freely accessible specialist care

In a health care system where general practitioners serve as gatekeepers, their role is central and strong. They are the first physicians to have contact with health problems before patients are referred to medical specialists. General practitioners are usually responsible for making the first diagnosis, requiring a thorough evaluation of the medical and emotional aspects of the symptoms and the possible psychological nature of the complaints. This gatekeeper system is in contrast with those where patients have direct access to specialists and patients themselves decide what kind of care they need. Gatekeeper general practitioners have a fixed list of patients. In non-gatekeeping countries the general practitioners' role is weaker; they play a secondary role compared with specialists, since patients have free access to them. There is no obligation for patients to register with one general practitioner.

b. Fixed lists

In countries with a gatekeeping system patients are usually registered with one general practitioner, whereas in countries where the general practitioners have no gatekeeping role patients are free to choose a doctor and may even visit different doctors.

c. Employment status

Another divergent characteristic is the employment status of general practitioners. Sometimes they work in salaried employment, whereas in other countries they are self-employed.

d. Payment system

Three different payment systems can be distinguished: a fee-for-service system in which general practitioners are paid according to the medical interventions performed; a capitation system where they receive a fixed amount of money for every patient; a mixed system of fee-for-service and capitation.

1.3   Conditions that influence doctor-patient communication

It has become increasingly clear that the processing of information is positively influenced by affective behaviour (verbal and non-verbal expressions of interest and concern), a patient-centred attitude[25], and probing instrumental behaviour (asking questions, giving information and advice). A patient visiting a doctor wants to 'know and understand' as well as to 'feel known and understood'.[26] Both sets of needs can be met by the two aspects of communication mentioned; instrumental behaviour and affective behaviour.[27]

Affective aspects of doctor-patient communication, such as affective behaviour and being alert to non-verbal cues, can be changed by training.[28-31] A number of helpful conditions can be identified, such as taking adequate time for a patient; familiarity with a patient and knowledge of a patient's history; good communication skills. These aspects appear to correlate positively with successful doctor-patient interaction.

There may however be obstacles interfering with the quality of communication which result from the structure of the health care system; competing interests could be an example. In non-gatekeeping systems where patients are not registered with a general practitioner and secondary care is accessible without a general practitioner's referral, it is more difficult for a doctor to know a patient's history. General practitioners are less familiar with their patient population in systems where patients have direct access to specialist care.[32] This lack of familiarity may be even more valid when direct access of specialist care is combined with the absence of a fixed list system. So, these general practitioners may show less affective behaviour than those with a gatekeeping role.

In health care systems where patients are registered with a general practitioner, they will probably have known their patients better and for longer than doctors working in other systems. There, more time may be lost asking patients routine questions, leaving less time for psychological investigations. Long-term acquaintance with a patient might make it easier for a general practitioner to pick up signs of mental distress through, for example, an uncommon pattern of visits. Previous experience with a patient and patient's family might

help the general practitioner clarify complaints.

Self-employed doctors may choose to maximize their workload, whereas doctors who are employed may feel less time pressure and so have longer consultations and more time to talk to patients. A remuneration system based on medical interventions (fee-for-service) might lead to increasing income through less talking with patients and carrying out interventions instead. The saying "time is money" may apply best to doctors working on a fee-for-service basis. So it was considered possible that structural conditions related to national regulations and other characteristics of the health care system might also contribute to the style of communication between doctors and patients.

Depending on the role of primary care in the various health care systems, it was considered that patients might differ in the importance they attach to different communication aspects. This difference may also depend on the health care system characteristics, apart from general practitioner and patient characteristics. What patients consider worth discussing with their doctors and the doctors' performance is likely to depend on society's prevailing norms and values.[33-36] Patients might prefer a different emphasis on affective and instrumental behaviour, and different degrees of a patient centred approach.

The vocational training of general practitioners may also influence doctor-patient communication[28-31], but training cannot be considered as a structural health care system characteristic. Vocational training is now obligatory in most West-European countries, but its content and time of starting differ between countries. Within a country some general practitioners will have had such training and some will not.

Summarizing, with respect to the influence of health care system characteristics on doctor-patient communication, it was expected that:
–   in gatekeeping countries (with fixed lists of patients) general practitioners show a more affective communication style with less biomedical but more psychosocial talk, and better picking up the patient's cues;
–   in countries with self-employed general practitioners the consultations are shorter; less time is spent in talking with patients, and there is less psychosocial communication; the workload of general practitioners is higher;
–   in countries where the payment system is based on fee-for-service, general practitioners talk less with their patients, and their communication style is more instrumental than affective.

1.4 Research questions

The following research questions were formulated:

1) Are there differences between European countries in the patient-reported relevance and performance of communication aspects?
2) Are there differences between European countries in doctor-patient communication?
3) Are these differences related to health care system characteristics?

1.5 Participating countries

Combining the requirements of a good variation of health care system characteristics and the availability of participants, the following countries were selected (see figure 1). Switzerland was not included in the original study proposal but participated in the Eurocommunication Study on her own initiative.

1: **The Netherlands**. General practitioners are gatekeepers with fixed lists. They are self-employed and work in a mixed system (partly capitation, partly fee-for-service). Vocational training is well established. The Netherlands is more or less the opposite of Belgium (especially Wallonia) and Germany.

2: **The United Kingdom**. In most respects the health care system is like that of the Netherlands, except that general practitioners work in a national health service system. In the United Kingdom the professional training of general practitioners is also well established.

3: **Spain**. General practitioners are gatekeepers with fixed lists (at health centre level). General practitioners are employed and paid by the national health service. Vocational training is being developed.

4:     **Belgium**. General practitioners are not gatekeepers and do not have fixed lists. Practices are small. Doctors are self-employed, working in a fee-for-service system. Belgium has two main regions with distinct cultures (Wallonia resembles France, whereas Flanders is more like the Netherlands) and different systems for vocational training (Flanders has an older tradition in this respect).

5:     **Germany**. Germany resembles Belgium in most respects, but has larger practices. Vocational training (especially with respect to doctor-patient communication) is not well developed.

6:     **Switzerland**. The characteristics of the Swiss health care system are about the same as in Belgium, especially when compared to Flanders. Most general practitioners have followed vocational training.

These countries represent a broad spectrum of health system characteristics. Some countries are included where general practitioners clearly serve as gatekeepers with fixed lists; in others there is free access to specialists; in some countries general practitioners are employed and in others they are self-employed; vocational training for general practitioners is well established in some countries and in others it is not.

1.6   Overview of the chapters

This book consists of six chapters, including the introduction (Chapter 1). The methods are outlined in Chapter 2. The selection of participants, sampling methods, recruitment and responses are described separately for each country. The study population and the results of the non-response analysis are described. A comparison is made of the GP study population of the Eurocommunication study and the Task Profile Study.[23] Further, the data collection, the measurement instruments and the methods of analyses are described. Since Chapters 4 and 5 were written as a journal article and had to be capable of standing alone, inevitably parts of these two Chapters and the other Chapters overlap.

In Chapter 3 a general overview is given of the frequency distribution of all relevant variables for each country separately. First general practitioner, patient and consultation characteristics are shown. Next, the verbal and nonverbal communication behaviour of both general practitioners and patients are pictured together with some consultation characteristics.

Chapters 4 and 5 report answers to the research questions formulated above. In these chapters the contribution of health care system characteristics while taking into account the

relevant, possible confounding variables is discussed. Chapter 4 reports the importance patients attach to different communication aspects as well as general practitioner performance of these aspects during a consultation viewed from the patients' perspective. The relationship with health care system characteristics is described. In Chapter 5 doctor-patient communication in the six European countries is compared, and the association between doctor-patient communication and health care system characteristics is addressed.

Finally, in Chapter 6 some methodological issues of the study are discussed and an overall review of the research findings is presented with the emphasis on the relationship between doctor-patient communication and health care system characteristics. Recommendations are put forward for health care policy and the education and training of general practitioners.

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2   METHODS

2.1   Selection of participants

The study design was cross-sectional. According to the study proposal, in five European countries data should be collected among GPs and their patients (see Introduction). Switzerland participated to the study on its own initiative, but was originally not included in the original study proposal. In the United Kingdom, Spain and the Netherlands 27 GPs per country should be included in the study; in Belgium, Switzerland and Germany 40 GPs per country, in order to account for language background (in Belgium and Switzerland) respectively political background (in Germany).

In each country 20 patients per GP should complete questionnaires, whereas consultations of 15 patients of each GP should be videotaped for the observation study.

The aim was (as much as possible) to involve an equal number of male and female GPs, but at least 10 female GPs in each country. The reason was that it should be possible to investigate differences between the four gender dyads in doctor-patient communication. Also was strived for and an equal number of urban and rural general practices.

In subsequent paragraphs will be described the sampling method, the way the general practitioners and their patients were approached, and the response of GPs and patients. Next, an overview will be given of the non-response rate, and the numbers of GPs and patients by gender and country. Further, the GPs of each country participating in the Eurocommunication Study will be compared with the GPs of these countries who were involved in the European GP Task Profile Study[1,2], with respect to relevant background and practice characteristics. Non-response analysis with respect to patients' background variables and reasons for encounter will be shown for each country separately. Lastly, conclusions about the generalization of the results will be drawn.

2.1.1 Samples, recruitment and response

For each country separately, the sampling method the recruitment of GPs and approach of patients and the response of GPs and patients will be described. All GPs were asked to complete a registration form of patients who refused to take part in the study. Half of the GPs registered these patients indeed (48.4%). The non-response percentages of patients were calculated only for these GPs. The response rate of German patients was not available, neither in the region of Basel where the patients were informed about the study before they visited the GP.

2.1.1.1 Netherlands
Sampling method
A random national sample of 200 GPs (100 men and 100 women) was carried out of a data base of all Dutch GPs.

Recruitment of GPs and patients
GPs were asked for participation by means of a letter, including information about the aim and background of the study. GPs who answered this letter positively were informed more detailed about the study and - if they agreed to participate - about the procedures of the data collection. Then an appointment was made to make the video recordings. GPs signed informed consent before the data collection started.

Patients of all ages consulting the GP on the day of data collection were at random approached by a researcher in the practice and were asked for written informed consent

before the consultation. Afterwards, the patients got the opportunity to withdraw their initial consent participation within a week, and if so, the collected data were destroyed. The telephone number of the NIVEL was on the sheets.

Response GPs and patients
109 of 198 GPs (55%) answered the letter asking for participation, of whom 44 (40,4%: 21 male and 23 female GPs) agreed to participate or asked for more information about the study. After being informed more detailed about the study three GPs withdrew. From the remaining 41 GPs, 31 GPs (15 male and 16 female) were included in the study.
About 16% of the Dutch patients visiting their doctor refused to participate.

2.1.1.2 United Kingdom
Sampling method
Random sampling techniques were not employed; rather GPs with known interests in primary care were recruited to the study by invitation. The lead investigator of NPCRDC mailed information about the study to a number of GPs based in practices around the North West of England who had previously participated in primary care research projects of Manchester University. In Birmingham a letter was written to GP practices involved in the Royal College of General Practitioners (RCGP) Research Network. A meeting was organised to inform GPs about the study and seek expressions of interest. In Exeter, information about the Eurocommunication study was mailed by Exeter University's Postgraduate Medical School to GPs involved in the PGMS research network. In all cases, expressions were followed up with telephone calls by the study researcher at NPCRDC. In addition, study researchers employed `snowball' recruitment techniques within some practices.

Recruitment of GPs and patients
Twenty GPs were initially recruited: 9 GPs from different practices around the North West of England, 3 GPs from different practices in Birmingham and 8 GPs from 5 different practices in and around Exeter. The `snowball' technique resulted in a further 7 GPs, 5 from Birmingham practices and 2 from the North West.
These practices were located in areas served by a total of 8 different medical ethical committees to whom applications were made for approval to carry out the research. Ethical committee approval for the study was granted by all 8 committees on the proviso that only adult patients (i.e. over the age of 16 years) would be invited to take part. The process of asking approval to ethical committees caused many problems and some delay in the progress of the data collection (though it was finished in time).
An appointment was made to collect data on a routine morning, afternoon or evening surgery. In most cases it was necessary to visit the surgery on more than one occasion in order to recruit 20 patients.

Patients were not informed about the study prior to attending for their appointment but were instead recruited while in the practice waiting room. Consecutive adult patients were informed about the study and invited to participate by the study researcher. They were asked to sign their consent both before and after seeing the doctor.

Response GPs and patients
GP non-response is difficult to ascertain as UK recruitment to the study was by personal contact with likely interested parties and some `snowballing'. Four out of 27 GPs were female (15%).

No systematic record of patient refusal rates was made during UK data-collection for the Eurocommunication study as the participating GPs often forgot to complete the log sheet

giving details of patients who refused to take part. Especially in deprived areas the non-response was quite high, although not reported by the GPs. Nearly a quarter of the patients (of GPs who completed the non-response list) declined to participate. This figure is somewhat higher as compared with refusal rates reported for other video-based studies of general practice consultations in the United Kingdom. The withholding of consent to videotaping in those studies was associate with younger patient age, greater levels of emotional distress and consultations for gynaecological problems.

2.1.1.3 Spain
Sampling method
Letters requesting participation to the Eurocommunication study were sent to 100 GPs working in health centres in Malaga city. Although all practices were in the city, there was a diversity of districts of Malaga city, resulting in differences in level of social classes of patients in the different practices. It must be emphasized that only GPs being salaried by the National Health Service and working in health centres did participate. So, no GPs with a private practise and working alone were included.

Recruitment of GPs and patients
GPs were requested by the researcher to participate in the study. As the researcher was a GP himself, he knew most of the GPs working in the health centres. All of the participating GPs worked in health centres, and were employed with the National Health Service. As a consequence, no private working GPs were included in the study.

Consecutive patients were informed about the study by a research assistant, a colleague GP who had recently finished their vocational training and had been working in the same health centre. As there were mostly a lot of patients waiting for their visit in the waiting room, sometimes each second patient had to be approached. In most cases, in one morning or afternoon surgery 20 patients agreed to take part in the study. The patients were asked to take part in the study and sign their consent before their consultation.

Response GPs and patients
Because of the method used for recruiting GPs - asking known colleague GPs - it is not possible to determine the response rate of GPs.
Patients mostly agreed to participate, only one of seven refused.

2.1.1.4 Belgium
Sampling method
In Flanders a random sample of 150 GPs (75 male and 75 female) was taken out of a database of Flemish GPs. In the Walloon provinces GPs belonging to three different quality circles were approached.

Recruitment of GPs and patients
GPs were asked for participation by means of a letter, including information about the aim and background of the study. Positive responders were called to make an appointment in order to inform them in more detail about the study and about the procedure of data collection. Then an appointment was made to make the video recordings. Non-responders were called and asked to take part in the study. If they still agreed to participate the same procedure of the positive responders was followed.
Consecutive patients were asked for written informed consent before they entered the consultation room.

Response GPs and patients

In Flanders 150 GPs received a letter, of whom 20 responded and among them 7 agreed to participate, all males. The 130 non-responders were called and 4 more agreed to take part in the study. Next, GPs belonging to the database of occasionally co-workers with the Department of General Practice and Primary Care of the University of Gent were contacted, first women and then at random, until 9 other GPs agreed to participate.

In the Walloon provinces one GP of Mons, one GP of Brussels and one GP of Liège contacted other GPs of their quality circles. Positive responders were called to make an appointment to inform them and to make arrangements for the video-recording.

A quarter of the Belgian patients did not want to be included in the study.

2.1.1.5 Germany

Sampling method

GPs were recruited by means of a call for participation in 5 specialist publications, three of them are distributed to all of the 40000 German GPs. Next, GPs were addressed via existing cooperation like earlier studies of AQUA, quality circles or by `snowball'.

Recruitment of GPs and patients

A letter was sent, informing about the aims as well as the documentation procedure of the Eurocommunication study. All those GPs were asked for participation, who had responded to our call for participation, and those GPs – mostly in Eastern Germany – who had taken part in former studies of AQUA, but who were not personally known to the German investigator. About two weeks later, the researcher asked them once more by phone. Mostly he had to call more than once, because the GPs did not read the letter. Those GPs who were personally known to the investigator and had taken part in former studies using the video documentation were contacted by phone first, then the information was sent to them and asked them by phone 2 weeks later. If the GP agreed an appointment was made for the data collection, mostly the GPs had to be informed once more, because they did not read the information. Patients were informed about the study by the practice assistant and if they agreed asked for informed consent.

Response GPs and patients

The response on the call in specialist publications was very low: only 5 GPs responded. GPs of nearly all Bundesländer were contacted, but especially GPs of northern general Germany responded, probably because of the embedment of AQUA in this region. In eastern Germany 40 GPs were contacted of whom 14 GPs (35%) participated, in western Germany 51 GPs were approached and 29 of 51 GPs participated (57%). Eleven women (7 from East- and 4 from West-Germany) took part in the study. Finally, even more GPs than was aimed at took part, because more and more GPs got interested in the study.

There are doubts on the reliability of the data concerning the patients who refused to take part in the study, especially with respect to reason for encounter and psychosocial background. So, no figures are presented of the response rate (table 2.1) of German patients, neither are German patients included in the non-response analysis with respect to background characteristics (table 2.5).

2.1.1.6 Switzerland

Sampling method

In three Swiss regions GPs were invited to take part in the study. The German speaking doctors were from the region of Basel (10) and from several other regions of the German part of the country, like Bern, Zurich and Aargau (also 10 GPs). From the French speaking part, mainly in the neighbourhood of Lausanne, also 10 GPs participated. Most of the Swiss GPs were involved in a quality circle.

Recruitment of GPs and patients

In the region of Basel, 10 GPs were personally requested to participate. If so, an agreement about the date of data collection was made. In the other German speaking regions also 10 GPs were asked by the study researcher.

Patients from Basel (only 18 years and older) were informed about the study including video-recording by the practice assistant and agreed to participate in advance of their appointment for a visit. If they refused they got an appointment for another day (if possible). The patients had to sign the informed consent, the address and name of the patient not. The text was in the mane of the GP. The phone number of the investigator was not on the sheet.

In the other German speaking part of Switzerland the practice assistants did not tell their patients about the study when they made the appointment. They informed them the day of the consultation before asking for informed consent.

In the French speaking region of Lausanne GPs were personally asked by the investigator. Most of these GPs were rather interested in psychosocial care, and their patients generally present a high number of psychosocial problems.

Response GPs and patients

Concerning the GPs, there were only few refusals in the German region. One female doctor from the region of Basel was not able to persuade her patients to participate, so finally this doctor could not take part in the study.

In the neighbourhood of Lausanne, only one GP has answered on an announcement. There-fore GPs were recruited who already took part in a study.

The non-response rate of patients who refused is not known from Basel, because the practice assistants did not register the refusals. On the average, a quarter of the patients from the other German and the French speaking patients denied to take part.

Table 2.1   Number of GPs who completed non-response forms, number of patients who did or did not participate, and response rate, by country

	GPs	patients	% non-response	
	N	N resp	N non-resp	
Netherlands	24	459	87	15.9
United Kingdom	14	240	71	22.8
Spain	15	304	51	14.4
Belgium	25	484	161	25.0
Switzerland	14	281	75	21.1
Total	92	1656	413	20.1

2.1.2 Study population

Table 2.2 shows the number of GPs who participated in the study classified into male and female GPs and by country. In Spain and the Netherlands the proportion of men and women was about the same. In the other countries about a quarter of the GPs were women, but in the United Kingdom only four female GPs participated in the study. In Walloon Belgium no female GP took part in the study. and in French speaking Switzerland only two women.

Table 2.2   Number and % of GPs by GPs' gender and by (part of the) country

	♂ GPs		♀ GPs		Total
	N	%	N	%	N
Netherlands	15	48.4	16	51.6	31

United Kingdom	23	85.2	4	14.8	27
Spain	12	44.4	15	55.6	27
Belgium	23	74.2	8	25.8	31
- Flemish	12	60.0	8	40.0	20
- Walloon	11	100.0	0	0.0	11
Germany	32	74.4	11	25.6	43
- East	7	50.0	7	50.0	14
- West	25	86.2	4	13.8	29
Switzerland	22	71.0	9	29.0	31
- German speaking	13	65.0	7	35.0	20
- French speaking	9	81.8	2	18.2	11
Total	127		63		190

In total 3674 patients (59,1% female versus 40,9% male) participated in the study, in all participating countries more female than male patients (table 2.3). Female GPs saw much more female than male patients, but also male GPs were consulted by more women than men. In Spain the percentage women consulting a doctor was the highest, whereas only 17% of English male patients visited a female doctor.

Table 2.3   Number and % of patients by patients' and GPs' gender and by country

	♂ GP				♀ GP				Total			
	♂-pat.		♀-pat.		♂-pat.		♀-pat.		♂-pat.		♀-pat.	
	N	%	N	%	N	%	N	%	N	%	N	%
Netherlands	117	41.9	162	58.1	106	35.3	194	64.7	223	38.5	356	61.5
UK	186	49.6	189	50.4	12	16.9	59	83.1	198	44.4	248	55.6
Spain	86	35.4	157	64.6	84	28.4	212	71.6	170	31.5	369	68.5
Belgium	223	49.8	225	50.2	43	28.1	110	71.9	266	44.3	335	55.7
Germany	309	46.1	361	53.9	84	38.4	135	61.6	393	44.2	496	55.8
Switzerland	207	46.5	238	53.5	46	26.3	129	73.7	253	40.8	367	59.2
Total	1128	45.9	1332	54.1	375	30.9	839	69.1	1503	40.9	2171	59.1

2.1.3 Comparison of the GP study population of the Eurocommunication Study and the Task Profile Study

In order to know to what extent the GPs of the Eurocommunication Study are representative of the entire GP population in each participating country, a comparison was made (see table 2.4) with the study population of the Task Profile Study.[1,2] In this study the questions were formulated in the same way and therefore a systematic comparison was possible.

One of the intentions of the Eurocommunication study was to aim at the participation of an equal number of male and female GPs, in order to study gender differences between the four gender dyads in a continuation of the present study. In the Netherlands and Spain this aim was reached, and therefore higher than in the Task Profile Study. In Switzerland also more women took part in the Eurocommunication than in the Task Profile Study, one third was female. In the United Kingdom, Belgium and Germany the aim was not realized; the proportions of female doctors reflect the actual male-female ratio. Differences between both studies are given below for each country separately (table 2.4).

In the Netherlands, the GPs of the Eurocommunication study had more often finished their vocational training as a GP; more of them worked in a group practice (not solo); less worked in rural practices. These differences are probably related to the higher number of female GPs in this sample as compared to the Task Profile Study.

All of the English GPs work in group practices; they more often they practised in the inner

city.

In Spain there were many differences between GPs' characteristics of both studies. The explanation is that in the Eurocommunication study only GPs were involved who were employed with the National Health Service and not GPs working in private practices. Nearly all of the GPs had followed a vocational training; all were working in group practices in Malaga city (and suburbs).

They Spanish GPs were somewhat younger than the GPs included in the other study, whereas the Belgium doctors were somewhat older than their colleagues of the Task Profile Study. However, these differences disappeared if the figures of the last mentioned study were corrected for the bias with respect to the population figures.

The Belgian GPs had less often followed a GP training; they were somewhat older on the average which is likely to explain these differences. In Germany less GPs worked in a solo practice, which reflects a general trend of recent years in Germany. Less Swiss GPs had finished the vocational training.

Lastly, the GPs from each country reported a lower workload than their colleagues of the Task Profile Study. Workload per week was defined as the (number of consultations + (2 * number of home visits) + (½ * number of phone calls) per week, accordingly to a previous study.[26] In this study, workload has been demonstrated being a satisfying determinant of the available time for GP's patient contacts (part-time working has been accounted for, which excludes this aspect from workload).

Table 2.4   GPs of the Eurocommunication Study compared with GPs of the Task Profile Study with respect to background and practice characteristics, by country

	Neth		UK		Spain		Belg		Germ		Switz	
	Eur	TPS	Eur	TPS	Eur	TPS	Eur	TPS	Eur	TPS	Eur	TPS
% women	51.6***	19.2	14.8	22.0	55.6*	34.3	25.8	13.9	25.6	16.3	29.0***	7.1
% voc training	90.0*	65.5	87.5	71.0	92.6***	26.7	51.6*	70.7	86.5	74.8	67.7*	86.0
% solo	20.0*	45.9	0.0*	15.9	0.0**	23.3	67.7	69.4	35.9***	67.5	61.3	72.3
% inner city	20.0	10.6	45.8***	16.6	56.0**	28.9	22.6	17.8	15.8	11.4	12.9	7.1
% rural	10.0*	28.4	4.2	18.2	0.0**	27.9	22.6	30.6	34.2	30.1	19.4*	43.1
age:												
- mean	45.2	44.8	43.1	46.3	38.5*	41.5	44.9**	42.3	46.2	49.1	47.7	48.1
- stdev	7.2	6.4	6.9	9.7	3.9	8.5	6.4	8.7	6.7	8.4	5.8	8.5
workload[1] pw:												
- mean	189***	264	205*	273	183***	244	149**	216	309*	392	126***	223
- stdev	50	95	70	107	63	120	60	114	65	145	44	79
N GPs	31	208	27	296	27	577	31	511	43	166	31	198

*	p ≤ 0.05
**	p ≤ .01
***	p ≤ .001

[1]   Workload per week: (number of office consultations) + (2 * number of home visits) + (1/2 * number of telephone calls) per week

2.1.4 Non-response analysis of patients

All GPs were asked to complete a registration form with some characteristics of patients who refused to take part in the study, but only 92 GPs did complete these forms. In the United Kingdom the non-response was especially high in the rural areas. The non-response analysis was performed by comparison of patients of those 92 GPs (Table 2.5). The non-response rate was 21%, which is comparable with previous studies using video recordings.

The proportion of women in the non-response groups is somewhat higher, but no differences were found in age and psychosocial background of problems of both groups.
Patients who refused to take part in the study had less musculoskeletal and respiratory problems, whereas problems of the female genital system more often were presented. Psychological, social and general or unspecified problems did not discriminate between responders and non-responders.

Table 2.5   Non-response analysis of patients with respect to gender, age, psychosocial background of health problems and type of health problems (ICPC chapters)

	resp (N=1656)	non-resp (N=446)
% women	61.0	66.3 *
mean (st dev):		
- age	44.6 (20.6)	45.3 (20.3)
- psysoc background	2.6 (1.4)	2.7 (1.5)
% health problems:		
general/unspecified	12.1	14.9
blood	1.5	1.7
digestive	5.8	6.4
eye	1.4	1.2
ear	2.1	2.2
circulatory	8.9	8.1
musculoskeletal	14.3	10.4 *
neurological	2.9	4.1
psychological	9.5	11.9
respiratory	14.6	11.4 *
skin	7.2	5.2
endocrine/metabolic	4.8	5.2
urology	2.4	1.4
pregnancy/fam.planning	2.9	3.8
female genital system	4.4	6.4 *
male genital system	0.4	0.9
social	4.8	5.8
N health problems	2883	579

* $p \leq 0.05$

2.1.5 Conclusions

Based on the results of the comparison between GPs who participated in the Eurocommunication Study and the Task Profile Study it can be concluded that in some countries a bias was found that partly may be explained by difference in time of data collection (1987 respectively 1983) and sampling method, and partly because was strived for a greater number of female GPs that did not reflect the really proportion.

The general finding of GPs having less consultations may be also partly due to the inclusion of more women. For, female GPs more often work part-time as compared to male doctors. The over-representation of women may also influence the presence of less general practices in rural areas in the Netherlands and Switzerland (in Spain were more female GPs but no rural areas included). Moreover, volunteer GPs being interested in doctor-patient communication may have more often participated in the study. The lower workload of GPs that was found in all countries may be related to this type of GPs and their practising.

In Spain and the United Kingdom (nearly) all GPs come from the (sub)urban areas, whereas in Germany relatively more GPs come from the rural areas. This may cause a bias because in rural areas GPs have mostly a more comprehensive task.

Differences in vocational training of GPs may be partly be attributed to the difference in time of data collection, because this training is obliged for GPs having established in recent years. Partly, differences might be due to the sampling methods used, like in Switzerland and Belgium where GPs of the Eurocommunication study less often had finished a vocational training as compared to GPs of the Task Profile Study.

Based on the comparison of both studies it can be concluded that in this comparative study the results must be interpreted in some respects, as gender bias and urbanization, carefully

with respect to the generalization GPs on the country level.

In all countries except the region of Basel in Switzerland, consecutive patients were asked for participation. In the Basel region it was required by the participating GPs to ask patients to come 10 minutes earlier to the practice, which may have caused a bias of patients' health problems because they had the possibility to refuse before coming to the general practice. Moreover, in other countries it was neither required nor possible to ask the patients for participation beforehand.

However, the non-response analysis of the health problems of participating and refusing patients showed only slight differences in health problems presented. Further, somewhat more women than men refused to participate, but no differences were found with respect to mean age and psychosocial background of the health problems.

The results from Spain may be interpreted carefully, because the data only come from GPs form Malaga city working in health centres and being salaried by the National Health service. So, private working GPs from other areas may practise in another way.

In Switzerland and in the United Kingdom only patients of 18 years and older were included in the study. Therefore, a separate analysis of patients below and above this age of 18 years may be required, dependent on the type of research questions. For example, the importance patients attach to different communication aspects will be analyzed for patients of 18 years and older.

Summarizing, no influence is expected from different characteristics and health problems of patients who denied to be included in the study.

2.2 Data collection

Procedures
GPs completed a questionnaire on the day of the videotaping or afterwards, in which case they sent the questionnaire by post to the responsible investigator. Only few GPs did not sent back the questionnaire, although they were asked to more than once.

Patients completed a questionnaire before and after their visit. Some patients were reluctant to write down why they were seeing the doctor either because of privacy concerns or literacy problems. If patients were illiterate or forgot their glasses or were not able to write, the responsible research assistant helped them or wrote down the answers instead of the patient. In other cases there was no time to complete the questionnaire before the patient was called to see the doctor. Mostly, the patient completed the questionnaire after the visit, but they did not have time in all cases to do it afterwards.

Videotaped patients (not companions) were registered on a registration form (log sheet) by the GP. Although we asked them to, many of the GPs did not complete 'reasons for encounter according to the patient' differently from 'reason for encounter according to the doctor'. This may have been in part a problem with memory - the log sheet was often completed after each consultation had finished, although we asked to complete the log sheet immediately after each consultation. At the end of the consulting hour it might have been difficult to remember the exact words of the patient when presenting the problem at the start of the encounter.

Twenty consultations of nearly all of the participating GPs in each country were videotaped. Of these consultations, of each GP 15 were rated; five extra consultations were videotaped for several reasons. Firstly, most of the GPs had to get used to the presence of the video camera, and therefore generally the first three consultations (in Switzerland only the first one)

were skipped in order to avoid bias because of adaptation to the video camera. Further, patients were offered the possibility to withdraw consent afterwards. Thirdly, some video recordings might be not usable because of unforeseen damage, not audible communication or a only partly recorded consultation.

Camera installation
The video-camera had a fixed position in the consultation room. The whole consultation was recorded in order to be able to register the total length of the consultation and physical examination. If possible, the camera was positioned in such a way that the GP's full face was shown and the patient from aside or from behind. The physical examination was performed out of the sight of the camera, but the doctor-patient communication was recorded. Sometimes it was not possible to hear the conversation because the examination room was separately and too far from the consultation room.
The recording was only stopped when a patient did not give consent for the recording, or if the patient during the consultation still refused to participate.

Privacy regulations
All recordings and questionnaires were only identifiable by corresponding codes. The local investigator took care that during the recordings patient questionnaires, GP registration and informed consent forms all had the same corresponding code number. Only the informed consent form contained a further identification possibility (name and address), that was removed one week after recording (till then, this identification is necessary to identify possible participants regretting their previous consent). Privacy was guaranteed for both GPs and patients.
The tapes were safeguarded in locked rooms, according to the NIVEL regulations.
NIVEL-employees, engaged with observation and data-analysis, were committed to a vow of secrecy, regulated in their employment contract. Tapes are never handed out to any third party.
In Belgium, the United Kingdom, Germany and Switzerland the videotapes were rated in the countries themselves, and thus the privacy regulations of the separate countries were applied.

2.3 Measurement instruments

The measurement instruments used to answer the research questions are on the patient/consultation level: patient questionnaire; GP registration form; observation protocol. On the GP level the GP questionnaire was used.
There is a certain coherence between the different instruments chosen. For example: the dimensions, to be distinguished in patient's importance scores (concerning biomedical and psychosocial aspects) return in the observation protocol. A possible mental disorder is assessed in both patient's questionnaire and GP registration form, in order to combine both views.
In order to be able to compare the data of the different countries, the way in which the data were used in the analyses is described (if necessary), for each of the measurement instruments separately. In this way standardized data were used and can be used by the researchers of all participating countries.

2.3.1 **Patient questionnaire** (Appendix 1)
The patients completed questionnaires about demographic characteristics, health and health perception and expectations and evaluations of health care. The variables are listed below and, if relevant, the recodes of variables are given too.

24

<u>Personal information</u>

- year of birth
- gender
- living alone
- living with:
    partner
    children
    parents
    sisters/brothers
    other adults

If relevant, in the analyses a distinction was made between living with children with and without a partner (and/or parents, sisters, brothers, other adults)
- employment
    if yes: numbers of hours per week: <32 hrs=part-time; $\geq$ 32 hrs=full-time
- highest level of education attained:
    none
    primary school
    secondary school
    higher vocational training/university
    In all countries except Germany and Switzerland one four-point scale was used, that was recoded into 1,2=1 (low); 3=2 (average); 4=3 (high).
    In Germany two questions were formulated, about `hochste Schulbildung' and 'hochste Berufsbildung', both with 4 answer categories, like the former scale.
In Switzerland a seven-point scale was used, and the possibility 'other education' was added. The recoding was: 1,2=1 (low); 3,4,5,8=2 (average); 6,7=3 (high).
In the United Kingdom the educational level appeared to be misunderstood by especially those patients which had finished a non-professional vocational training. These people often filled in `higher vocational training' as there was no other suitable response option. So, if analyses including this variable or not show important differences, the English data on this variable will be omitted.
- health problem(s) for which they visited the GP that day.
    Health problems were coded following the International Classification of Primary Care (ICPC).[3] Furthermore, for the analyses the health problems were used on the level of the 16 ICPC chapters.
- new or repeat visit for these problems

Health status and general health perception

The COOP/WONCA charts[4] were used to measure on a five-point scale the patients' physical functioning, emotional functioning and social functioning, by self report. This measurement instrument was validated for cross-cultural use.
Questions are asked about:
- physical fitness
- feelings
- daily activities
- social activities
- change in health
- overall health
- pain

In the analyses were used, dependent on the research question, (1) mean values; or (2) recoded values: 1,2,3=1 (`good') and 4,5=2 (`bad'); or (3) recoded values 1=1 (no problem at all) and 2,3,4,5=2 (a little to very problematic) or (4) recoded values 1,2=1 and 3,4,5=2

Relevance and performance

The scales on relevance and performance were based on the combining of two different measurement instruments. Firstly, Sixma et al.[5] developed a conceptual framework (the Quote scale) for measuring patient satisfaction by means of importance and performance scores from the patients' perspective. They concluded that the concept of asking about expectations is ambiguous and therefore they used importance scores of different care aspects. The assessment of importance-relative perceptions of patients is especially relevant in the context of international comparison, where differences between countries regarding the importance attached to different aspects of communication might be expected based on cultural differences.[6-8] It was necessary to adapt this conceptual model, because it was developed for a study among groups of patients suffering from chronic illnesses and aimed at a general perception of received health care during a long period. The present study was among average patients aimed at a specific perspective, i.e. of communication aspects, during one consultation.
Secondly, the content of the communication aspects was derived from the 'Patient Requests Form' (PRF).[9] The PRF quantifies the intentions of patients attending their general practitioner. Principal component analysis of the 42-item PRF revealed that responses from each sample yielded identical components that described three distinct types of requests: (1) for explanation and reassurance; (2) for emotional support; (3) for investigation and treatment. The same components are also reflected in the observation method used (see 2.3.4). Two items about medication and referral were added. We used only those items (12 of 42) of PRF that had a loading of $\geq$ .60 in principal component analyses. Instead of patients' intentions we measured the importance patients attached to the items.
Factor analysis of both the pre- and post-visit lists of questions on relevance and performance revealed 2 subscales: a biomedical scale of 6 items (item 1,4,6,8,9,12) and a psychosocial scale of 4 items (item 2,5,7,10). The biomedical scale consists of items about discussing symptoms and problems, and explaining test results and course and seriousness of problems. The psychosocial scale comprises of items about support with and explanation of psychosocial problems. Two items were not included on the base of this analysis (Dr. confirmed a previous diagnosis, and Dr gave advice on a drug I am taking). The reliability of the scales was satisfactory. Cronbach's alpha of the biomedical pre- and post-visit scale was 0.84 and 0.69 respectively, of the psychosocial scale 0.83 and 0.80 respectively.
In the pre-visit version the importance of the various items for their visit of that day is assessed, using a four-point scale (not important; rather important; important; utmost important); added to this scale is the possibility to tick 'not applicable'. In the post-visit version

patients report the perceived performance of the GP on the selected items. The questionnaire after the consultation (in which is asked whether the doctor carried out each item) the categories to be rated are: not; really not; really yes; yes; not applicable.

Also was asked for the patients' satisfaction about the items mentioned, but these results were abandoned because many patients did not fill in this list or only partly. Moreover, most patients were (very) satisfied about all aspects, so the instrument did not discriminate at all.

The percentages of patients who assessed an item as `(utmost) important` were the indicator for he importance score, and the percentages of patients who filled in that the doctor carried out an item `really yes` or `yes' were used as an indicator for the performance score (in the analysis the categories were dichotomized). Another way of analysis of the importance and performance scales is to calculate the mean of each scale. The correlation between the results of both analyses was very high (r=.96).

2.3.2 GP registration form (Appendix 2)

Videotaped patients (not companions) were registered on a registration form by the GP. For each patient the GP answered questions about:

- gender
- year of birth
- the number of years the patient has been on the GP's list: mean values were used in the analyses - the number of visits the patient made during the last year: dependent on the research question, mean values were used or recoded values, for example: 0,1=1 and $\geq$2=2
- acquaintance with the patient on a five-point scale: 1=bad, 5=very good: mean values were used
- reason for encounter (max 3) according to the patient: ICPC coding was used
- medical diagnosis/health problem (max 3) according to the GP: ICPC coding was used.
- was it a new or already existing diagnosis/problem and were medicines prescribed
- assessment of psychosocial background of the patient's problems, on a 5-point scale: 1=purely somatic, 5=purely psychosocial: 1=1 (purely somatic); 2,3,4,5=2 (slightly to purely psychosocial).
  Dependent of the research question, another recode can be used, like 1,2=1 (mostly somatic) and 3,4,5=2 (mostly psychosocial).
- doctor's own evaluation of his/her medical and psychosocial performance and the quality of the doctor-patient relationship, expressed in school-figures: 1 meaning "very poor" and 10 meaning "excellent": mean values were used in the analyses.

If there were missing values on the GP's medical diagnosis, the reason of encounter (RFE, according to the patient) was used in the analyses and vice versa. If both diagnosis and RFE were missing on the GP registration form, the health problem was used which the patient filled in on the patient questionnaire.

However, in the original data file it remains possible to compare, for example, the doctor's diagnosis and the health problem as expressed by the patient him/herself.

comparable form is used to register some of the patient's characteristics who refused to participate. Only the real relevant items have been included which were used for the non-response analysis:

- gender
- year of birth
- reason for encounter (max 3)
- medical diagnosis (max 3)
- psychosocial background

2.3.3 Observation protocol (Appendix 3)

By means of observation of the videotaped consultations the following aspects were measured. They are described in more detail in separate paragraphs.

- verbal affective and instrumental behaviour
- non-verbal behaviour
- content of the consultation
- patient-centredness
- consultation characteristics

2.3.3.1 Verbal affective and instrumental behaviour (Appendix 3.1)

Verbal affective and instrumental behaviour was measured by means of Roter's Interaction Analysis System (RIAS).[10] This is a well documented, widely used system in the USA and the Netherlands.[11-13] It was specially designed to code both doctor and patient communication. This system distinguishes both instrumental (task focussed) and affective (socio-emotional) verbal behaviour in doctors and patients, reflecting the cure-care distinction. This `interaction analysis system' enables the methodic identification, categorization and quantification of salient features of doctor-patient communication.[14,15] The unit of analysis is the utterance or smallest meaningful string of words. All utterances are assigned mutually exclusive catego-ries. Based on the analyses and findings from earlier studies, the categories are merged into 16 clusters, identical for doctor and patient. Ong[15] concluded that the feasibility and content validity of the RIAS was satisfactory (in an oncological setting) and that the RIAS was able to discriminate between communicative behaviours in an oncological sample and three general practice samples.

Each group of (at least two) observers in the different countries was trained in the same way by the same person, in order to reach an as much as equal rating of the videotaped consultations in all countries. All observers were native speakers. Additionally to the training, a discussion group (by e-mail) was started to discuss difficulties and solve problems. The Spanish and Dutch consultations were rated by means of a computerized rating method (named CAMERA)[16], the other consultations were rated by hand on especially designed observation forms.
The inter-rater reliability (irr) was measured for each country or part of a country (in Belgium in Switzerland) separately, by calculating Pearson's correlation coefficient for 20 consultations of (in the separate countries) different GPs that were rated by pairs of observers of the different countries. The irr's as given in table 2.6 is the average irr of pairs within one country. Inter-rater reliability was calculated using numbers of utterances, only for clusters occurring more frequently than 2%, because for under-utilized clusters it could not be confidently calculated due to the effect of skewed data on correlation coefficients.[10,15,17,18]
From the table it appears that 79% the irr's are rather good, i.e. 0.7 or higher; 15% is lower (between 0.5 and 0.7); 6% was too low (<0.5). Most of the irr's <0.5 concerned Switzerland and mainly the cluster 'other' and the cluster `counsel medical/therapeutical'. So, the interpretation of the results should be done with care for those categories with a low irr.

The RIAS clusters were analyzed each separately for both GPs and patients as percentages of all utterances and, among others, the ratios affective/instrumental utterances were calculated.

Table 2.6   Inter-rater reliability by country (Pearson's correlation coefficient)

	Neth	UK	Spain	B-Fl	B-W	Germ	G-Sw	F-Sw
General practitioner								
social behaviour	.93	.84	.95	.78	.69	.63	.62	.73
agreement	.93	.92	.89	.93	.68	.94	.64	.94
paraphrase .78	.71	.77	.81	.81	.68	.49	.72	
verbal attention*								
showing concern*								
reassurance*								
disagreement*								
giving directions	.93	.78	.86	.72	.83	.70	.94	.54
asking clarification*								
asks questions								
- med/ther	.87	.82	.97	.73	.94	.92	.92	.64
- lifestyle/psysoc	.93	.95	.79	.70	.79	.90	.76	.83
gives information								
- med/ther	.88	.94	.91	.93	.97	.93	.62	.78
- lifestyle/psysoc	.94	.50	*	.85	.77	.47	.33	.92
counsels								
- med/ther	.57	.77	.83	.68	.92	.80	.35	.44
- lifestyle/psysoc*								
other	.73	.61	.68	.81	.57	*	.62	.31
Patient								
social behaviour	.81	.84	.98	.81	.56	.75	.95	.61
agreement	.81	.94	.52	.93	.98	.96	.48	.68
paraphrase*								
verbal attention*								
showing concern*								
reassurance*								
disagreement*								
giving directions*								
asking clarification*								
asks questions								
- med/ther	.86	.86	.47	.90	.73	.83	.75	.55
- lifestyle/psysoc*								
gives information								
- med/ther	.83	.76	.96	.96	.88	.92	.84	.69
- lifestyle/psysoc	.94	.82	.58	.91	.97	.98	.72	.91
other	*	.28	*	.71	.55	*	.69	.61

* ≤ 2% of the total of utterances

2.3.3.2 Non-verbal behaviour (Appendix 3.2)

Affect ratings

In addition to the above mentioned verbal categories, the affective context of the videotaped visits, beyond the significance of the words spoken, were rated by means of four affect scales. Previous research in general practice has shown that these affect-ratings have predictive value for the quality of care; they showed a very high correlation with the quality of care as measured by independent assessments of a panel of twelve experienced general practitioners (GPs) of the quality of GP's technical-medical behaviour, psychosocial behaviour, and of GP's management of the doctor-patient relationship. Four affect scales were rated on the following six-point scales (1=low, 6=high) both for the general practitioner and the patient. The mean values of the ratings were used in the analyses. The affect scales are:
- Anger/irritation
- Anxiety/nervousness
- Interest/concern
- Warmth/friendliness

The interrater reliabilities of the affect ratings and the patient centredness scales were calculated by means of the percentages of agreement between the different pairs of observations. This was preferred over the computation of Cohen's Kappa because Kappa is highly sensitive to the skewness of the frequency distribution of variables. Pearson's correlation coefficient was not used because the two scales existed of six respectively five answer categories (instead of being continuing variables).

The agreement percentages were in most cases fairly to very good (70% - 100%), with only a few exceptions.

Patient-directed gaze

GP's patient-directed gaze (eye contact), i.e. the time the GP looks directly into the patient's face, was rated by stopwatch, which method in other studies has been very reliable (r=0.97). The length of eye contact was related to the length the GP is sitting opposite the patient or - in other words - the length the GP was `on the screen' and was able to look at the patient.

2.3.3.3 Content of the consultation (Appendix 3.3)

The following health-related issues were assessed by the observers:
- Which symptoms are discussed?
- Medication prescribed? If yes, a new or repeat prescription?
- Referral? If yes, to which medical or paramedical profession, and a new or repeat referral?
- Any instrumental treatment (surgery, first aid, ear syringe, etc.)
- Any diagnostics: ECG, hypertension measurement, blood/urine tests, etc.
- Patient education (is diet, alcohol or tobacco use, exercise, etc. discussed?)
- Any other kind of prevention or health-related issues?

With respect to instrumental treatments, diagnostic procedures and health education precoded categories were used.

2.3.3.4 Patient-centredness (Appendix 3.4)

Patient-centredness is seen as an indicator of the quality of the whole consultation, whereas patient-centredness originally stems from Byrne & Long[19] and was meant as an indicator of the doctor's power. For the present study, a 'new' measurement instrument was developed, based on Byrne & Long. For shortness sake, five scales were used to get an impression of the patient-centredness of the GPs.

GP's patient-centredness was measured by five five-point scales, with a range form poor/not done (1) to excellent/very well done (5), and the possibility for rating 'not applicable'. Mean

scores were used in the analysis. The scales indicate:
- patient's involvement in the problem-defining process
- patient's involvement in the decision-making process
- doctor's picking up the patient's cues
- consideration of the patient's ambivalence or self-efficacy
- doctor's overall-responsiveness to the patient

In order to determine the reliability and validity of this scale, other measurement instruments were used by the English researcher.[20] In this way, the results of the present study could be compared with validated instruments. She found that the three measures demonstrated varying levels of inter-rater reliability from poor to good. Reliability was proportional to training requirements. Differences in construct validity of the three different measures were evident, thus their concurrent validity was relatively low. She concluded that caution must be exercised in the choice of measurement method because of differences in how patient-centredness has been operationalized.

2.3.3.5 Consultation characteristics (Appendix 3.4)
Different aspects were measured by the computerized method CAMERA (Vlugt) or by means of stopwatch, like the length of patient-directed gaze (see 2.4.2).

Length of consultation: interruptions were abstracted from the total consultation length.
If the doctor-patient communication was not rated during the physical examination, then the length of examination was abstracted from the total consultation length.

Physical examination: only in Germany the length of the examination was not always measured, because in some general practices the examination room was separated and the patients did not return to the consultation room. If the doctor-patient communication during the physical examination was inaudible and therefore not rated, the length of the examination was subtracted from the consultation length.

GP on the screen: the time the GP was on the screen and he/she could look at the patient. This length was used for calculating the eye contact (see 2.4.2)

Interruptions: when there was a phone call that was not related to the patient's consultation the length of the interruption was subtracted from the total consultation length. The same was done when another person, e.g. an assistant of the GP, entered the room or when the GP left the room.

Conversational contribution: the utterances relative to the total count of utterances of both the GPs and the patients were used as a proxy for their speaking time. From earlier studies it was known that the Pearson's correlation coefficient of speaking time and the total count of utterances is very high (> 0.90). Percentages were used by dividing the GP respectively patient utterances by the total of all (GP and patient) utterances.

2.3.4　GP questionnaire (Appendix 4)
Relevant information about the background characteristics, working circumstances, professional beliefs and attitudes of participating doctors was collected by means of questionnaire, to be completed by each participating GP. To be compatible with earlier research, the same GP questionnaire was used as in the GP Task Profile Study.[1,2] The questionnaire was augmented with attitude scales which has been used before in other Dutch-Anglo-Belgian comparisons.[21-23]
The questionnaire covered the following areas (see Chapter 1: Research questions):

Relevant background characteristics
- age and gender of the GP
- years of professional experience
- kind of practice (solo/group/health centre)
- degree of urbanisation of the practice area (inner city, urban, suburban, mixed, rural)

Variables affecting GP's time for the patient
- (prevailing) employment status of the GPs was measured as self-employed with contract with health service or insurance/self-employed without contract /salaried
- regular service hours in main position
- GP's weekly patient related workload: measured as the average number of patient encounters made on practice premises, plus twice the number of home visits, plus half the number of telephone encounters; this weighing procedure was derived from the GP payment contract in the Netherlands.
- establishment of an appointment system for patients
- estimated average of the duration of consultations by appointment (as normally booked in the agenda)
- usual delay between a request for an appointment and the real encounter for persons with non-acute illness

Variables affecting GP's competence
- completion of vocational training in a recognised programme to become a specialist in family medicine or general practitioner in addition to the basic medical training
- face-to-face meetings or discussions with other professionals: GPs, medical specialists, nurses, pharmacists, social workers
- time spent on `keeping up-to-date' by doing postgraduate courses or scientific work or reading professional journals etc.
- professional involvement: member and/or fellow of a College of GPs;
- scientific involvement: teaching general practice medicine to students or junior doctors; involved in a long-term research programme or research project with or without video recordings
- continuing education or postgraduate training. However, the categorization of the educational training appeared to be impossible because many GPs filled in to have followed `many different courses' or they indicated some courses and other courses not. Moreover, the courses that were specified were very different in type and length (if filled in).

Professional working characteristics
- availability of medical equipment (max. 25) used on site in the practice, as laboratory, imaging, functions.
- direct access to specialized laboratory and X-ray facilities (not in the practice) with quick report of results (within 48 hours).

In each of the following four areas, a series of health problems was presented and GPs were asked to describe their involvement on a precoded four-point scale ranging from `(almost) always' to `seldom/never'. (Afterwards, the answer categories were recoded, by which a higher score means a higher involvement).
- application of medical techniques (minor surgical and investigative procedures): a 14 item scale, of which 10 items were used in the analyses, because the answers on 4 items (item 9,10,11 and 14) showed an extreme skewness; Cronbach's alpha=.89; no subscales were identified.
- being the doctor of first contact in health-related matters: 27 items; 4 subscales were identified: health problems with children (Cronbach's alpha=.91), women's health

problems (Cronbach's alpha=.87), psychosocial problems (Cronbach's alpha=.90), acute health problems (Cronbach's alpha= .87)
-   involvement in the management and follow-up of a broad range of acute and chronic diseases: 12 of the 17 items were used, because the answers on the items 2.3.4.8. and 14 were too skewed; no subscales were identified; Cronbach's alpha=.88
-   involvement in preventive medicine and health education: separate items on topics concerning primary and secondary prevention and health education

Professional beliefs and *attitudes*
-   job satisfaction: one scale, 7 items (Cronbach's alpha=.69); 5 answer categories: 1=agree strongly, 5=disagree strongly.
-   attitudes and beliefs about health and health care: 12 items; one scale of 5 items about risk-taking in medical decision making; one scale of 7 items about patient-oriented attitudes (Cronbach's alpha=.65). 5 answer categories: 1=agree strongly, 5=disagree strongly.
-   psychosocial influence on diseases: the degree to which psychosocial factors might influence the onset or acute exacerbation of disorders: one scale, 12 items (Cronbach's alpha=.83); 6 answer categories: 1= to a great extent, 6- not at all.

2.4   Methods of analyses

The significance of the different relationships was calculated as follows:

-   independent (random) samples: 'difference of proportions' or 'difference of means' test
-   means: t-test or (for more than 2 groups) oneway analyses (option Tukey)
-   bivariate analyses: chi square test
-   correlations and interrater reliability: Pearson's correlation coefficient
-   reliability: Cronbach's alpha
-   factor analysis/principal component analysis: eigenvalue and factor loading
-   multivariate (three-level) multilevel analysis: (standardized) regression coefficient

Three-level analysis was used to investigate which characteristics at the levels of the country, GP and patient explained differences in doctor-patient communication, the relevance of communication aspects and the performance perceived by the patients. This analysis accounts for the possible clustering of patients within GP practices, GPs within countries and health care system characteristics within groups of countries.[24,25] Patients of one GP might be, on the average, more alike than those of different GPs, and therefore cannot be considered as completely independent measurements. In this way, the variance at the country, GP and patient level is taken into account.

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3 RESULTS : FREQUENCY DISTRIBUTIONS AND DIFFERENCES BETWEEN COUNTRIES

3.1 Introduction

In this chapter, the frequency distribution of the variables being relevant to doctor-patient communication is presented and shortly discussed. These variables are available at two levels of observation. At the higher level there are characteristics of GPs, at the lower level characteristics of the consultation and the patient, who is present in that consultation. These figures (means, proportions) are presented for each country separately.

First, relevant variables at the GP-level are described, i.e. personal and practice characteristics; variables affecting GP's time for the patient; his or her knowledge of the patient; competence regarding communication; and professional attitudes and beliefs. The variables are derived from the GP-questionnaires.
Next, variables at the consultation and the patient level are considered, i.e. background characteristics of patients; morbidity (reasons for visit and GPs' diagnoses); diagnostics; and treatment (interventions, referrals, health education). These data were collected by means of observation of videotapes of the consultations and patient questionnaires. The final part of this chapter describes the communication variables observed during the consultations.

3.2 GP characteristics

In table 3.1 GPs' personal and practice characteristics are depicted. These figures show that the Spanish GPs were younger than GPs of other countries. Consequently, they have less experience as a GP than the GPs from the Netherlands, Belgium and Switzerland. The Belgian GPs appeared to have the most experience.
As for the GPs' sex, it was shown that the Dutch and Spanish GPs were more often female than the GPs from the other countries, which is due to the sampling method (see 2.1). The Belgian and Swiss GPs were in majority working in a solo-setting, British and Spanish GPs never.
Spanish and British practices were mostly situated in an urbanized area, German practices most often in rural areas.
As a whole, the Spanish Gpswho took part in this study were quite different form the GPs of the other participating European countries. They were younger, had less experience as a GP, were more often female and they worked in a group practice that is located in (sub)urban areas. The Belgian GPs, on the other hand, ha much more experience and work often in a private solo setting.

Table 3.1   GP's personal and practice characteristics

		Countries				
	Neth	UK	Spain	Belg	Germ	Switz
age:						
- mean	45.2 [3]	43.1	38.5 [1,4,5,6]	44.9 [3]	46.2 [3]	47.7 [3]
- st.dev.	7.2	6.9	3.9	6.4	6.7	5.8
years GP:						
- mean	13.4 [3,4]	13.1 [4]	8.5 [1,4,6]	18.4 [1,2,3,5,6]	10.1 [4]	13.2 [3,4]
- st.dev.	6.8	7.2	5.0	5.7	6.3	6.1
% male	48,4 [2,4,5]	85.2 [1,3]	44.4 [2,4,5,6]	74.2 [1,3]	74.4 [1,3]	71.0 [3]
% solo	20.0 [2,3,4,6]	0.0 [1,4,5,6]	0.0 [1,4,5,6]	67.7 [1,2,3,5]	35.9 [2,3,4,6]	61.3 [1,2,3,5]
practice location						
% inner city	20.0 [2,3]	45.8 [1,5,6]	56.0 [1,4,5,6]	22.6 [3]	15.8 [2,3]	12.9 [2,3]
% urban	16.7	12.5	4.0 [4,5,6]	22.6 [3]	21.1 [3]	25.8 [3]
% suburban	33.3	25.0	40.0 [5]	19.4	15.8 [3]	22.6
% urban/rural	20.0 [3]	12.5	0.0 [1,5,6]	12.9	13.2 [3]	19.4 [3]
% rural	10.0 [5]	4.2 [4,5]	0.0 [4,5,6]	22.6 [2,3]	34.2 [1,2,3]	19.4 [3]

P ≤ .05
1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Table 3.2   Variables affecting GPs' time for the patient

		Countries				
	Neth	UK	Spain	Belg	Germ	Switz
% employment:						
- salaried	16.1 [3,6]	16.7 [3,6]	100 [1,2,4,5,6]	12.9 [3,6]	5.4 [3]	0.0 [1,2,3,4]
- self-employed, contr.	80.6 [3,4]	70.8 [3,4]	0.0 [1,2,5,6]	3.2 [1,2,5,6]	94.6 [3,4]	64.5 [3,4]
- self-employed, no contr.	3.2 [4,6]	12.5 [4,6]	0.0 [6]	83.9 [1,2]	0.0	35.5 [1,2,3]
% appointment system	96.8 [4,5]	87.5 [3,4,6]	100.0 [2,4,5]	29.0 [1,2,3,5,6]	68.4 [1,3,4,6]	100.0 [2,4,5]
% seen same day	51.6 [2,6]	8.7 [1,4,5]	26.9 [4,5]	56.0 [2,3]	59.4 [2,3]	12.9 [1]
allocation in minutes:						
- mean	10.3 [3,4,6]	9.5 [3,4,5,6]	4.8 [1,2,3,5,6]	19.3 [1,2,3,5]	12.8 [2,3,4,6]	19.3 [1,2,3,5]
- st.dev.	1.9	0.8	0.7	5.9	3.9	6.8
services hours per week:						
- mean	37.6 [4,5]	37.7 [4,5]	37.2 [4,5]	51.8 [1,2,3,6]	50.7 [1,2,3,6]	43.1 [4,5]
- st.dev.	11.0	9.4	2.0	13.3	9.4	13.0
workload per week[a]:						
- mean	188.6 [5,6]	204.6 [4,5,6]	182.9 [5,6]	149.3 [2,5]	308.6 [1,2,3,4,6]	126.1 [1,2,3,5]
- st.dev.	50.2	69.8	62.7	59.6	64.6	43.8

P ≤ .05
[a] (number of office consultations) + (2 * number of home visits) + (0.5 * number of telephone calls) per week
1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Table 3.2 gives indicators as GP reimbursement and working schedule for the amount of time, a GP could spent to his patients. There was much difference between the GPs in their employment status. In Spain the GPs worked on a salaried basis, in the Netherlands, UK, Germany and Switzerland the large majority was self-employed on a contracted basis. The Belgian GPs were real free entrepreneurs. An appointment system was more or less the rule in most countries, but less common in Germany and largely lacking in Belgium. Yet, the

patients in Belgium often had opportunity to see their doctor on the same day. Correspondingly, the Belgian GPs took most time for the patient, resulting in relatively more service hours. The Spanish GPs could only spend five minutes per patient. The German GPs had a high number of (regular) service-hours and the highest workload by far, the Swiss and Belgium doctors the lowest. Interesting is that a high workload does not go together with a high number of (regular) service hours, like in Belgium and Switzerland.

Table 3.3   Variables related to GPs' competence

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
% voc training finished	90.0 [4,6]	87.5 [4]	92.3 [4,6]	51.6 [1,2,3,5]	86.5 [4]	67.7 [1,3]
% contact > 3 times p.y. with:						
- GPs	100.0	100.0	100.0	93.5	94.7	96.8
- medical specialist(s)	66.7 [2,5,6]	90.9 [1]	84.0 [5]	77.4 [5,6]	100.0 [1,3,4]	96.8 [1,4]
- pharmacist(s)	90.3 [2,3,4,6]	41.7 [1,3]	16.7 [1,2,4,6]	64.5 [1,3]	na	48.4 [1,3]
- nurse(s)	89.3	100.0 [4]	96.2	79.2 [2,6]	na	96.6 [4]
- social worker(s)	64.5	39.1 [3]	84.6 [2,4,6]	46.7 [3]	na	51.6 [3]
hours up-to-date:						
- mean	12.7 [3,5]	14.9 [3]	31.6 [1,2,4,6]	16.8 [3]	23.9 [1]	15.5 [3]
- st.dev.	8.1	13.5	20.0	10.4	20.6	7.5
% professional involved	100.0 [2]	87.5 [1,4,5,6]	100.0	100.0 [2]	100.0 [2]	100.0 [2]
% scientific involved	90.3	95.8	100.0 [6]	96.8	100.0	80.6 [3]
% additional training	93.5 [2,3,5]	68.2 [1,6]	57.9 [1,4,6]	86.7 [3]	68.6 [1,6]	93.5 [2,3,5]

P ≤ .05
na : not available
1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Several factors may affect the competence of GPs. Most of the GPs had finished a vocational training; the Swiss and Belgian GPs were an exception to this rule.
All participating GPs had regularly contact with other GPs. Contacts with medical specialists varied across countries. The German GPs had the most frequent contact with medical specialists, followed by the Swiss and the British. The Dutch GPs had the least regular contacts with medical specialists. On the other hand was their contact with pharmacists much more intensive than that of GPs from the other countries. Regular contact with social work was more common in Spain (and to a lesser degree in the Netherlands) than in the other countries.
The Spanish doctors spent most time in staying up-to-date. The Dutch, Belgian and Swiss GPs spent most time in additional training courses.

Table 3.4   Professional working characteristics

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
equipment:						
- mean	12.3 [3,6]	10.0 [6]	8.7 [1,5,6]	10.8 [6]	11.7 [3,6]	16.3 [1,2,3,4,5]
- st.dev.	3.1	4.1	2.5	2.2	6.1	2.8
% direct access to:						

	Netherlands (1)	UK (2)	Spain (3)	Belgium (4)	Germany (5)	Switzerland (6)
- laboratory facilities	93.5 [3]	100.0 [3,5,6]	66.7 [1,2,4]	96.8 [3,6]	84.8 [2]	76.7 [2,4]
- X-ray facilities	93.5 [5,6]	95.8 [5,6]	92.0 [5,6]	96.8 [5,6]	56.3 [1,2,3,4]	64.3 [1,2,3,4]
medical techniques:						
- mean	2.9 [3,5,6]	3.0 [3,5]	1.8 [1,2,4,6]	2.6 [3,5]	2.1 [1,2,4]	2.5 [1,3]
- st.dev.	0.7	0.4	0.5	0.6	0.6	0.6
treated diseases:						
- mean	2.4 [2,4,5,6]	3.0 [1,3]	2.3 [2,4,5,6]	2.8 [1,3]	3.0 [1,3]	2.9 [1,3]
- st.dev.	0.4	0.5	0.6	0.4	0.4	0.4
first contact:						
for all problems						
- mean	3.5 [4,5,6]	3.5 [4,5,6]	3.3 [5,6]	3.0 [1,2]	2.9 [1,2,3]	2.8 [1,2,3]
- st.dev.	0.3	0.3	0.3	0.4	0.5	0.4
for female problems						
- mean	3.8 [4,5,6]	3.7 [4,5,6]	3.9 [4,5,6]	3.0 [1,2,3,5,6]	2.3 [1,2,3,4]	2.5 [1,2,3,4]
- st.dev.	0.3	0.3	0.3	0.5	0.7	0.7
for psychosocial problems						
- mean	3.5	3.6 [5,6]	3.3	3.1	3.1 [2]	3.1 [2]
- st.dev.	0.4	0.4	0.6	0.6	0.6	0.5
for acute problems						
- mean	3.5 [4]	3.3	3.4	3.1 [1]	3.3	3.3
- st.dev.	0.4	0.5	0.5	0.5	0.5	0.6
% screening for:						
- hypertension	9.7 [2,3,5,6]	62.5 [1,4]	46.2 [1,4,5]	9.7 [2,3,5,6]	76.3 [1,3,4]	38.7 [1,4,5]
- cervix cancer	96.8 [3,4,5,6]	100.0 [3,4,5,6]	57.7 [1,2,5]	38.7 [1,2]	21.1 [1,2,6]	54.8 [1,2,5]
- cholesterol	9.7 [2,3,5,6]	37.5 [1,4,5]	57.7 [1,4]	9.7 [2,3,5,6]	78.9 [1,2,4]	58.1 [1,4]
% health education:						
- smoking	0.0 [3,5]	8.3	19.2 [1]	6.5	16.2 [1]	9.7
- diet	0.0 [3,5,6]	4.2	19.2 [1]	6.5	21.1 [1]	12.9 [1]
- drinking	0.0	8.3	15.4 [1]	6.5	18.9 [1]	6.5

$P \leq .05$

1	Score differs significantly from score of country 1 (Netherlands)
2	Score differs significantly from score of country 2 (United Kingdom)
3	Score differs significantly from score of country 3 (Spain)
4	Score differs significantly from score of country 4 (Belgium)
5	Score differs significantly from score of country 5 (Germany)
6	Score differs significantly from score of country 6 (Switzerland)

The GPs indicated in the questionnaire the number of medical equipments (maximum 25), as hemoglobinometer, blood glucose test set and blood pressure meter (see Appendix 4, p. 4) being used on site in the GPs' practice by GPs or their staff. The Swiss doctors had relatively more equipment themselves, the German (and Dutch) GPs less, and the Spanish GPs had the lowest number of medical equipments.

Access to laboratory facilities was in the Netherlands, UK and Belgium generally better than in Switzerland, Spain and Germany. For X-ray facilities the division was equal, except that the Spanish practices were better equipped as well.

The score for the variables medical techniques, treated diseases and first contact with problems was between 1 and 4 (see paragraph 2.3.4). The higher the score, the more the GPs apply techniques, the more they are more involved in the management of diseases and the more they are the doctor of first contact for different health problems (see Appendix 4, pp. 7, 8, 9, 11). The Dutch, British and Belgian doctors practice more often applied medical techniques, the Spanish and German less often. The British, Belgian, German and Swiss doctors were more involved in the treatment and follow-up of diseases than the Dutch and

Spanish GPs. However, being asked about being the doctor of first contact, the Dutch, British and Spanish doctors claimed this position more than the Belgian, Swiss and German doctors. In this respect, the divide goes along the gate-keeping demarcation line.

Preventive medicine was in most respects frequently done in the UK, Spain, Germany and Switzerland and had a low popularity among the Dutch (except cervix screening) and Belgian GPs. The German doctors were relatively most involved in health education, the Dutch doctors never. It looks as if the Spanish and Belgian GPs more focus on screening and health education and less on medical technical aspects.

Table 3.5   Professional attitudes and beliefs

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
job satisfaction:						
- mean	3.5	3.8 [3,4,5]	3.3 [2,6]	3.3 [2,6]	3.2 [2,6]	3.9 [3,4,5]
- st.dev.	0.5	0.5	0.7	0.6	0.6	0.6
risk taking:						
- mean	3.1 [5]	3.2 [5]	2.8	2.8 [5]	2.3 [1,2,4]	2.6
- st.dev.	0.5	0.7	0.8	0.8	0.7	0.6
patient orientation:						
- mean	3.5	3.7	3.7	3.5	3.6	3.8
- st.dev.	0.3	0.5	0.4	0.5	0.4	0.4
psych. influence on diseases:						
- mean	2.5 [5]	2.6 [5]	2.2	2.4 [5]	2.0 [1,2,4]	2.2
- st.dev.	0.6	0.6	0.5	0.4	0.6	0.5

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Job satisfaction was highest in the UK and Switzerland, lowest in Spain, Belgium and Germany.

The German GPs said to avoid taking risks with the patient (waiting, no immediate treatment), more than in the Netherlands, UK and Belgium. In the same countries, there was a difference between a high belief in possible psychological influences on diseases (the Netherlands etc.) and a low belief (Germany).

Table 3.6   GPs' knowledge of patients

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
number of years patient with the GP:						
- mean	7.5 [2,4]	10.1 [1,3,5,6]	7.3 [2,4]	9.9 [1,3,5,6]	7.5 [2,4]	6.9 [2,4]
- st.dev.	6.9	8.9	10.1	6.6	7.4	6.0
number of contacts during the last year:						
- mean	6.4 [2,3,5]	14.5 [1,3,4,5,6]	10.8 [1,2,4,6]	7.3 [2,3,5]	11.9 [1,2,4,6]	7.9 [2,3,5]
- st.dev.	11.1	18.3	15.5	8.3	13.0	9.3
knowing the patient:						
- mean	3.3 [4,5,6]	3.4 [4,6]	3.5 [4,6]	3.8 [1,2,3]	3.6 [1]	3.7 [1,2,3]
- st.dev.	1.3	1.4	1.4	1.1	1.3	1.2

$P \leq .05$

1	Score differs significantly from score of country 1 (Netherlands)
2	Score differs significantly from score of country 2 (United Kingdom)
3	Score differs significantly from score of country 3 (Spain)
4	Score differs significantly from score of country 4 (Belgium)
5	Score differs significantly from score of country 5 (Germany)
6	Score differs significantly from score of country 6 (Switzerland)

Consultations collected in the UK and Belgium were with patients who have been longer listed with their GP than consultations in the other four countries. Possibly, these GPs have answered the question on `the number of years with the GP' as '... with the practice'.The number of contacts during the last year of the patients from the UK was than in the other countries. Next came the Spanish and German patients and last patients from the Netherlands, Belgium and Switzerland, who had on the average half the number of consultations than the British ones.

However, the patients from the gatekeeping countries with fixed lists of patients were not better known by their GP. As a matter of fact, the Dutch, British and Spanish patients were less well known than the Belgium, German and Swiss patients.

Table 3.7   GPs' evaluation of his/her own performance

evaluation of:	Neth	UK	Spain	Belg	Germ	Switz
			Countries			
medical performance:						
- mean	7.6 [2,3,5,6]	6.8 [1,4,5,6]	7.0 [1,4,5,6]	7.5 [2,3,6]	7.3 [1,2,3,6]	8.0 [1,2,3,4,5]
- st.dev.	1.3	1.6	1.7	1.6	2.0	1.5
psychological performance:						
- mean	7.2 [2,3,5]	6.2 [1,4,5,6]	6.3 [1,4,5,6]	7.3 [2,3,5]	6.6 [1,2,3,5,6]	7.4 [2,3,5]
- st.dev.	1.3	1.8	2.1	1.5	2.4	1.9
doctor-patient relationship:						
- mean	7.6 [2,4,6]	7.2 [1,3,4,5,6]	7.6 [2,4,6]	8.1 [1,2,3,5]	7.8 [2,4,6]	8.3 [1,2,3,5]
- st.dev.	1.2	1.5	1.5	1.3	1.9	1.6

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

In their own eyes, the Swiss doctors stood on top, regarding their performance, be it medical, psychological or in doctor-patient relationship. The British doctor was the most modest one. In medical and psychological respect, the Swiss were followed by the Dutch, Belgian, German and Spanish doctors. With respect to the doctor-patient relationship, the Dutch doctors evaluated themselves somewhat lower than the other doctors.

Conclusions
In some respects, the GPs from the different countries differed among each others according to our assumptions. Employment status of the GPs from the different countries was known beforehand. Task-perception as indicated by the degree in which one considers him/herself the doctor of first contact, coincided with a gate-keeping function, as expected. The finding that the doctors, working as a gatekeeper, allowed more risks to be taken can be explained as a typical primary care attitude (do not undertake action unless ....) as opposed to a more specialistic attitude (treat, unless ....), as shown for instance by the German GPs.
Contrary to our expectations was the finding that the GPs from the not-gatekeeping countries claimed to know their patients better than the GPs from the gatekeeping countries, with their fixed lists.
Apparently, the patients of the non-gatekeeping GPs did not act as assumed, i.e. looking for another GP if they are not satisfied about their GP or if they should want a second opinion. Probably, most patients are satisfied and stay with their doctor, or they still return to their own doctor after having got a second opinion, because they are used to this doctor.

In other respects, considered important for doctor-patient communication, differences between countries run were across health care system characteristics. We should take into account the over representation of British and Spanish large city practices as opposed to the mostly rural background of German practices. For, it is known that rural practices provide more comprehensive services than city practices. The differences in time spent with the patient between Belgium and Switzerland at the one hand, Spain at the other extreme, and the other three countries in between must be acknowledged. Health care policies in the different countries should aim at a good quality of care, including appropriate time for the patient. The strong emphasis on prevention in the UK, Spain, Germany and Switzerland as

opposed to the Netherlands and Belgium may influence the content of the communication. This could be visible in the actual doctor-patient communication. Finally, concerning opportunities for building skills and competence the Belgian and Swiss GPs might be disadvantaged compared with the other countries. However, the lower degree of vocational training may be a consequence of the higher proportion of older GPs who were educated before the vocational training was present.

3.3 Patient background characteristics

Table 3.8   Patients' personal characteristics

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
age:						
- mean	40.4 [2,3,5,6]	47.8 [1,4]	46.2 [1]	43.3 [2,6]	44.8 [1,6]	48.2 [1,4,5]
- st.dev.	21.4	18.3	19.4	21.4	20.9	19.8
% male	38.5 [3,4,5]	44.4 [3]	31.5 [1,2,4,5,6]	44.3 [1,3]	44.2 [1,3]	40.8 [3]
% living situation:						
living alone	23.7 [3,5]	23.4 [3,5]	12.7 [1,2,4,6]	19.2 [3,5,6]	13.3 [1,2,4,6]	24.6 [3,4,5]
living with:						
- partner	72.0 [3,5,6]	72.9 [3,5]	62.0 [1,2,4,6]	75.0 [3,5]	62.6 [1,3,4,6]	78.4 [1,3,5]
- children	27.5 [3,5]	27.1 [3,5]	48.7 [1,2,4,5,6]	32.1 [3]	32.4 [1,2,3]	30.8 [3]
- parents or others	15.3 [5]	12.6 [5]	n.a.	15.1 [5]	20.5 [1,2,4,6]	14.8 [5]
% employed (≥18)	49.5 [3,4,5]	52.8 [4,5]	35.4 [1,5]	44.1 [1,2,5]	49.0 [1,2,3,4,6]	52.8 [1,5]
% educ. level (≥18)						
- low	16.7 [2,3,4,5,6]	5.7 [1,3,4,5,6]	63.6 [1,2,4,5,6]	28.7 [1,2,3,5]	49.1 [1,2,3,4,6]	28.5 [2,3,5]
- middle	54.3 [3,4,5]	54.5 [3,4,5]	19.2 [1,2,4,5,6]	41.9 [1,2,3,5,6]	31.2 [1,2,3,4,6]	60.1 [3,4,5]
- high	29.0 [2,3,5,6]	39.7 [1,3,4,5,6]	17.2 [1,2,4,6]	29.3 [2,3,5,6]	19.7 [1,2,4,6]	11.3 [1,2,3,4,5]

$P \leq .05$
n.a.: not available

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

The average patient in the Dutch sample was younger than in most other countries. The Swiss and British patients were the oldest, but this is due to the lacking of patient younger than 18 years. If a selection is made for patients of 18 years and older (not shown in the table), the differences are levelled out, with the mean age between 46.7 years (Netherlands) and 49.7 years (Switzerland and Germany). Although in each country women were a majority among the patients, this over representation was strongest in Spain and the Netherlands. In the United Kingdom and Germany more than half of the patients (aged 18 years and older) were employed, in the Netherlands, Germany and Belgium somewhat less and in Spain one third. In Spain and - to a lesser extent - in Germany relatively many patients (aged 18 years and older) had a low educational level, whereas in Belgium and the Netherlands more patients had finished university or a higher vocational training. The figures of the United Kingdom are probably biassed for the high educational level, because some patients may

have interpreted the `higher vocational training' as `vocational training' (the middle category).

results

Table 3.9   Patients' health status and general health perception

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
physical fitness:						
- mean	2.3 [2,3,4,5,6]	3.0 [1,4,5,6]	3.0 [1,4,5,6]	2.6 [1,2,3]	2.7 [1,2,3]	2.7 [1,2,3]
- st.dev.	1.3	1.2	1.2	1.2	1.2	1.2
feelings:						
- mean	2.2 [2,6]	2.6 [1,3,4,5]	2.3 [2]	2.3 [2]	2.4 [2]	2,5 [1]
- st.dev.	1.3	1.3	1.3	1.3	1.2	1.3
daily activities:						
- mean	2.2	2.3	2.2	2.1 [6]	2.2	2,3 [4]
- st.dev.	1.2	1.2	1.3	1.1	1.1	1.2
social activities:						
- mean	1.8 [2,3]	2.1 [1,3,4,5,6]	1.6 [1,2,6]	1.7 [2]	1.7 [2]	1.8 [2,3]
- st.dev.	1.1	1.3	1.0	1.0	1.7	1.1
change in health:						
- mean	3.0 [6]	3.1 [6]	3.0 [6]	3.1 [6]	3.0 [6]	2.8 [1,2,3,4,5]
- st.dev.	0.9	0.9	0.9	1.0	1.1	1.1
overall health:						
- mean	3.1 [2,3,4]	3.3 [1,4,6]	3.4 [1,4,5,6]	3.0 [1,2,3,5]	3.2 [3,4,6]	3.0 [2,3,5]
- st.dev.	1.0	1.1	0.9	1.0	0.9	0.9
pain:						
- mean	2.7 [2,3]	3.0 [1,4]	3.0 [1,4]	2.7 [2,3]	2.8	2.9
- st.dev.	1.4	1.4	1.4	1.3	1.4	1.3

P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Be careful: the lower the score on the health status and health perception variables, the better the functional status and health perception. In this table, only data of patients of 18 years and older were included. Differences in health status were marginal. The Dutch patients reported relatively better physical fitness than all the other patients. On most other scales they were in relatively good shape as well. The British and Spanish patients had relatively the worst scores in most aspects. The Belgian, German and Swiss patients were somehow in between.

Conclusions
Differences in patient background characteristics were not very exceptional, although differences in patients with a high educational level (more in the Netherlands and Belgium than in the other countries) may have influenced doctor-patient communication. Likewise, the greater percentage of female patients in Spain should be kept in mind when results are interpreted. The somewhat worse health status of the British and Spanish patients might be a reflection of the over representation of large city practices in these countries.

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3.4 Presented morbidity and treatment

Table 3.10   Patients' health problems[1]

Problems	Neth		UK		Spain		Belg		Germ		Switz	
general/unspecified	7.9	[2,3,4,5,6]	13.7	[1,3,5]	33.0	[1,2,4,5,6]	13.1	[1,3,5]	5.1	[1,2,3,4,6]	13.4	[1,3,5]
blood	0.6	[4,5,6]	1.1	[5,6]	1.3	[5,6]	2.7	[1,6]	3.7	[1,2,3]	4.9	[1,2,3,4]
digestive	7.2		5.7		5.3	[5]	7.0		8.1	[3,6]	5.2	[5]
eye	1.6		2.3	[4,5,6]	1.3		0.7	[2]	0.6	[2]	0.7	[2]
ear	3.8	[3,4,6]	3.1		1.5	[1]	1.8	[1]	2.2		1.4	[1]
circulatory	6.7	[4,5,6]	5.7	[4,5,6]	7.7	[4,5,6]	12.9	[1,2,3]	14.1	[1,2,3]	11.9	[1,2,3]
musculoskeletal	17.5	[5]	18.2	[5]	14.6	[5,6]	17.1	[5]	23.2	[1,2,3,4]	20.4	[3]
neurological	6.3	[2,3,4]	2.0	[1,5,6]	1.8	[1,5,6]	3.6	[1]	5.4	[2,3]	4.2	[2,3]
psychological	5.3	[2,5]	8.8	[1,3,4,5]	4.2	[2,6]	3.5	[2,6]	3.2	[1,2,6]	7.8	[3,4,5]
respiratory	17.8	[6]	17.9	[6]	15.8		19.0	[6]	16.9		13.4	[1,2,4]
skin	11.0	[2,3,4,5,6]	5.1	[1]	3.3	[1,5]	5.1	[1,5]	7.7	[1,3,4,6]	4.2	[1,5]
endocrine/metabolic	3.0	[4,5,6]	4.0		3.2	[4,5,6]	5.9	[1,3]	5.9	[1,3]	6.1	[1,3]
urology	1.6		1.1	[1,8]	1.6		1.7		1.1			
pregnancy/family planning	2.6	[3,5,6]	4.0	[3,5,6]	0.4	[1,2,4]	2.0	[3,5]	0.1	[1,2,4,6]	1,0	[1,2,5]
female genital system	5.8	[3,4,5,6]	5.7	[3,4,5,6]	1.4	[1,2]	2.7	[1,2,5]	0.6	[1,2,4,6]	2,3	[1,2,5]
male genital system	0.4		0.9		0.0		0.7		0.3		0,3	
social	1.0	[3]	0.6	[3]	3.5	[1,2,5,6]	0.5		1.1	[3]	1,4	[3]
Total (n)	810		351		854		811		1093		900	

[1] % of the total of health problems

P ≤ .05

1	Score differs significantly from score of country 1 (Netherlands)
2	Score differs significantly from score of country 2 (United Kingdom)
3	Score differs significantly from score of country 3 (Spain)
4	Score differs significantly from score of country 4 (Belgium)
5	Score differs significantly from score of country 5 (Germany)
6	Score differs significantly from score of country 6 (Switzerland)

The problems reported by the patients themselves in the questionnaire (table 3.10) and diagnoses of the GPs (table 3.11) are categorized in the chapters of the International Classification for Primary Care. The figures presented in the tables are the percentages of the total of health problems per country. Maximum 3 problems per patients were registered. Relatively many problems of the Spanish patients were coded within the category "General, unspecified". This includes general pain, fever, feeling sick etc, and also problems that were unspecified, by which it was impossible to categorize them in one of the other 16 chapters. Reasons for visit because of the circulatory system were found more frequently in Belgium, Germany and Switzerland than in the Netherlands, UK or Spain. Musculoskeletal problems were relatively often presented in Germany and Switzerland. Psychological problems were presented relatively often in the UK and Switzerland. Skin problems were frequently reported in the Netherlands. The Netherlands and the UK also showed an over representation of pregnancy/family planning and female genital reasons for visit. Social problems were most often seen in Spain. Diagnoses of the GPs largely accorded with the reasons for visit presented by the patients.

Table 3.11   GPs' diagnoses[1]

	Countries					
Problems	Neth	UK	Spain	Belg	Germ	Switz
general/unspecified	7.3 [3,4,5,6]	10.6 [3,5,6]	32.1 [1,2,4,5,6]	13.4 [1,3,5,6]	6.5 [2,3,4]	7.1 [2,3,4]
blood	0.9 [6]	1.4 [6]	1.6 [6]	1.8	1.0 [6]	3.6 [1,2,3,5]
digestive	5.7	6.2	3.6 [4,5]	7.9 [3,6]	6.6 [3]	4.9 [4]
eye	2.2 [5]	1.9 [5]	0.8	0.9	0.6 [1,2]	0.8
ear	3.3 [3,6]	2.3	0.8 [1]	1.9	1.9	1.2 [1]
circulatory	8.1 [5]	7.4 [5,6]	8.0 [5]	10.5 [5]	14.4 [1,2,3,4]	11.1 [2]
musculoskeletal	14.8 [3,5]	14.1 [5]	10.4 [1,5,6]	13.1 [5]	19.6 [1,2,3,4]	16.6 [3]
neurological	3.6 [3]	2.6	1.3 [1,5,6]	2.7	4.1 [3]	3.2 [3]
psychological	8.7 [2,6]	16.6 [1,3,4,5]	6.6 [2,5,6]	5.9 [2,5,6]	11.4 [2,3,4]	14.8 [1,3,4]
respiratory	15.6 [5,6]	12.4 [4]	15.3 [5,6]	18.8 [2,5,6]	11.0 [1,3,4]	10.8 [1,3,4]
skin	10.5 [2,3,4,6]	6.5 [1]	5.2 [1]	6.9 [1]	7.9	5.5 [1]
endocrine/metabolic	3.0 [4,5,6]	3.6 [4,5,6]	3.8 [4,5]	6.5 [1,2,3]	8.8 [1,2,3]	6.3 [1,2]
urology	1.4	2.2	1.7	1.6	1.3	1.5
pregnancy/family planning	3.2 [3,5]	3.2 [3,5]	0.6 [1,2,4,5]	2.3 [3,5]	0.0 [1,2,3,4,6]	1.6 [5]
female genital system	7.2 [2,3,4,5,6]	3.4 [1,5]	1.7 [1]	2.8 [1,2,5]	0.9 [1,2,4,6]	2.4 [1,5]
male genital system	0.6	0.8	0.2	0.9	0.5	0.4
social	3.7 [3,6]	4.9 [4,6]	6.3 [1,4,5]	2.3 [2,3,6]	3.4 [3,6]	8.2 [1,2,4,5]
Total (n)	961	775	924	927	1279	1274

[1] % of the total of health problems

P $\leq$ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

The figures in the tables 3.12 - 3.19 were derived from those consultations that were used for the observation study i.e. 15 per GP. Therefore, the totals differ from tables 3.10 and 3.11 presenting data of 20 patients per GP on the average. Because of missing data the totals of the tables may differ as well. The analyses were done at the level of health problems.

Diagnostic procedures (table 3.12) were rather common in the Netherlands, Belgium and Germany (± 2/3 of the consultations) and less in Switzerland (in half of the consultations), and in Spain and the UK (1/3 of the consultations). Most diagnostics were done within the own practice, in the three non-gatekeeping countries only rarely elsewhere. The very high percentage in Switzerland agreed with the high number of medical equipments (table 3.4).

Table 3.12   Content of the consultation: diagnostic procedures

	Neth	UK	Spain	Belg	Germ	Switz
% diagnostic procedure(s) diagn. proc.[1]:	68.5 [2,3,6]	35.0 [1,4,5,6]	37.9 [1,4,5,6]	73.3 [2,3,6]	69.0 [2,3]	52.6 [1,2,3,4]
- in own practice	96.4 [2,3,4,5]	88.1 [1,3,4,6]	92.0 [1,2,5]	92.5 [1,2,5,6]	85.4 [1,3,4,6]	97.1 [2,4,5]
- elsewhere	12.0 [2,4,5,6]	16.7 [1,3,4,5,6]	10.1 [2,4,5,6]	2.4 [1,2,3]	3.4 [1,2,3]	2.7 [1,2,3]
Total (n)	644	717	393	619	1237	839
% diagnostic procedures in own practice:						
- urine	0.9	4.4	0.0	1.5	5.2	1.9
- blood test	0.5	6.3	0.6	4.2	14.7	9.7
- smear	3.0	1.1	0.0	1.2	0.3	0.3
- spec physical exam	69.7	25.1	44.3	17.3	0.0	33.3
- X-ray	0.0	0.0	0.6	0.2	0.0	1.5
- ultrasound	0.0	0.0	0.0	0.6	0.8	0.3
- other X	0.0	0.0	0.0	0.0	0.3	0.2
- allergy patch/skin test	1.4	1.5	0.0	1.5	0.8	2.2
- ECG	0.0	0.0	0.0	1.2	3.5	1.4
- eye test	0.5	3.7	1.2	1.1	0.5	1.0
- ear test	1.6	5.2	3.6	7.4	1.9	2.2
- blood pressure	18.0	20.7	41.9	27.2	24.7	21.4
- weight	1.4	2.2	3.0	8.0	1.6	6.8
- pregnancy test	0.2	0.4	0.0	0.0	0.0	0.2
- heart auscultation	0.5	0.7	0.0	4.7	0.0	8.5
- lung auscultation	1.2	1.1	0.0	8.3	0.0	7.0
- other	1.2	27.7	4.8	15.9	45.7	2.2
Total (n)	433	271	167	666	368	589

[1] the total adds up to more than 100% because more than one answer was possible

P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Instrumental treatment (table 3.11) was an exception in the GP-consultations in all six countries (in general, more than 90% of the consultations were without any instrumental treatment). It happened relatively more often in Belgium, Germany and Switzerland than in the Netherlands, UK and Spain.

Table 3.13   Content of the consultation: instrumental treatments

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
% instrumental treatment(s)	3.3 [3,4,5,6]	2,1 [3,4,5,6]	0,5 [1,2,4,5,6]	11,7 [1,2,3,5,6]	8,2 [1,2,3,4]	6,5 [1,2,3,4]
Total (n) health problems	644	719	393	588	1196	825
% type of treatments :						
- injection	15.0	58.8	0.0	30.9	42.9	25.5
- syringing ear	15.0	0.0	100.0	4.4	2.0	5.5
- wound care	10.0	0.0	0.0	17.6	6.1	20.0
- minor surgery	25.0	0.0	0.0	10.3	3.1	7.3
- bandaging/taping/resetting	25.0	0.0	0.0	7.4	10.2	20.0
- catheteration	0.0	5.9	0.0	0.0	0.0	0.0
- IUD	5.0	0.0	0.0	0.0	0.0	0.0
- vaccination	0.0	23.5	0.0	25.0	8.2	12.7
- blood taking	0.0	0.0	0.0	1.5	27.6	0.0
- other	5.0	11.8	0.0	2.9	0.0	9.1
Total (n) instr.treatments	20	17	1	68	98	55

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Prescriptions were less often given by the Dutch GPs than by the other GPs, whereas the Belgian doctors by far prescribed the most medicines to their patients (table 3.14).
The most referrals were observed in Spain, i.e. 30% of the patients. The other countries hardly differed in this respect; on the average, about 10 % of their patients got a referral. In all countries more referrals were given to secondary care (medical specialists) than to primary care givers as physiotherapists. This applied to new referrals especially.

Table 3.14   Content of the consultation: prescriptions and referrals

	Neth	UK	Spain	Belg	Germ	Switz
			Countries			
% prescriptions	33.5 [3,4,5]	38.7 [3,4,5]	46.5 [1,2,4,6]	60.7 [1,2,3,5,6]	42.8 [1,2,4]	37.9 [3,4]
% no referral	86.1 [2,3]	90.8 [1,3,6]	70.3 [1,2,4,5,6]	89.2 [3]	89.8 [3]	85.7 [2,3]
% referral primary care	5.7 [2,3,4]	2.4 [1,3,6]	10.2 [1,2,4,5,6]	1.8 [1,3,5,6]	3.6 [3,4]	5.6 [2,3,4]
% referral secund.care	7.6 [3]	5.8 [3]	17.9 [1,2,4,5,6]	6.2 [3]	5.6 [3]	7.4 [3]
% type of new referral:						
- primary care	34.5 [2,4,5,6]	23.4 [1,3,4,6]	30.6 [2,4]	16.1 [1,2,3,5,6]	28.1 [1,4]	29.1 [1,2,4]
- secondary care	49.4 [4,6]	54.7 [3,5,6]	47.7 [2,4,6]	56.5 [1,3,5,6]	48.8 [2,4,6]	37.6 [1,2,3,4,5]
Total (n)	631	718	391	609	1234	835

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Patient education (table 3.15) was given most frequently in Spain, then in the Netherlands and Switzerland, and least frequently in Belgium, Germany and the UK. This is not according to GPs' self-report, as shown in table 3.4. In the observed reality, the situation in the Netherlands and Switzerland was better, in Germany worse than the described reality. Diet and sport were in the Netherlands and Switzerland the most important health education topic; safety was little discussed in the Netherlands but frequently in the UK, Spain and Belgium. Possibly, health education was assumed as giving advice to patients about specific issue, as safety issues, related to the treatment of the health problems presented by the patient, which is not meant with health education.

Table 3.15   Content of the consultation: patient education

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
health education (%)	24.5 [2,3,5]	17.2 [1,3,6]	35.5 [1,2,4,5,6]	21.7 [3]	19.6 [1,3,6]	24.2 [2,3,5]
type of health education[1]:						
- food	38.0 [2,3,4,5,6]	13.0 [1,3,4,6]	50.0 [1,2,4,5,6]	31.5 [1,2,3,5]	10.5 [1,3,4,6]	28.1 [1,2,3,5]
- alcohol	12.0 [2,3,4]	4.1 [1,5]	5.9 [1,4,5,6]	2.4 [1,3]	0.1 [1,2,3,4,6]	3.0 [1,3,5]
- smoking	19.6 [2,4,5,6]	13.0 [1,3,4,5,6]	19.1 [2,4,5,6]	9.4 [1,2,3,5]	0.7 [1,2,3,4,6]	7.5 [1,2,3,5]
- safety	7.6 [2,3,4,5,6]	22.8 [1,4,5,6]	25.7 [1,4,6]	28.3 [1,2,5,6]	1.7 [1,2,3,4,6]	13.6 [1,2,3,4,5]
- sport	38.0 [2,3,4,5,6]	8.9 [1,3,4,6]	14.7 [1,2,5,6]	15.7 [1,2,5,6]	6.3 [1,3,4,6]	27.1 [1,2,3,4,5]
- other	20.9 [2,3,5,6]	54.5 [1,3,4,5,6]	8.8 [1,2,4,5,6]	22.0 [2,3,5,6]	13.4 [1,2,3,4,6]	29.6 [1,2,3,4,5]
Total (n)	645	716	391	614	1237	825

[1] the total adds up to more than 100% because more than one answer was possible

$P \leq .05$

1	Score differs significantly from score of country 1 (Netherlands)
2	Score differs significantly from score of country 2 (United Kingdom)
3	Score differs significantly from score of country 3 (Spain)
4	Score differs significantly from score of country 4 (Belgium)
5	Score differs significantly from score of country 5 (Germany)
6	Score differs significantly from score of country 6 (Switzerland)

Conclusion

In all countries, the majority of presented morbidity were somatic problems. The countries differed a lot with respect to the presented morbidity. In Spain, for instance, specific somatic problems were relatively scarce, to which the over representation of unspecified health problems in Spain is probably related. The vast majority of health problems was treated by the GPs themselves in each country and instrumental treatment is nowhere prominent. Communication was everywhere one of the major things a GP has to offer. All in all, consultations in the UK seemed the most `empty': few diagnostic procedures, few instrumental treatments, hardly any referral and the lowest score on health education. In Spain the GP was instrumentally reluctant as well: hardly any instrumental treatment nor much diagnostic procedures. The Spanish GP frequently called upon the specialist services and dis a lot health education. The Belgian and German GPs were relatively the most instrumental: they combine relatively many diagnostic procedures with the highest score on instrumental treatment low scores on referral and relatively low scores on patient education. The Dutch and Swiss doctors were a little in between. The Dutch were comparable with the German and Belgium doctors as diagnostics are concerned, the Swiss more with the Spanish and British. Concerning instrumental treatment the roles were changed. They both have slightly higher scores on referral than the German, Belgian and English GPs and they both had relatively high scores on patient education.

3.5 Doctor-patient communication

In table 3.16a and 3.16b the communication process is characterized by the distribution of RIAS-categories in different countries. Fifteen consultations of each participating GP were rated, excepted for the United Kingdom; consultations of 24 instead of 27 English GPs were included in the observation study. The figures are the percentages of the total count of utterances. Looking at the main division between affective and instrumental behaviour on the side of the GP, consultations in the Netherlands, Spain and especially Belgium were the most instrumentally oriented, characterized by providing more medical information. Consultations in the UK were the most affective. Germany and Switzerland took a position between both. This tendency was replicated by the patients in these countries, in which case the German and Swiss patients surpassed the British ones in affect.

More in detail: there were not so many differences between the countries. The British GPs earned their first place in affective behaviour largely by much agreeing (agreements are for the greater part back channel responses as 'hm'), social behaviour (jokes etc.) and reassurance. The German and Swiss GPs agreed a lot as well, the German GPs scored high on verbal attention (showing empathy and partnership, legitimising), the Swiss GPs on reassurance.

Table 3.16a Affective and instrumental behaviour of GPs (%)[1]

	Neth	UK	Spain	Belg	Germ	Switz
affective behaviour:						
- social behaviour	7.0 [2,3,4]	9.3 [1,5,6]	8.7 [1,5,6]	9.2 [1,5,6]	6.7 [2,3,4]	7.2 [2,3,4]
- agreement	13.9 [2,3,5,6]	21.7 [1,3,4,5,6]	10.6 [1,2,4,5,6]	12.7 [2,3,5,6]	15.7 [1,2,3,4]	17.0 [1,2,3,4]
- paraphrase	9.7 [2,4,5,6]	7.3 [1,3,4,5]	9.8 [2,4,5,6]	4.3 [1,2,3,5,6]	6.3 [1,2,3,4]	7.1 [1,3,4]
- verbal attention	1.1 [5,6]	1.3 [4,5]	0.9 [5,6]	0.6 [2,5,6]	4.2 [1,2,3,4,6]	1.8 [1,3,4,5]
- showing concern	0.5 [3,6]	0.3 [6]	0.1 [1,4,5,6]	0.4 [3,6]	0.5 [3,6]	1.0 [1,2,3,4,5]
- reassurance	1.3 [2,5,6]	2.6 [1,3,4,5,6]	0.9 [2,4,5,6]	1.7 [2,3,6]	2.0 [1,2,3,6]	3.1 [1,2,3,4,5]
- disagreement	0.0 [3,5,6]	0.2 [3,5,6]	0.5 [1,2,4]	0.2 [3,5,6]	0.5 [1,2,4]	0.5 [1,2,4]
Total affective beh.	33.5	42.7	31.5	29.1	35.9	37.7
instrumental behaviour:						
- giving directions	10.8 [2,5,6]	8.3 [1,3,4,5]	10.0 [2,5]	11.1 [2,5,6]	12.4 [1,2,3,4,6]	9.4 [1,4,5]
- asking clarification	1.7 [2,3,4,5]	2.3 [1,3,4,5,6]	3.9 [1,3,4,5,6]	0.7 [1,2,3,5,6]	2.9 [1,2,3,4,6]	1.4 [2,3,4,5]
asks questions:						
- medical/therapeutical	7.6 [3,4,5,6]	7.2 [3,4,5,6]	12.7 [1,2,4,5,6]	10.6 [1,2,3]	9.9 [1,2,3]	9.8 [1,2,3]
- lifestyle/psychosocial	2.6 [2,3,4,5,6]	4.0 [1,3]	5.7 [1,2,4,5,6]	4.1 [1,3]	3.8 [1,3,6]	4.7 [1,3,5]
gives information:						
- medical/therapeutical	27.0 [2,3,5,6]	20.3 [1,4]	21.6 [1,4]	26.5 [2,3,5,6]	21.2 [1,4]	22.0 [1,4]
- lifestyle/psychosocial	5.1 [2,4,5]	3.4 [1,3,4]	5.4 [2,5]	6.5 [1,2,5,6]	2.2 [1,3,4,6]	4,6 [4,5]
counsels:						
- medical/therapeutical	7.5 [2,3,4,6]	5.5 [1,4,5]	5.1 [1,4,5]	3.5 [1,2,3,5]	8.1 [2,3,4,6]	4.4 [1,5]
- lifestyle/psychosocial	0.8 [3,5,6]	1.1 [3,5]	1.8 [1,2,4]	0.7 [3,5,6]	1.8 [1,2,4]	1.5 [1,4]
other utterances	3.4 [3,4,5,6]	5.2 [1,3,4,5]	2.2 [1,2,4,6]	7.0 [1,2,3,5,6]	1.6 [1,2,4,6]	4.5 [1,3,4,5]
Total instrumental beh.	66.5	57.3	68.5	70.9	64.1	62.3

[1] % relative to the total count of utterances
P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

At the patient side, the same patterns could be discerned. Much agreement by the British, German and Swiss patients. The Swiss and German patients showed slightly more disagreement too. Much information was given by the Dutch and Spanish patients. All patients asked only few questions to their GPs.

Table 3.16b Affective and instrumental behaviour of patients (%)[1]

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
affective behaviour:						
- social behaviour	7.7 [2,3,4,6]	9.8 [1,5]	10.7 [1,5]	9.6 [1,5]	8.0 [2,3,4,6]	9.9 [1,5]
- agreement	14.0 [2,5,6]	22.3 [1,3,4]	13.3 [2,4,5,6]	15.8 [2,3,5,6]	21.5 [1,3,4]	22.0 [1,3,4]
- paraphrase	2.2	2.4 [4]	2.4 [4]	1.9 [2,3]	2.0	2.1
- verbal attention	0.0 [5]	0.0 [5]	0.0 [5]	0.0 [5]	0.3 [1,2,3,4,6]	0.1 [5]
- showing concern	1.2 [3,4,5,6]	1.8 [3,4,5]	3.1 [1,2,4,6]	0.6 [1,2,3,5,6]	3.1 [1,2,4,6]	1.8 [1,3,4,5]
- reassurance	0.2 [2,3,5,6]	0.9 [1,4,5]	0.6 [1,5,6]	0.4 [2,5,6]	1.5 [1,2,3,4,6]	1.1 [1,3,4,5]
- disagreement	0.1 [3,5,6]	0.3 [5,6]	0.5 [1,5,6]	0.2 [5,6]	1.0 [1,2,3,4]	1.2 [1,2,3,4]
Total affective beh.	25.4	37	30.6	28.5	37.4	38.2
instrumental behaviour:						
- giving directions	1.7 [2,3,4,5,6]	1.0 [1,4,6]	1.0 [1,4,6]	0.6 [1,2,3]	0.8 [1,2,3]	0.6 [1,2,3]
- asking clarification	0.8 [2,4,6]	1.2 [1,3,4,5,6]	0.8 [2,4,6]	0.4 [1,2,3]	0.6 [2]	0.4 [1,2,3]
asks questions:						
- medical/therapeutical	3.7 [6]	3.1 [3,4,5]	4.0 [2,6]	4.0 [2,6]	4.2 [2,6]	2.8 [1,3,4,5]
- lifestyle/psychosocial	0.4 [3,4]	0.4 [3,4]	1.2 [1,2,5,6]	1.3 [1,2,5,6]	0.5 [3,4]	0.3 [3,4]
gives information:						
- medical/therapeutical	47.3 [2,3,4,5,6]	31.2 [1,3,4,5]	42.0 [1,2,4,5,6]	34.8 [1,2,3,6]	36.5 [1,2,3,6]	30.9 [1,3,4,5]
- lifestyle/psychosocial	17.2 [4,6]	19.8	18.1	21.3 [1,5]	17.7 [4,6]	21.1 [1,5]
other utterances	3.2 [2,4,5,6]	5.1 [1,3,4,5]	2.5 [2,4,6]	7.6 [1,2,3,5,6]	2.1 [1,2,4,6]	5.3 [1,3,4,5]
Total instrumental beh.	74.6	63.0	69.4	71.5	62.6	61.8

[1] % relative to the total count of utterances

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Table 3.17 Nonverbal behaviour: GPs' and patients' affect ratings

	Neth	UK	Spain	Belg	Germ	Switz
			Countries			
GPs' affect ratings						
anger/irritation:						
- mean	1.0 [5,6]	1.1 [5,6]	1.1 [5,6]	1.0 [5,6]	1.5 [1,2,3,4,6]	1.2 [1,2,3,4,5]
- st.dev.	0.1	0.3	0.2	0.3	0.7	0.6
anxiety/nervousness:						
- mean	1.1 [5]	1.0 [5,6]	1.0 [5,6]	1.1 [5]	1.7 [1,2,3,4,6]	1.2 [3,5]
- st.dev.	0.4	0.3	0.8	0.3	0.8	0.6
interest/concern:						
- mean	5.4 [2,4,5,6]	4.6 [1,3,5,6]	5.3 [2,4,5,6]	4.7 [1,3,5,6]	4.1 [1,2,3,4,6]	5.0 [1,2,3,4,5]
- st.dev.	0.6	0.9	0.9	0.7	0.9	0.8
warmth/friendliness:						
- mean	5.1 [2,4,5,6]	4.8 [1,3,5]	5.2 [2,4,5,6]	4.8 [1,3,5]	4.3 [1,2,3,4,6]	4.8 [1,3,5]
- st.dev.	0.7	0.9	0.9	0.7	0.9	0.9
Patients' affect ratings						
anger/irritation:						
- mean	1.1 [5,6]	1.1 [5,6]	1.0 [4,5,6]	1.2 [3,5,6]	1.7 [1,2,3,4,6]	1.3 [1,2,3,4,5]
- st.dev.	0.4	0.3	0.2	0.5	0.8	0.8
anxiety/nervousness:						
- mean	1.9 [2,3,4,5,6]	1.5 [1,5,6]	1.4 [1,5,6]	1.6 [1,5,6]	2.4 [1,2,3,4]	2.3 [1,2,3,4]
- st.dev.	1.1	0.8	0.7	0.9	1.1	1.6
interest/concern:						
- mean	5.0 [3,4,5]	4.9 [3,4,5]	5.6 [1,2,4,5,6]	4.8 [1,2,3,5,6]	4.0 [1,2,3,4,6]	4.9 [3,4,5]
- st.dev.	0.3	0.9	0.7	0.5	0.9	0.9
warmth/friendliness:						
- mean	5.0 [2,4,5,6]	4.7 [1,3,5]	4.9 [2,4,5,6]	4.6 [1,3,5]	4.1 [1,2,3,4,6]	4.6 [1,3,5]
- st.dev.	0.3	0.9	0.8	0.6	0.8	0.9

P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

In general, the German and to a lesser degree the Swiss consultations were slightly more characterized by negative affective behaviour like irritation and anxiety than consultations in the other countries (table 3.17). On the positive items, Spain and the Netherlands were evaluated the best, followed by Switzerland. Belgium and the UK. The German doctors were evaluated least positive with respect to interest and friendliness.

Table 3.18   Patient centredness of GPs

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
item 1:						
- mean	4.3 [4,5,6]	4.2 [4,5,6]	4.3 [4,5,6]	3.7 [1,2,3,5,6]	3.4 [1,2,3,4,6]	4.0 [1,2,3,4,5]
- st.dev.	0.8	0.8	0.7	0.7	0.9	0.9
item 2:						
- mean	3.9 [2,4,5,6]	3.6 [4,5]	3.7 [4,5]	3.4 [1,2,3,5]	3.0 [1,2,3,4,6]	3.6 [1,5]
- st.dev.	0.8	1.0	0.8	0.9	1.0	1.1
item 3:						
- mean	4.0 [2,3,4,5,6]	3.8 [1,3,4,5,6]	4.5 [1,2,4,5,6]	3.5 [1,2,3,5]	3.0 [1,2,3,4,6]	3.5 [1,2,3,5]
- st.dev.	0.9	0.9	0.7	1.0	1.1	1.0
item 4:						
- mean	3.9 [2,3,4,5,6]	3.7 [1,3,5]	4.2 [1,2,4,5,6]	3.5 [1,3,5]	3.0 [1,2,3,4,6]	3.6 [1,3,5]
- st.dev.	0.9	1.0	0.8	0.8	1.0	1.0
item 5:						
- mean	4.1 [3,4,5]	4.1 [3,4,5]	4.3 [1,2,4,5,6]	3.7 [1,2,3,5,6]	3.4 [1,2,3,4,6]	4.0 [3,4,5]
- st.dev.	0.7	0.8	0.8	0.7	0.9	0.9

Item 1. Patient's involvement in the problem-defining process
Item 2. Patient's involvement in the decision-making process
Item 3. Doctor's picking up the patient's cues
Item 4. Consideration of the patient's ambivalence or self-efficacy
Item 5. Doctor's overall-responsiveness to the patient

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Patient centredness of the GP, as evaluated by the observers on 5 scales, giave a very consistent outcome. On each scale the Spanish and the Dutch doctors were assessed as being most patient centred, followed, in that order, by the UK, Switzerland, and Belgium. The German GPs were evaluated as least patient centred. All GPs had the highest scores on the patient's involvement in the problem-defining process (item 1) and the doctor's overall-responsiveness to the patient (item 5).

Table 3.19   Consultation characteristics

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
mean length of:						
consultation:						
- mean	10.2 [3,4,5,6]	9.4 [3,4,5,6]	7.8 [1,2,4,6]	15.0 [1,2,3,5]	7.6 [1,2,4,6]	15.6 [1,2,3,5]
- st.dev.	5.0	4.7	4.1	7.2	4.3	8.7
physical exam:						
- mean	2.1 [2,4,5,6]	1.1 [1,4,6]	1.7 [4,6]	4.2 [1,2,3,5,6]	1.6 [1,4,6]	3.3 [1,2,3,4,5]
- st.dev.	1.8	1.1	1.1	3.2	1.7	3.0
interruptions:						
- mean	1.2	1.0 [4]	0.6 [4]	1.9 [2,3,5]	0.8 [4,6]	1.7 [5]
- st.dev.	1.5	1.4	0.8	2.2	1.1	2.2
% eye contact:	46.8 [2,3,4]	55.2 [1,3,4,5,6]	35.5 [1,2,5,6]	31.6 [1,2,5,6]	47.5 [2,3,4]	50.4 [2,3,4]
% GPs' conversational contribution	55.4 [2,3]	52.4 [1,4,5,6]	52.9 [1,4,5]	55.1 [2,3]	56.3 [2,3,6]	54.3 [2,5]

$P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Lastly, some general communication characteristics are presented in table 3.19. The figures show that the consultation lasted relatively long in Belgium and Switzerland and relatively short in Spain and Germany. The longer duration in Switzerland and Belgium appeared to be due to the duration of physical examinations.

The patient-directed gaze (eye contact) was highest in the UK and in Switzerland, and much lower in Spain and Belgium. In other studies about equal percentages of patient-directed gaze were reported. In nursing encounters about 40% (Caris-Verhallen, 1999), in pediatric outpatient encounters 50 % (van Dulmen 1998), and in outpatient consultations of patients with non-insulin-dependent diabetes mellitus 58% (first visit) to 39% (third visit).

The ranking in patient centredness, presented in the former table, is mirrored in the percentage of the GPs' conversational contribution (GPs' utterances relative to the total count of utterances). This was relatively low in the UK and Spain, and high in Germany and the Netherlands.

Conclusions
Judging by the communication patterns, described in this subchapter, we could make the following characterizations of the consultations in different countries:
The Netherlands: instrumental, with an emphasis on information and advice giving, fairly patient-centred, in a friendly atmosphere without any negative affects.
UK: verbally affective with a lot of agreements, patient-centred, much patient-directed gaze, in a slightly more detached atmosphere, again without negative affects.
Spain: very instrumental with an emphasis on question asking, in short time, very patient-centred as well, in a very positive atmosphere.
Belgium: instrumental with an emphasis on information giving and physical examination in long consultations. Moderately patient-centred, not so much patient-directed gaze, in a moderately affective atmosphere.

Germany: verbally affective, with more verbal attention than in other countries. At the instrumental side much advice on medical regimens and lifestyle. Most doctor centred in an affective atmosphere characterized by some negative feelings and relatively less positive feelings than in other countries.

Switzerland: verbally not so different from Germany but non-verbally more like the UK. More patient centred, positively rated atmosphere.

4 RELEVANCE AND PERFORMANCE FROM THE PATIENTS' PER-SPECTIVE

4.1 Introduction

Doctor-patient communication is of great importance to primary health care. Communication is the tool of information exchange, necessary to solve health problems, and to create the therapeutic relationship, required to manage health problems and gain confidence. Communication can meet the patients' need to 'know and understand' as well as to 'be known and understood' [1-3]. Studies on doctor-patient communication have shown that the communication styles of general practitioners (GPs) have an impact on outcome measures like patient satisfaction and compliance [4,5]. The achievement of effective communication may also be influenced by the GP's awareness of patients' expectations about doctor-patient communication. Such awareness can allow the GP to understand the patients' perspective, provide the desired level of information and inform patients if their desires for particular treatments or tests are inappropriate or unnecessary [7]. So far, studies focussing on the patients' expectations of doctor-patient communication and how far these expectations are met were restricted to the national level [8-10]. Despite differences in health care system characteristics, no attention has been paid to cross-national differences in the patients' views on the relevance of communication and the performance of the doctor. These characteristics of the macro health care systems may influence content and style of doctor-patient communication. If patients do not have direct access to medical care and patients are registered with one GP (in the Netherlands, United Kingdom and Spain) GPs are likely to know their patients better than in the countries where the GPs do not act as gatekeepers (in Belgium, Germany, Switzerland). In the latter countries specialist care is accessible without a referral by a GP and the patients are not registered with a specific GP. A better knowledge of the patients, their health problems and social contexts might lead to a better understanding and effective communication. Since in the GP context, less time must be spent on routine questions, which leaves more time for psychological investigations. Acquaintance with the patient may also facilitate picking up hidden clues and signs of mental distress. The employment status of GPs might influence the communication pattern and the time spent with the patients (the Spanish GPs are predominantly not self-employed, whereas the GPs in the other countries generally are). Studies have shown that in countries with self-employed doctors and a referral system, GPs have a significantly stronger position as the doctor of first contact and their self-perceived involvement in psychosocial care is much higher [11,12]. Furthermore, a study on physician employment status and practice patterns showed that salaried GPs spent a greater proportion of their patients' visit time in history-taking and eliciting family information, and a lesser proportion on physical examination than self-employed physicians [13]. Self-employed GPs, especially where working on a fee-for-service basis as in the non-gatekeeping systems and in the Netherlands (having a mixed remuneration system), may aim at increasing their income by spending more time to (paid) interventions and less time to communication. They may choose to optimize their workload whereas salaried GPs may feel less time pressure and therefore have longer consultations. The impact of health care system characteristics on communication is unknown, nor do we know how cultural differences influence doctor-patient communication. What the patients consider worth talking about with their doctors and the doctors' performance is likely to depend on society's prevailing norms and values [14-17].

Studies of factors that might influence doctor-patient communication at the micro level have demonstrated that patient and GP characteristics are possibly confounding factors for which there should be controls in measuring the impact of health care system characteristics. Female patients regard talking about psychosocial issues more important and they

communicate more with GPs (especially female) about psychosocial issues, while male patients attach more importance to biomedical issues and more often discuss them [18]. Younger patients find it easier to talk with the doctor and they communicate more than older patients about issues they consider to be important [19]. Similarly, patients with a higher educational level consider it more important than other patients to talk to the doctor and are able to talk more easily because they are more or less on the same intellectual level and understand the professional terms [20]. Higher expectations with regard to the discussion of specific problems is probably also related both to the type of patient problems, i.e. biomedical or psychosocial, and to the extent to which patients and GPs are acquainted with each other. Research into the impact of GPs' characteristics on doctor-patient communication revealed that more attention was paid to psychosocial aspects of patients' problems in consultations with female, younger and part-time GPs [21-23].

The research questions which will be addressed in this study are:
1. Are European health care systems related to the importance attached by patients to different aspects of doctor-patient communication, taking into account patient and GP characteristics?
2. Are these differences reflected in the patients' assessment of doctor-patient communication?

4.2 Methods

4.2.1 Data collection

Data was derived from the Eurocommunication study [24]. It was collected in 1996-1999. The study design was cross-sectional. Six European countries (the Netherlands, United Kingdom, Spain, Belgium, Germany and Switzerland) were selected, based on variety of health care system characteristics (see introduction) and the availability of participants. The coordination, analyses and reporting were carried out by the NIVEL Institute. National coordinators from universities and research institutes were responsible for implementing the study and collecting the data. In total 27-43 GPs per country were included, and a total of 3674 patients.

Table 4.1   Number and % of GPs by GPs' gender

	♂ GPs		♀ GPs		Total
	N	%	N	%	N
Netherlands	15	48.4	16	51.6	31
UK	23	85.2	4	14.8	27
Spain	12	44.4	15	55.6	27
Belgium	23	74.2	8	25.8	31
Germany	32	74.4	11	25.6	43
Switzerland	22	71.0	9	29.0	31
Total	127		63	190	

The sampling method differed per country due to the GPs' willingness to participate or its practicability. The GPs were recruited by means of a random national sample (Netherlands, Flemish-speaking Belgium), existing GP research networks (United Kingdom, Germany), quality circles (Switzerland, French-speaking Belgium), health centres (Spain). In Germany there was also a call in specialist publications and the 'snowball' method was used. Language background was taken into account in Belgium (Flemish-French language) and Switzerland (German and French language), in Germany the old divide (Western and Eastern Germany)

was accounted for. The aim was to include equal numbers of male and female GPs, but this was only adhered in Spain and the Netherlands. With the exception of Switzerland (where the patients were informed about the video recordings when they made an appointment with the GP by phone) patients consulting the GP on the day(s) of data collection were approached at random in the practice. Their informed consent was asked before their consultation. The overall response rate was 79% [24]. Both the GPs and the patients signed an informed consent form. 190 GPs and 3674 patients took part (table 4.1 and 4.2).

Table 4.2   Number and % of patients (18 years and older) by patients' and GPs' gender

	♂ G P				♀ G P				T			
	♂-pat.		♀-pat.		♂-pat.		♀-pat.		♂-pat.		♀-pat.	
	N	%	N	%	N	%	N	%	N	%	N	%
Netherlands	93	38.1	151	61.9	81	33.3	162	66.7	174	35.7	313	64.3
UK	185	49.9	186	50.1	12	17.1	58	82.9	197	44.7	244	55.3
Spain	80	35.4	146	64.6	70	26.0	199	74.0	150	30.3	345	69.7
Belgium	199	49.9	200	50.1	31	25.2	92	74.8	230	44.1	292	55.9
Germany	261	44.8	321	55.2	73	36.1	129	63.9	334	42.6	450	57.4
Switzerland	199	46.4	230	53.6	42	25.3	124	74.7	241	40.5	354	59.5
Total	1017	45.2	1234	54.8	309	28.8	764	71.2	1326	39.9	1998	60.1

4.2.2 Measurement instruments

Sociodemographic data and the practice characteristics of the GPs were collected by means of a questionnaire. Information about the patients was recorded by the GP on a registration form; this included such items as acquaintance with the patient and diagnoses that were coded following ICPC [25]. Doctor-patient communication was observed by means of videorecording of consultations (see for an extensive description of data collection and methods Chapter 4).

Before their consultation the patients answered questions about demographic characteristics like age, gender, education, health problems presented (ICPC coded), emotional feelings during the past two weeks [26] and questions about the relative importance of doctor-patient communication aspects. The patients rated how important they considered different aspects of communication for their visit of that day (response categories: not important, fairly important, important, of utmost importance). After the consultation, the patients rated whether the GP performed each aspect in their perception (response categories: not, really not, really yes, yes).

The scales on relevance and performance were based on the combining of two different measurement instruments. Firstly, van Campen and Sixma [27-29] developed a conceptual framework (the Quote scale) for measuring patient satisfaction by means of importance and performance scores from the patients' perspective. They concluded that the concept of asking about expectations is ambiguous and therefore they used relevance scores of different care aspects. The assessment of the expectation-relative perceptions of patients is especially relevant in the context of international comparison, where differences between countries regarding the importance attached to different aspects of communication might be expected based on cultural differences. It was necessary to adapt this conceptual model, because it was developed for a study among groups of patients suffering from chronic illnesses and aimed at a general perception of health care received during a long period. The present study was among average patients and targeted at a specific perspective, i.e. of communication aspects, during one consultation.

Secondly, the communication aspects content was derived from the 'Patient Requests Form' (PRF) [30]. The PRF quantifies the intentions of patients attending their general practitioner. Principal component analysis of the 42-item PRF revealed that responses from each sample yielded identical components that described three distinct types of requests: (1) for explanation and reassurance; (2) for emotional support; (3) for investigation and treatment. We used only those items (12 of 42) of PRF that had a loading of $\geq .60$ in principal component analyses. Instead of patients' intentions we measured the importance patients attached to the items.

Factor analysis of both the pre- and post-visit lists of questions on relevance and performance revealed two sub-scales: a biomedical scale of 6 items and a psychosocial scale of 4 items. An overview of the items (formulated as `I would like Dr. to talk about/explain...) to which the patients should give an importance score are given in table 4.5. The formulation of the items to which the patients gave a performance score (formulated as `Dr. talked/explained...') is given in table 4.6. The biomedical scale comprised items discussing biomedical symptoms and problems, and explaining test results and the course and seriousness of biomedical problems; the psychosocial scale, items about support with psychosocial problems and explanation of these problems. Two items were not included on the basis of this analysis (Dr. confirmed a previous diagnosis, and Dr gave advice on a drug I am taking). The reliability of the scales was satisfactory. Cronbach's alpha of the biomedical pre- and post-visit scale was 0.84 and 0.69 respectively, of the psychosocial scale 0.83 and 0.80 respectively. Based on the results of factor and reliability analyses the distinction between biomedical and psychosocial items was made. Taking into account that biomedical problems may have a psychosocial component, the GPs' assessment of the psychosocial background of the patients' problems was included in the multivariate analysis.

4.2.3 Data analysis

Three-level analysis [30,31] was used to investigate which characteristics at the levels of the country, GP and patient explained differences in the relevance of communication aspects and the performance perceived by the patients. This analysis accounts for the possible clustering of patients within GP practices, GPs within countries and health care system characteristics within groups of countries. Patients of one GP might be, on the average, more alike than those of different GPs, and therefore cannot be considered as completely independent measurements [32]. In this way, the variance at the country, GP and patient level is taken into account. The independent variables on the country level were the GPs' gatekeeping role and employment status; at the GP level, the psychosocial diagnosis; at the patient level: gender, age, education, psychosocial problems presented, bad health, depression and familiarity of the GP with the patient. Only patients, 18 years and above, were selected for the present study.

Differences between the countries were analyzed using univariate tests, i.e. Chi-square and variance analysis. Post-hoc analysis was executed, testing differences between the six countries. Pairwise differences between the countries were assessed in a multiple range test using Tukey-HSD procedure, on a significance level of ≤ 0.05.

4.3 Results

4.3.1 Explanation of differences between countries

Table 4.3 shows the results of the multilevel regression analysis used to investigate which characteristics attribute to explaining differences in the patient-reported relevance and performance, both biomedical and psychosocial, between six European countries. On the country level, the GPs' gatekeeping role explained some variance. The patient characteristics explained some variance as well, no variance was explained by the GP characteristics.

The gatekeeping system (with fixed patient lists and a capitation system) was related to the patient-reported relevance and performance of communication aspects, GPs' employment status was not related. In the non-gatekeeping countries the patients considered both biomedical and psychosocial communication aspects to be more important than the patients in the gatekeeping countries. Likewise, according to the patients' perception the non-gatekeeping GPs performed these aspects more often. The self-employed GPs talked more often about biomedical issues, as perceived by the patients.

Males and younger patients reported that talking about and receiving explanations on biomedical issues was more important than the other patients did. The same was reported by those patients who had reported bad health and had been bothered by emotional feelings (like anxiety, depression, irritability, or sadness) during two weeks before the consultation. Furthermore, GPs discussed biomedical issues more often with the patients who were less familiar to them. If the GP assessed the patient's problem as having a psychosocial background, the patient still considered the biomedical aspects worth discussing. In the perception of the patients, the doctor talked about and explained biomedical issues more often with young and male patients and with a lower educational level, as well as with patients reporting bad health and those going to the GP with biomedical problems.

According to the patient's report, GPs working in the health care systems with a direct access to specialist care (non-gatekeeping) talked about psychosocial problems more often than other GPs. Their patients also reported that this was important to them. At the patient and GP level, factors playing an important role in psychosocial communication were psychosocial problems (indicated by both the patient and the GP) and depressive feelings (experienced during the past two weeks). The younger patients and those with a lower educational background or bad health considered discussing psychosocial problems and getting support more important.

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Table 4.3   Multilevel analysis (regression coefficients) of relevance and performance, controlled for characteristics of countries, GP and patients (means are calculated in Hierarchical Linear Models)

	biomedical		psychosocial	
	relev	perf	relev	perf
Country level				
- gatekeeper role (1=yes)	-.429*	-.184*	-.148*	-.286*
- employed (1=yes)	.183	-.166*	-.004	-.223
GP level				
- gender (1=♀)	.013	-.005	-.025	.054
- age	-.002	-.003	.001	.000
- psychosocial diagnosis (1=yes)	-.062	.028	.175*	.284*
Patient level				
- gender (1=♀)	-.151*	-.121*	.063	.058
- age	-.005*	-.002*	-.003*	.000
- education (1=low, 2=middle, 3=high)	-.025	-.054*	-.122*	-.121*
- psychosocial problems presented (1=yes)	-.110	-.222*	.701*	.558*
- bad health (1=yes)	.216*	.150*	.305*	.247*
- depressive feelings (1=yes)	.115*	.052	.353*	.388*
- familiarity (1=bad, 5=good)	-.043*	.003	.007	.011
- GP's assessment of psychosocial background (1=purely somatic, 5=purely psychosocial)	.043*	-.001	.064*	.116*

* $p \leq .05$

4.3.2 Overall scores on relevance and performance

Table 4.4 shows to what extent the participating countries differed - in the view of the patients - with respect to relevance and performance of aspects of doctor-patient communication. In this table average scale scores were used. On the whole, the three non-gatekeeping countries - Belgium, Germany and Switzerland - had the highest scores, meaning that those patients considered the communicative aspects to be more important and indicated that their GP had attended to these aspects more often, when compared with patients from the other three countries. In the Netherlands, the importance of communicative aspects for the patients was somewhat less, and the GPs talked less about both biomedical and psychosocial issues, but more than in Spain and the United Kingdom.

Patients in all six countries had the same ideas about the importance of discussing and receiving explanations about psychosocial problems. This was less important for them than discussing biomedical problems. However, patients presenting psychosocial problems attached much more importance to psychosocial communication than the other patients and they also reported more often that the doctor did in fact talk about psychosocial aspects (not in a table).

Differences within the countries regarding language or political background were found in Belgium and Germany (not in a table). The Flemish patients attached more importance to discussing biomedical issues than the Walloon patients. In East Germany the GPs talked more with their patients about biomedical problems than in the western part. The French-speaking Swiss patients attached more importance to psychosocial aspects and they also said that the GPs discussed these items more often than the patients from German-speaking Switzerland.

Table 4.4   Biomedical and psychosocial relevance and performance (mean scale scores and stand.dev.), by country

		biomedical relevance	performance	psychosocial relevance	performance
1	Netherlands	2.58[2,5]	2.73	1.59	1.88[4,6]
		(.86)	(.82)	(.81)	(.93)
2	United Kingdom	2.07[1,3,4,5,6]	2.64[4,5,6]	1.57	1.95[6]
		(.73)	(.80)	(.74)	(1.02)
3	Spain	2.50[2,4,5]	2.68[4,5,6]	1.62	1.77[4,5,6]
		(.90)	(.85)	(.90)	(1.00)
4	Belgium	2.71[2,3,6]	2.88[2,3]	1.71	2.16[1,3]
		(.92)	(.84)	(.88)	(1.04)
5	Germany	2.75[1,2,3,6]	2.86[2,3]	1.68	2.06[3]
		(.88)	(.89)	(.84)	(1.06)
6	Switzerland	2.50[2,4,5]	2.86[2,3]	1.67	2.22[1,2,3]
		(.94)	(.85)	(.86)	(1.13)
F		28.00***	6.11***	1.89	12.84***

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

*** $p \leq .05$

4.3.3 Specific scores on relevance and performance

To get a better view of the aspects which patients really considered as important and what they said the GP actually did, the relevance and performance figures of each of the 12 aspects are shown separately (table 4.5). On average, the patients in all of the countries attached importance to hearing from the doctor what their symptoms meant and to talking with the doctor about their problems. They also said that these aspects were often discussed by the GP. The German and Dutch patients generally considered talking about problems and symptoms more important than the English and Spanish patients. Contrary to the low relevance scores, the latter GPs talked with nearly all their patients about their problems.

Patients considered an explanation by the doctor of the likely course of their problem and the seriousness of this problem relatively less important. For the Belgian, German and Swiss patients this was generally more important than for the patients of the gatekeeping countries. The Dutch patients reported that the GPs less often explained the course of the health problem in comparison with the other countries, especially the United Kingdom.

Contrary to the Belgian and German patients, a physical examination was less important for the English patients. More than half of the patients said they had a physical examination, in the Netherlands and the United Kingdom relatively fewer patients reported an examination by their doctor. The explanation of test results was important for a minority of the English patients, whereas three-quarters of the Germans considered discussing test results as important. In Spain test results were explained more often than in the other countries.

The patients considered talking about the different psychosocial aspects far less important than talking about biomedical aspects. In each of the countries, the patients assessed getting help for their illness-related anxiety as the most important of the four psychosocial communication aspects. The Belgian doctors gave more often this support, according to their patients, than the other GPs. Only about one-fifth of the patients said that support for psychosocial problems or explanation of these problems was important. For the patients from the Netherlands and the United Kingdom explanation of emotional problems by their GPs was less important than for the German and Swiss patients. Finally, among the patients who presented psychosocial problems, relevance and performance scores of the four psychosocial issues were much higher (about 75% or more, not in a table).

Table 4.5   Relevance: % patients considering communication aspects (utmost) important, and Performance: % patients answering GP (really) performed communication aspects; by country

Items	1 Neth.	2 UK	3 Spain	4 Belgium	5 Germ.	6 Switz.	F
Biomedical aspects							
I would like Dr. to tell me what my symptoms mean							
relevance	75.7[2,3,4,6]	57.7[1,5]	61.6[1,5]	63.7[1,5]	73.1[2,3,4,6]	61.4[1,5]	11.58***
performance	81.4[2,3,6]	69.0[1]	73.1[1]	77.2	74.4	70.8[1]	4.59***
I want Dr. to talk with me about my problem							
relevance	70.0[2,3]	57.2[1,5]	58.0[1,5]	64.2[5]	75.8[2,3,4,6]	65.4[5]	12.24***
performance	89.5[3,5]	88.3[3,5]	74.3[1,2,4,6]	84.9[3]	80.0[1,2]	83.4[3]	10.04***
I want Dr. to explain the likely course of my problem							
relevance	53.0[5]	45.6[4,5,6]	51.1[4,5]	60.7[2,3]	62.5[1,2,3]	56.3[2]	7.37***
performance	38.7[2,3,4,5,6]	65.1[1,4,5]	60.5[1]	54.0[1,2]	53.2[1,2]	56.3[1]	13.38***
I want Dr. to explain how serious my problem is							
relevance	57.4[2,3,6]	34.3[1,3,4,5,6]	47.5[1,2,4,5]	60.0[2,3,6]	57.3[2,3,6]	44.6[1,2,4,5]	16.51***
performance	48.6	42.2[3,4]	53.0[2]	56.1[2,5,6]	45.8[4]	45.8[4]	4.99***
I want to be examined for the cause of my condition							
relevance	52.4[2]	31.8[1,3,4,5,6]	57.2[2,6]	59.3[2,6]	60.7[2,6]	44.8[2,3,4,5]	20.44***
performance	54.2[3,4,5,6]	55.7[3,4]	68.4[1,2]	68.7[1,2]	63.5[1]	63.6[1]	6.91***
I would like Dr. to explain some test results							
relevance	61.4[2,5]	22.3[1,3,4,5,6]	64.9[2,5]	56.5[2,5]	73.9[1,2,3,4,6]	58.9[2,5]	52.72***
performance	41.8[2,3,5,6]	20.3[1,3,4,5,6]	73.6[4]	45.0[2,3,5,6]	65.8[1,2,4,6]	57.0[1,2,3,4,5]	61.94***
Psychosocial aspects							
I feel anxious and would like Dr's help							
relevance	35.6	40.5	33.5	42.0	38.4	37.1	1.96
performance	58.8[3]	52.9[4]	43.6[1,4,5,6]	67.5[2,3,5]	54.3[3,4]	59.7[3]	12.44***
I have emotional problems for which I would like some help							
relevance	16.7[4]	14.7	20.8	18.2	18.7	18.2	1.09
performance	22.7[4,5,6]	24.2[6]	28.2[6]	32.0[1]	31.2[1]	37.6[1,2,3]	6.75***
I 'm having difficult time and would like some support							
relevance	19.3	17.1	19.7	19.6	20.7	20.3	.39
performance	25.8[4,5,6]	35.9	29.9[6]	36.8[1]	37.1[1]	41.6[1,3]	7.01***
I want Dr. to explain my emotional problems							
relevance	16.8[5]	11.3[5,6]	19.1	19.3	24.4[1,2]	20.4[2]	5.32***
performance	16.3[4,5,6]	16.5[5,6]	24.3	25.6[1]	27.2[1,2]	30.2[1,2]	7.80***

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (UK)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

*** p ≤ .001   ** p ≤ .01 *** p ≤ .001

4.3.4 Concordance and discrepancies

Although perceived performance and attributed relevance often went together, discrepancies were also visible (table 4.6). Communication aspects were not always discussed with those patients who had said before their consultation that this was important for their visit. On the other hand, some aspects were also dealt with, although the patients reported that they had not considered these as important beforehand. Discussing and explaining biomedical aspects revealed discrepancies in both directions, for example in Switzerland with respect to explaining the patient's symptoms. On the whole, in the United Kingdom and Switzerland - compared to the other countries - the patients more often said that the GPs talked about biomedical aspects although these aspects were not important to the patients. The other discrepancy (important but not done) as regards explanation and physical examination was relatively often found in the Netherlands and Germany. The English and Swiss patients were also more often examined physically when this was not important for them.

Psychosocial aspects showed fewer discrepancies in each of the countries than biomedical aspects, particularly as regards important but neglected aspects. In the non-gatekeeping countries the GPs more often gave psychosocial help than in the countries where the GPs are gatekeepers where this was not important in the view of the patients

Table 4.6 Discrepancies between relevance and performance: % patients considering communication aspects (not) important and (not) performed by GP and country

Items	1 Neth.	2 UK	3 Spain	4 Belgium	5 Germ.	6 Switz.	F
Biomedical aspects							
Dr. told me what my symptoms mean							
important/not performed	10.4	11.3	6.2[6]	7.2	10.6	11.7[3]	2.88**
correspondence	73.6	67.8[3,5]	78.7[2,6]	71.8	77.2[2,6]	67.1[3,5]	5.66***
not important/performed	16.1	20.9[4]	15.1	21.0[5]	12.2[2,4,6]	21.2[5]	5.60***
Dr. talked with me about my problem							
important/not performed	3.8[5]	2.4[5]	4.9	6.5	7.9[1,2]	4.4	3.74**
correspondence	73.1	65.7[3,5]	76.2[2,4]	66.4[3,5]	80.3[2,4,6]	72.8[5]	8.08***
not important/performed	23.2[2,5]	32.0[1,3,5,6]	18.9[2,4,5]	27.1[3,5]	11.8[1,3,5,6]	22.9[2,5]	14.29***
Dr. explained the likely course of my problem							
important/not performed	24.9[2,3,6]	11.5[1,2,5]	8.6[1,4,5,6]	21.1[2,3]	20.6[2,3]	17.7[1,3]	11.22***
correspondence	64.3[3]	58.5[3]	75.7[1,2,4,6]	64.7[3]	67.5	65.0[3]	5.49***
important/performed	10.8[2,6]	30.0[1,3,4,5,6]	15.7[2]	14.2[2]	12.0[2]	17.4[1,2]	12.11***
Dr. explained how serious my problem is							
important/not performed	22.2[3]	15.4[5]	8.8[1,4,5,6]	18.7[3]	24.6[2,3,6]	16.1[3,5]	10.58***
correspondence	63.8[3]	63.3[3]	77.7[1,2,4,5,6]	66.8[3]	62.3[3]	66.6[3]	6.53***
not important/performed	14.0	21.4[5]	13.6	14.5	13.2[2]	17.3	2.71*
Dr. examined me for the cause of my condition							
important/not performed	15.3[2,3,6]	6.7[1,5]	7.4[1,5]	11.2	13.3[2,3,6]	6.7[1,5]	6.92***
correspondence	66.8[3]	62.6[3]	76.5[1,2,4,6]	67.3[3]	70.1	67.7[3]	3.86**
not important/performed	17.9[3,6]	30.7[1,3,4,5]	16.1[2,6]	21.6[2]	16.6[2,6]	25.6[1,3,5]	8.05***
Dr. explained some test results							
important/not performed	27.9[2,3,5,6]	9.9[1,4]	8.0[1,4,5,6]	22.6[2,3,6]	17.4[1,3]	16.0[1,3,4]	16.80***
correspondence	63.1[2,3,5]	81.8[1,4,6]	77.9	66.5[2,3]	73.6[1]	70.0[2]	9.42***
not important/performed	9.0	8.3	14.1	10.9	9.0	14.0	3.23**
Psychosocial aspects							
Dr. gave me some help for my anxiousness							
important/not performed	7.4	10.0	5.8	5.0	7.3	5.3	2.25*
correspondence	62.3[3]	70.3	79.3[1,4,5,6]	64.5[3]	69.0[3]	66.9[3]	7.47***
not important/performed	30.3[2,3]	19.7[1,4]	14.8[1,4,5,6]	30.5[2,3]	23.6[3]	27.8[3]	9.43***
Dr. gave me some help for my emotional problems							
important/not performed	3.4	3.4	5.0	5.7	5.7	3.0	1.78
correspondence	86.2[4,5,6]	84.9[4,5,6]	83.0[1,4,5,6]	74.7[1,2,3]	75.9[1,2,3]	75.3[1,2,3]	7.64***
not important/performed	10.4[4,5,6]	11.7[6]	12.0[4,6]	19.6[1,3]	18.4[1]	21.7[1,2,3]	7.94***
Dr. gave some support for the difficult time I have							
important/not performed	3.4	1.9[4]	4.3	6.3[2]	4.6	2.9	2.48*
correspondence	86.5[4,5,6]	78.8	82.7[4,5,6]	70.5[1,3]	73.8[1,3]	73.4[1,3]	10.56***
not important/performed	10.1[2,4,5,6]	19.3[1]	13.0[4,5,6]	23.2[1,5]	22.2[1,3]	23.7[1,3]	10.39***
Dr. explained my emotional problems							
important/not performed	7.3	3.8	4.6	9.0	7.7	5.6	2.69*
correspondence	85.6[4,5,6]	87.8[4,6]	86.2[4]	76.4[1,2,3]	81.0	79.2[2]	5.84***
not important/performed	7.1[4,6]	8.4[6]	9.2[6]	14.6[1]	11.3	15.2[1,2,3]	5.16***

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (UK)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)
* $p \le .05$ ** $p \le .01$ *** $p \le .001$

4.4   Conclusions and discussion

The first aim of the present study was to learn more about the influence of health care system characteristics on the relevance patients attached to aspects of doctor-patient communication and their performance by the GPs, from the patients' perspective. Secondly, differences in communications aspects between different European countries were investigated.

The principal conclusion in our findings suggests the GPs' gatekeeping role is an important factor in doctor-patient communication. Probably, the patients of the non-gatekeeping GPs expect more overall care than the other patients. Otherwise, they could have visited a medical specialist instead of the GP. On the other hand, patients of gatekeeping GPs may consider their visit to the GP as necessary for a referral to a medical specialist. The results of the present study indicate that this macro level characteristic should be taken into account when interpreting results of studies in specific countries based on communication studies.

It must also be emphasized that health care systems and cultural characteristics are undeniably related and that cultural characteristics like prevailing norms and values may be important as well. This may be expressed in systems and policies which health services develop in order to be sensitive to the diverse needs of different cultural groups or populations. People with different cultural backgrounds may have their own ideas and beliefs about health care, both on the patient's and the doctor's side. This might effect the doctor-patient communication, for example in defining health problems and explaining causes and treatment [33]. In the present study cultural differences - at the country level - are visible in the importance attached to different communication aspects and in the discussion of these aspects. Differences in the patients' language background found in Belgium and Switzerland may indicate cultural influences. Similarly, according to the patients, the German GPs from the eastern part more often discussed and gave support to their patients than the West-German GPs. To what extent differences in interaction are influenced by (former) different institutional contexts and a transition from one system to the other, as in Germany [34], should be investigated in the future, for example by including the former East-European countries. Further research into cultural differences will be a difficult but essential challenge for the future.

The current study confirms previous findings that patient characteristics are related to the relevance and performance patients attach to communication aspects. Contrary to other research on doctor-patient communication, GP characteristics do not seem to affect the relevance and performance of these aspects, with one exception. The GPs and the patients talked more about psychosocial issues, when the GP diagnosed the patient's problem as psychosocial or suspected a psychosocial relation in the problem presented. This may be a signal that GPs actually discuss psychosocial problems where this is important for the patients.

Comparison of the European countries shows that in the countries where the GPs have no gatekeeping role, the patients generally value doctor-patient communication, both biomedical and psychosocial, as more important than the patients in the other countries. Similarly, the patients of the non-gatekeeping GPs more often said that the doctor discussed these issues. This difference was greater in case of psychosocial than biomedical aspects. This finding is contrary to results from other studies that in countries with a referral system, the GPs were more involved in psychosocial care [12]. The explanation was that in the countries where the patients are registered with one GP and always visit the same doctor, the GPs and the patients know each other better and had more confidence in each other, which should lead to more psychosocial care.

However, the present study suggests that in the countries with a gatekeeping system and with fixed lists of patients, discussion of psychosocial problems was less important for the patients and their GPs and less often took place. A possible reason may be the different way of measuring the GPs' performance: instead of the GPs' perception used in Boerma's study [12], in the present study the patients' assessment was used. Another reason might be that the patients with psychosocial problems want a referral to a mental health care professional instead of discussing their problems with the GP. If so, a conflict around referral might arise and this might endanger the doctor-patient relationship. On the side of the non-gatekeeping systems, GPs may try to restrain their patients from choosing another GP or a medical

specialist, and for this reason the GPs should pay more attention to discussing psychosocial problems with their patients.

The type of reimbursement system might lead to other emphases in the GPs' practice style, motivated by the fact that talking is not paid for in addition to other interventions in Germany, Switzerland and Belgium with a fee-for-service system. However, the GPs talk more instead of less with their patients. Accordingly, interventions like examinations were not performed more in the countries with a fee-for-service system. Probably, differences in gatekeeping role have more impact than differences in payment system.

The influence of employment system, as found in another study [13], on the performance of physical examinations was not confirmed in this study. In the present study, the Spanish patients were more often examined than other patients. However, one should be careful when interpreting this, because the type of health problem presented is naturally related to GPs practice, both with respect to the physical examinations and other aspects investigated in this study. Moreover, all GPs in the present study came from Malaga city and its suburbs, not from other Spanish regions, and not from GPs working in private practice.

Agreement between relevance and performance was generally high, although better as regards psychosocial than biomedical communication aspects. The non-gatekeeping GPs talked to their patients more often about psychosocial issues than - in terms of importance attached - seemed necessary. Again, this might be a consequence of their health system that demands satisfaction of the patients. One could argue that health policy aims at a balance of supply and demand, also with respect doctor-patient communication, in view of an efficient health care. However, this `communicative care' should not be defined by the needs of the patients only. If modern health care depends on patient understanding and cooperation, then professionals and policy makers may want to ensure that patients have information about and are able to cope emotionally with their problems.

In view of the quality of health care, the reasons why the patients' biomedical `preferences' were not met, in Germany and the Netherlands in particular, should be traced. This might result in a continuation or even deterioration of the patients' health problems. A study of videotaped consultations may reveal to what extent the relevance and performance from the patients' perspective agree with actual communication during medical visits. Future interaction analysis comparing the consultations of patients reporting expectations met with patients reporting few expectations met will provide more detailed information which will be relevant for GP communication skills training. This more objective way of measuring doctor-patient communication will be presented in the near future.

The present study has some limitations. The generalization of the results may be restricted, because of the sampling methods used in the different countries. Although the aim was to include an equal number of female and male GPs in each of the six countries, only in the Netherlands and Spain was this aim achieved. This might bias the results, because many studies reveal that gender influences the communication style. However, in the present study GP's gender was not associated with relevance and performance. More detailed analysis and comparing these results with actual conversation by means of the observation study might show the reasons of this finding.

Furthermore, the selection of GPs participating in quality circles or research groups may have resulted in a study population of GPs with a more positive attitude towards communication than other GPs. So, the results probably show an advantageous picture of the reality. However, this is a comparative study and the bias may be about equal in the participating countries. A solution to this selectional bias appears unavailable because of the unwillingness of uninterested GPs to participate in a communication study.

The implication for general practitioners is that they should be aware of a `tailored' doctor-patient communication. The patients' perceptions are important for health policymakers, in view of a good quality of health care. This may imply among other things that in multicultural societies attention must be given to a culturally sensitive doctor-patient communication. Also special attention should be paid to gender differences in communication. In view of the efficiency and the quality of health care it might be recommended to address cultural aspects in professional and post-graduate training and education of communication skills.

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5   DOCTOR-PATIENT COMMUNICATION IN EUROPEAN COUNTRIES

5.1   Introduction

During the last decade studies on doctors' and patients' behaviour in the consultation room have shown good doctor-patient communication to be one of the most important skills in general practice.[1,2] On the doctor's side, communication with a patient provides a way of knowing a patient's problem and creating the therapeutic relationship necessary for its management and —where possible— its solution. On the patient's side, communication serves the need to 'know and understand' the health problem as well as the need to 'be known and understood' concerning what is wrong and how best to recover.[3-7] History taking, making the diagnosis and determining the treatment is carried out through exchanging verbal and nonverbal information.[8-11] Previous studies have shown that the communication style of general practitioners influences patient satisfaction and compliance.[12-15] So, good communication is likely to increase the quality of care. The emphasis in health care has shifted from acute to chronic diseases, from instrumental interventions to lifestyle related health promotion, from cure to care, and from doctor-centred to patient-centred behaviour. In all these respects, doctor-patient communication is of particular importance. The need for good communication skills will only increase in the future, because more people will grow old, with chronic diseases and need for care.

Although the influence of micro level factors on doctor-patient communication has been studied quite often, almost all the studies were performed within one country and without taking into account macro level factors. Comparison of the results of different studies in different countries was difficult, because different theoretical models and different methods were used to investigate doctor-patient communication.[16,17]

The influence of macro level factors such as health care system characteristics on the communication in the consultation room has not been previously investigated, although studies in other areas have demonstrated that micro level behaviour can be influenced by macro level features and measures. The advancing European integration in economic and monetary policy leads to the expectation that European health care policies will also be integrated.[18] It is therefore necessary to provide a framework for general practice in Europe within which individual countries can formulate their own policies. The development of this framework is part of a comprehensive process aimed at increasing awareness of the role of general practice in promoting population health. Strengthening the role of primary health care is one of the aims of health care policy in Europe[19]. Since general practice has been the core professional discipline involved in the delivery of primary health care, the position of general practitioners (GPs) is of particular importance in health care policy.

A health care system characteristic distinguishing European countries is the gatekeeping role of general practitioners. If secondary (specialized) care is accessible without a referral by a general practitioner and patients are not registered with a general practitioner (fixed lists are common in gatekeeping systems), it is less likely that doctors and patients will be familiar with each other. Familiarity between doctor and patient may influence the type of conversation.[20] A better knowledge of patients, their problems and living circumstances may lead to better understanding and more effective communication. Employment status may influence the communication as well. General practitioners who are not self-employed and have a fixed salary may allot less time to their patients than their colleagues in countries where they are self-employed and do not have fixed lists. Less time would be assumed to be related to less

communication.

So, in the near future importance might be attached to differences in European countries' health care system characteristics, such as the gatekeeping role of general practitioners and the prevailing employment and remuneration system. Along with the ongoing integration of health care policies in Europe a framework for general practice is being developed. Knowledge of the influence of health care system characteristics on doctor-patient communication will be important for setting European health care policies.

The research questions of this study are (1) whether doctor-patient communication differs between European countries and (2) if so, the extent to which differences in health care systems in European countries are related to doctor-patient communication. From earlier studies the relationship between doctor-patient communication and doctor and patient characteristics is fairly well known. On the basis of the findings of previous studies influence on doctor-patient communication was expected from doctors' and patients' gender and age. [6,21] Similarly, a relationship was anticipated between the type of health problems presented by patients and the conversation, with a contrast between psychosocial and biomedical problems.[22] A patient's educational level has not been investigated extensively until now; it was nevertheless expected to be important from the perspective of an egalitarian conversation between doctor and patient. Other doctor and practice characteristics considered capable of being related to doctor-patient communication were the workload and whether doctors work part-time or full-time. The greater the number of consultations, home visits and telephone calls, the greater the general practitioners' workload and therefore the shorter the time expected to be spent talking with a patient. Previous findings indicate an association between part-time work and communication style.[23] Part-time working female general practitioners apparently spend more time with their patients, especially on giving information and counselling. In this study the possibly confounding influence of the general practitioner, patient and consultation characteristics mentioned above has been taken into account.

5.2 Methods

5.2.1 Data collection

Data was derived from The Eurocommunication Study (1996-1999). The study has been made possible by funding from the BIOMED-II research programme of the European Union (contract no. BMH4-CT96-1515). A combination of a variety of health care system characteristics and the availability of participants resulted in the selection of six European countries (see figure 5.1). Universities and research institutes in the six countries were responsible for the data collection. The NIVEL coordinated the study and is reporting the results.

The study design was cross-sectional. The numbers of general practitioners taking part were 27 from the United Kingdom and Spain and 31 from the Netherlands (in these countries general practitioners are gatekeepers). From the other countries there were 20 Flemish and 11 Walloon general practitioners from Belgium, 20 from German and 11 from French-speaking Switzerland, and 43 from Germany, 14 from the East and 29 from the West. In each country 20 patients per general practitioner were included. The patients completed questionnaires and their consultations were videotaped. Consultations for about 15 patients (range 13-17) with each of the doctors were used for the observation study, except for the English; there, 24 (of 27) general practitioners were included. The extra consultations were recorded for reasons of becoming accustomed to the recording (the first three consultations were skipped) and unforeseen circumstances (unintelligible conversation, damage, withdrawal of consent).

The sampling method differed per country because of differences in the willingness of general practitioners to participate, or for feasibility reasons. General practitioners were recruited by means of a random national sample (Netherlands, Flemish-speaking Belgium), existing general practitioner research networks (United Kingdom, Germany), quality circles (Switzerland, French-speaking Belgium), health centres (Spain). In Germany there was a call in specialist publications and the snowball method was also used. These differences in sampling methods may have biassed the generalization of the study. It transpired however that, irrespective of the sampling method used, in each country general practitioners who were interested in doctor-patient communication participated.

In comparison with a previous study among European general practitioners, [19] those in the present study do not form an entirely representative group. The aim of the study was to include equal numbers of male and female general practitioners, to investigate gender differences. This could only be adhered to in Spain and the Netherlands. Further, in Spain only salaried general practitioners working in health centres in one (sub)urban region (Malaga) took part. The Spanish general practitioners are therefore not representative for the whole country, where also private, not salaried general practitioners are practising. With respect to other general practitioner characteristics, such as having followed vocational training, practising in rural areas or cities, and working in a solo or group practice, the doctors are not fully representative of their countries. In spite of these limitations, a comparison could still be made. The confounding factors of gender, age and full-time or part-time working have been accounted for in explaining the differences between countries.

With the exception of Switzerland (where patients were informed about the video recordings when they telephoned to make an appointment) patients consulting the general practitioners on the day(s) of data collection were approached at random in the waiting room, before their consultation. he patients were asked for informed consent before their consultation. The overall response rate was 79%. Non-response analysis showed hardly any bias resulting from patients' refusal. There were 190 general practitioners (127 male and 63 female) and 2773 patients (59% women) who took part.

Figure 5.1   Health care system characteristics of the six participating countries

	gatekeeper	fixed list	employment	payment
The Netherlands	yes	yes	self-employed	mixed
United Kingdom	yes	yes	self-employed	capitation
Spain	yes	yes	employee	capitation
Belgium	no	no	self-employed	fee for service
Germany	no	no	self-employed	fee for service
Switzerland	no	no	self-employed	fee for service

5.2.2 Measurement instruments

Sociodemographic and health-related data and practice characteristics were collected by means of patient and general practitioner questionnaires. The general practitioners reported on a registration form information about patients, such as their familiarity with a patient, diagnoses (ICPC coded)[24], and the psychosocial background of a patient's problems.

Video observations
Data about the doctor-patient communication were derived from videotapes of the consul-

tations. Verbal affective and instrumental behaviour as well as nonverbal behaviour (patient directed eye gaze) was measured by means of Roter's Interaction Analysis System (RIAS).[25] This observation system measures biomedical and psychosocial aspects of doctor-patient communication. The system distinguishes both instrumental (task focussed) and affective (socio-emotional) verbal behaviour in doctors and patients, reflecting the cure-care distinction. The unit of analysis is the utterance, or the smallest meaningful string of words. Utterances were assigned to mutually exclusive categories. In this study, categories were clustered for both general practitioners and patients as follows:

Affective behaviour:
– social talk: personal remarks (nonmedical), laughs, jokes, approval, compliments agreement: signs of agreement (mostly back-channel responses such as `hmmm') or understanding what was said – rapport building: showing empathy, legitimization, support, concern, worry, (asking for) reassurance, encouragement, optimism– partnership building: paraphrases, checks for understanding, asking for clarification, opinion, or repetition

Instrumental behaviour:
– orientation (only a GP category): giving direction or instruction, transition– asking questions: medical, therapeutic, lifestyle, social context, psychosocial, feelings, request for services– giving information: medical, therapeutic, lifestyle, social context, psychosocial, feelings
– counselling (only a GP category): medical, therapeutic, lifestyle, social context, psychosocial, feelings

Biomedical versus psychosocial talk:
– biomedical talk: asking questions, giving information and (only GP) counselling about medical and therapeutic issues
– psychosocial talk: asking questions, giving information and (only GP) counselling about issues of lifestyle, social context, psychosocial, feelings
– the ratio of biomedical and psychosocial talk was calculated for both GPs and patients.

Consultation characteristics:
– length of consultation– % GP's patient-directed gaze (eye contact)
– % GP's speaking time: GP's conversational contribution to the total count of utterances.
Interrater reliability
The same person trained each group of (at least two) observers in each country in the same way with the aim of achieving equivalent ratings of the videotaped consultations in all countries. Observers were always native speakers. The inter-rater reliability was measured for each country separately, by calculating Pearson's correlation coefficient for 20 consultations of different doctors rated by pairs of observers. It appeared that 79% of the irr's were quite good (0.7 or higher); 15% were moderately good (between 0.5 and 0.7) and 6% were too low (<0.5). The low irrs mainly involved the cluster *other* and the differences between the clusters *giving information* and *counselling medical/therapeutical* and *giving information* and *counselling lifestyle/social context/psychosocial/feelings*. Care is needed in the interpretation of the results for the categories with a low irr.

5.2.3 Data analysis
Differences between the six countries were analysed using univariate tests (difference of proportions test for independent samples and one-way analysis). The frequencies of the different clusters of doctor-patient communication (see video observations) were the dependent variables. Three-level analysis was used in order to account for the clustering of patients within GPs and of GPs within countries.[26,27] For, the doctor-patient communication of one doctor might tend to be more alike than those of other doctors, and they cannot *a priori* be considered as completely independent measurements. Similarly, doctors practising in one

country might have a more uniform communication style than doctors in other countries. By using multilevel analysis the variance for patient, doctor, and country level is taken into account separately.[28]

The gatekeeping role and the employment system were included as health care system characteristics at the country level. In the countries selected, remuneration by capitation versus fee-for-service and the use/non-use of fixed lists of patients ran parallel to whether there was a gatekeeping system (only in the Netherlands is there a mixed remuneration system). These characteristics were therefore included in the gatekeeping role of general practitioners (figure 1). At the general practitioners' level the independent variables gender, age, part-time or full-time working were included. Workload per week was defined as (the number of consultations) + (2 * number of home visits) + (½ * number of phone calls) per week, in accordance with a previous study.[29] In this study, workload was demonstrated to be a satisfactory determinant of the available time for a general practitioner's contacts with patients (part-time working has been accounted for, thereby excluding this aspect from the workload.)

At the patients' level the independent variables included were: gender; age; educational level (low, middle, high); visiting the doctor for psychosocial problems (as expressed in writing in the patient questionnaire); suffering from emotional feelings and poor health, both from the patient's perspective (COOP/WONCA charts, which are validated for cross-cultural use[30]); doctor's psychosocial diagnoses; doctor's assessment of psychosocial background of the patients' problems (1=pure somatic, 5=pure psychosocial); familiarity of the doctor with the patient (1=bad, 5=good). Health problems and diagnoses were coded in ICPC chapters.[24] Length of consultation was included, because the number of utterances is inevitably associated with the time available.

5.3 Results

5.3.1 General Practitioner, patient and consultation characteristics

Table 5.1 presents the distribution of independent variables at general practitioner and patient levels to give an impression of the population of the study and an overall picture of the independent variables used in the multilevel analysis. In Spain and the Netherlands the male-female proportion of doctors was about equal as a result of the sampling method used (aiming at an equal number of males and females). In the other countries this goal was not attained; more male than female doctors participated in the study. The doctors in Spain were the youngest, while those in the other countries did not differ in this respect. The doctors in Germany had most patient contacts (expressed as workload), those in Switzerland and Belgium the lowest, while in the other countries the workload did not differ significantly. The doctors working full-time (>32 hours per week) were mostly found in Spain (where they all worked more than 32 hours per week) and in Belgium, Germany and Switzerland.

The female patients were in the majority in all countries, particularly in Spain. The mean age of patients was the highest in the United Kingdom and Switzerland. Psychosocial problems were presented and diagnosed most often in Switzerland and the United Kingdom and quite frequently in Germany in comparison with the other countries, especially Belgium. In general terms, a patient's suffering from emotional feelings agreed with the doctor's psychosocial diagnosis and assessment of the psychosocial background of the health problems presented. The Dutch, English and Spanish patients assessed their own health less well than other patients. Finally, patients and doctors of the non-gatekeeping countries were on average more familiar with each other than those in the gatekeeping countries.

Table 5.1   General Practitioner and Patient Characteristics

	Neth	UK	Spain	Belg	Germ	Switz
			Countries			
general practitioner level						
% male	48.4 [2,4,5]	85.2 [1,3]	44.2 [2,4,5,6]	74.2 [1,3]	74.4 [1,3]	71.0 [3]
age:						
- mean	45.2 [3]	43.1	38.5 [1,4,5,6]	44.9 [3]	46.2 [3]	47.7 [3]
- st.dev.	7.2	6.9	3.9	6.4	6.7	5.8
workload per week[a]:						
- mean	188.6 [5,6]	204.6 [4,5,6]	182.9 [5,6]	149.3 [2,5]	308.6 [1,2,3,4,6]	126.1 [1,2,3,5]
- st.dev.	50.2	69.8	62.7	59.6	64.6	43.8
% full-time working (>32 hr per week)	53.3 [2,3,4,5,6]	77.8 [3,4,5]	100.0 [1,2,6]	96.8 [1,2,6]	97.6 [1,2,6]	80.6 [1,3,4,5]
N GPs	31	27	27	31	43	31
patient level						
% male	37.2 [4]	43.4 [3]	31.6 [2,4,5,6]	44.3 [1,3]	42.9 [3]	42.0 [3]
age:						
- mean	40.6 [2,3,5,6]	48.6 [1,4]	45.5 [1]	43.5 [2,6]	45.5 [1]	48.3 [1,4]
- st.dev.	21.6	18.2	19.8	21.2	20.7	19.9
% education level						
- low	27.9 [2,3,4,5]	5.8 [1,3,4,5,6]	60.7 [1,2,4,5,6]	35.2 [1,2,5]	52.0 [1,2,3,4,6]	31.6 [2,3,5]
- middle	46.6 [2,3,4,5,6]	56.3 [1,3,4,5]	21.1 [1,2,4,5,6]	36.5 [1,2,3,5,6]	29.7 [1,2,3,4,6]	57.8 [1,3,4,5]
- high	25.5 [2,3,5,6]	38.0 [1,3,4,5,6]	18.3 [1,2,4,6]	28.2 [2,3,5,6]	18.3 [1,2,4,6]	10.7 [1,2,3,4,5]
% psychosocial probl.pres.	8.7 [4,5]	11.6 [4,5]	12.0 [4,5]	4.2 [1,2,3,6]	5.2 [1,2,3,6]	9.9 [4,5]
% emotional feelings	56.0 [2,3,4,5,6]	74.7 [1,3,4]	63.2 [1,2,5]	62.7 [1,2,5]	69.1 [1,3,4]	68.8 [1]
% poor health	43.2 [4,6]	46.2 [4,5,6]	49.1 [4,5,6]	27.6 [1,2,3,5]	37.8 [1,2,3,5]	27.3 [1,2,3,5]
% psychosocial diagnosis	18.1 [2,4,6]	31.0 [1,3,4,5]	20.5 [2,4,6]	9.2 [1,2,3,5,6]	21.3 [2,4,6]	32.0 [1,3,4,5]
psychosocial background:						
- mean	2.6 [3,6]	2.7 [1,2,5,6]	2.3 [1,2,5,6]	2.4 [2,5,6]	2.7 [3,4]	2.9 [1,3,4]
- st.dev.	1.5	1.4	1.3	1.4	1.5	1.4
familiarity:						
- mean	3.4 [4,6]	3.4 [4,6]	3.4 [4,6]	3.9 [1,2,3,5]	3.6 [4]	3.7 [1,2,3]
- st.dev.	1.3	1.4	1.4	1.1	1.3	1.2
N patients	443	357	396	464	672	441

a : workload= number of consultations + (2 * number of home visits) + (½ * number of phone calls) per week

* P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

5.3.2 Doctor-patient communication

In table 5.2 some consultation characteristics are summarized. Consultations in Germany and Spain were the shortest, in Switzerland and Belgium the longest, with those in England and the Netherlands falling in between. With respect to nonverbal behaviour, the patient directed gaze (eye contact) was longest for the English doctors; the differences between the Swiss, German and Netherlands general practitioners were fairly small. The doctors in Belgium and Spain looked at their patients less frequently. In all countries the patients spoke less than their doctors; the differences between the countries were fairly small.

Table 5.2   Consultation characteristics

		Countries				
	Neth	UK	Spain	Belg	Germ	Switz
consultation length:						
- mean	10.2 [3,4,5,6]	9.4 [3,4,5,6]	7.8 [1,2,4,6]	15.0 [1,2,3,5]	7.6 [1,2,4,6]	15.6 [1,2,3,5]
- st.dev.	5.0	4.7	4.1	7.2	4.3	8.7
% eye contact	46.8 [2,3,4]	55.2 [1,3,4,5,6]	35.5 [1,2,5,6]	31.6 [1,2,5,6]	47.5 [2,3,4]	504 [2,3,4]
% GPs' speaking time	55.4 [2,3]	52.4 [1,4,5,6]	52.9 [1,4,5]	55.1 [2,3]	56.3 [2,3,6]	54.3 [2,5]
% physical exam	17.5 [2,3,4,5]	7.9 [1,34,5,6]	11.8 [1,24,6]	24.5 [1,2,3,5,6]	14.2 [1,2,4]	16.7 [2,3,4]

$* P \leq .05$

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

The communication style of both general practitioners and their patients differed between countries in many respects (table 5.3 and 5.4). This was the case for both affective and instrumental behaviour as well as biomedical and psychosocial talk.

Affective verbal behaviour
Social talk between doctors and patients occurred most often in Belgium, Switzerland and the United Kingdom. In Germany and Spain social conversation and personal comments took place less frequently. Giving back-channel responses (hmm) and other signs of understanding of what had been said occurred most often in Belgium and Switzerland. Expressions of concern and worry, showing empathy and reassurance (rapport building) was done most frequently in the Swiss and German consultations by both doctors and patients. The Netherlands and Swiss doctors paraphrased and checked more often that they had understood their patients well, and asked them more often for clarification and for their opinion (partnership building) than did other doctors, especially those in Belgium. Except in Spain, patients in all other countries showed less rapport building than their general practitioners; the differences were however fairly small.

Table 5.3 Affective and instrumental behaviour of General Practitioners

	Neth	UK	Spain	Belg	Germ	Switz
affective behaviour						
social talk:						
- mean	7.7 [2,4,6]	10.5 [1,3,5]	6.2 [2,4,6]	11.0 [1,3,5]	6.9 [2,4,6]	10.4 [1,3,5]
- st.dev.	9.0	10.1	7.2	11.3	7.9	13.6
agreements:						
- mean	16.8 [2,3,6]	26.2 [1,3,4,5]	9.0 [1,2,4,5,6]	17.3 [2,3,6]	18.1 [2,3,6]	25.9 [1,3,4,5]
- st.dev.	16.1	20.3	9.7	16.0	15.7	21.3
rapport building:						
- mean	3.3 [2,3,5,6]	5.6 [1,3,4,5,6]	1.6 [1,2,4,5,6]	3.5 [2,3,5,6]	8.2 [1,2,3,4]	9.5 [1,2,3,4]
- st.dev.	4.1	6.4	2.5	3.9	10.0	10.9
partner building:						
- mean	13.2 [4,5]	11.7 [4]	11.5 [4]	6.3 [1,2,3,5,6]	10.7 [1,4,6]	12.5 [4,5]
- st.dev.	8.8	9.5	9.3	5.1	9.2	11.3
instrumental behaviour						
orientation:						
- mean	11.3 [3,4,5]	9.7 [3,4,5,6]	7.7 [1,2,4,5,6]	14.1 [1,2,3]	13.6 [1,2,3]	12.9 [2,3]
- st.dev.	7.6	7.8	6.2	10.1	11.0	10.7
questions-asking:						
- mean	11.6 [3,4,5,6]	12.7 [4,6]	14.1 [1,4,6]	18.4 [1,2,3,5]	14.8 [1,4,6]	19.8 [1,2,3,5]
- st.dev.	7.9	8.8	10.3	12.8	11.8	13.7
information-giving:						
- mean	38.0 [2,3,4,5]	29.2 [1,3,4,6]	22.6 [1,2,4,5,6]	45.6 [1,2,3,5,6]	29.2 [1,3,4,6]	39.7 [2,3,4,5]
- st.dev.	28.0	20.9	17.7	33.8	29.2	31.8
counselling:						
- mean	8.9 [3,4,5]	7.6 [4,5]	5.7 [1,5,6]	5.5 [1,2,5,6]	12.5 [1,2,3,4,6]	8.4 [3,4,5]
- st.dev.	7.3	6.6	5.4	6.6	13.7	8.5
biomedical talk:						
- mean	46.6 [2,3,4]	38.7 [1,3,4,5,6]	31.8 [1,2,4,5,6]	54.3 [1,2,3,5]	46.4 [2,3,4]	51.0 [2,3]
- st.dev.	25.4	23.3	21.2	35.9	36.1	31.0
psychosocial talk:						
- mean	12.0 [6]	10.8 [4,6]	10.6 [4,6]	15.2 [2,3,5]	10.0 [4,6]	16.9 [1,2,3,5]
- st.dev.	24.7	13.5	13.4	17.0	15.5	23.7
ratio biomedical/ psychosocial talk	3.8	3.6	3.0	3.6	4.6	3.0

* P ≤ .05

1 Score differs significantly from score of country 1 (Netherlands)
2 Score differs significantly from score of country 2 (United Kingdom)
3 Score differs significantly from score of country 3 (Spain)
4 Score differs significantly from score of country 4 (Belgium)
5 Score differs significantly from score of country 5 (Germany)
6 Score differs significantly from score of country 6 (Switzerland)

Table 5.4   Affective and instrumental behaviour of patients

	Countries					
	Neth	UK	Spain	Belg	Germ	Switz
affective behaviour						
social talk:						
- mean	6.7 [2,4,6]	10.4 [1,3,5,6]	7.0 [2,4,6]	9.6 [1,3,5,6]	6.6 [2,4,6]	12.8 [1,2,3,4,5]
- st.dev.	9.1	11.5	9.1	12.7	8.5	16.3
agreements:						
- mean	13.0 [2,3,4,5,6]	23.9 [1,3,4,5]	8.9 [1,2,4,5,6]	18.2 [1,2,3,6]	18.4 [1,2,3,6]	26.1 [1,3,4,5]
- st.dev.	12.6	17.1	6.8	16.4	14.5	19.2
rapport building:						
- mean	1.5 [2,3,5,6]	3.4 [1,4,5,6]	3.1 [1,4,5,6]	1.0 [2,3,5,6]	4.8 [1,2,3,4]	4.6 [1,2,3,4]
- st.dev.	3.0	5.1	4.4	1.9	6.2	7.8
partnership building:						
- mean	2.8 [2]	4.1 [1,3,4,5]	2.4 [2,6]	2.3 [2,6]	2.5 [2,6]	3.4 [3,4,5]
- st.dev.	2.8	4.5	2.7	2.4	3.5	5.4
instrumental behaviour						
questions-asking:						
- mean	3.6 [4]	3.8 [4]	3.6 [4]	5.3 [1,2,3,5,6]	4.1 [4]	3.9 [4]
- st.dev.	3.4	4.2	3.5	5.4	4.9	4.4
information-giving:						
- mean	64.9 [3,5]	58.6 [3,6]	44.9 [1,2,4,6]	63.9 [3,5]	52.8 [1,4,6]	70.2 [2,3,5]
- st.dev.	45.6	43.9	32.6	47.2	43.1	55.1
biomedical talk:						
- mean	46.4 [2,3,4,5,6]	35.4 [1,4]	32.8 [1,4,6]	41.0 [1,2,3,5]	35.9 [1,4]	40.2 [1,3]
- st.dev.	29.0	22.3	23.7	30.3	26.5	28.8
psychosocial talk:						
- mean	22.4 [6]	27.0 [3]	15.7 [2,4,6]	28.3 [3,5]	21.1 [4,6]	33.9 [1,3,5]
- st.dev.	39.8	38.2	19.9	35.0	32.3	44.9
ratio biomedical/ psychosocial talk	2.1	1.3	2.1	1.5	1.7	1.2

* P ≤ .05

1   Score differs significantly from score of country 1 (Netherlands)
2   Score differs significantly from score of country 2 (United Kingdom)
3   Score differs significantly from score of country 3 (Spain)
4   Score differs significantly from score of country 4 (Belgium)
5   Score differs significantly from score of country 5 (Germany)
6   Score differs significantly from score of country 6 (Switzerland)

Instrumental verbal behaviour

Orientation statements relating what is to happen during the visit and providing instructions were given most often by the doctors in Belgium, Germany and Switzerland. The Spanish doctors did this relatively rarely. In each country, the doctors asked patients more questions about both medical or psychosocial issues than the patients put to their doctors. The Belgian, Swiss and (to a somewhat lesser extent) the German doctors asked most questions. On the patients' side, the Belgian patients asked more than the other patients, but the differences were small. In contrast with asking questions, the patients gave their doctors about twice as much information (including answers given to doctors' questions) than the converse. The Swiss, Belgian and Dutch doctors and their patients exchanged information more often about medical and/or psychosocial issues than the other doctors and patients did. In Spain comparatively less information was exchanged.

Ratio biomedical-psychosocial talk

Biomedical talk by doctors about the medical and therapeutic aspects of health problems occurred less often in the United Kingdom and Spain. Like their doctors, the Spanish and English patients also talked less often about these issues; the Dutch patients raised them most often. Both doctors and patients in Belgium and Switzerland asked questions and gave information most often about psychosocial and lifestyle issues. Psychosocial talk occurred in consultations in the Netherlands, England and Spain to a lesser extent. Counselling statements imply the giving of advice and directions with respect to a patient's behaviour in many areas, such as medicines, diet, or smoking. This was done most often in Germany and least often in Belgium and Spain.

The ratio of doctors' biomedical to psychosocial talk was the highest in Germany. There, the number of times biomedical issues were discussed more often than psychosocial issues was higher than in the other countries. This ratio was the lowest for the Spanish and Swiss doctors; they talked relatively less often about medical and therapeutic aspects than about psychosocial and lifestyle aspects of health problems. In this respect the differences between patients in the countries studied were small. In contrast with their doctors, the Spanish and the Dutch patients talked less often than the other patients about psychosocial rather than biomedical issues. The Dutch patients reflected the behaviour of the Dutch general practitioners.

5.3.3 Relationship between health care system characteristics and doctor-patient communication.

Affective behaviour

The results of the three-level analysis performed to investigate the association between health care system characteristics and communication between doctors and patients are shown in table 5.5 and 5.6. The relationship between health care system characteristics (country level) and affective behaviour was only found with respect to agreement by the doctors and partnership building of both the doctors and patients. The self-employed doctors (the Spanish general practitioners) gave more agreements and understandings than the employed doctors. Paraphrases, checks for understanding and requests for clarification and opinion were more often found in consultations in the gatekeeping countries.

At the general practitioner level, the doctor's gender was associated with rapport and partnership building and giving agreement by the patient. The female general practitioners showed empathy and concern and reassured and encouraged their patients more often than their male counterparts. Similarly, the female doctors more often used paraphrases and checked whether patients had understood what they had been told. Utterances of concern and worry and other rapport building expressions were made more often by part-time doctors and by patients visiting a doctor working part-time.

Table 5.5   Multilevel analysis (regression coefficients) of verbal affective behaviour, controlled for the characteristics of patients, general practitioners and health care systems (means are calculated in Hierarchical Linear Models)

	Social talk		Agree		Rapport		Partnership	
	GP	pat	GP	pat	GP	pat	GP	pat
Country level								
gatekeeper role (1=yes)	1.92	1.37	3.88	.11	-1.66	-.49	4.09*	.89*
employed (1=yes)	-1.78	-.94	-9.83*	-7.37	-2.07	1.45	.86	-.27
General Practitioner level								
gender (1=♀)	.13	-.25	2.10	2.83*	1.63*	.33	2.65*	-.07
age	.08	.03	-.20*	-.03	.02	-.03	.12	.00
workload per week	-.00	-.01	.01	.01	-.00	.00	.01	.00
full-time (1=yes)	-.30	.14	-.73	-.08	-.40*	-.24*	-.15	-.06
Patient level								
gender (1=♀)	.56	1.62*	1.08	2.39*	.62*	.84*	-.71*	-.02
age	.02	.07*	.09	.04*	.02	.02*	.01	.03*
education (1=low, 3=high)	.44	.55	.73*	1.36*	.06	-.12	-.20	.13
psychosocial problem (1=yes)	-.74	-.66	-.40	.27	-.13	-.19	-.29	-.21
emotional feelings (1=yes)	-.74	-.57	.77	-.27	-.10	.01	.01	-.04
Poor health (1=yes)	-1.40*	-2.06*	-.59	.22	.00	.63*	1.52*	-.02
psychosocial diagnosis (1=yes)	-.11	.30	2.65*	-.58	.64	.16	.66	.04
psychosocial background (1=no, 5=yes)	-.53*	-.35	.72*	-.20	.38*	.29*	.36*	-.07
familiarity (1=bad, 5=good)	.92*	.74*	.42	-.82*	.08	.04	-.41*	.08
consultation length	.45*	.53*	1.31*	1.19*	.34*	.24*	.63*	.16*

* P ≤ .05

Patient (and consultation) characteristics were more often associated with affective communication than the general practitioner or country characteristics. In particular the length of a consultation influenced the conversation. There was social conversational and agreeing more often by the female than the male patients. Rapport building was done more by both patients and doctors when the patient was female. On the other hand, doctors showed more partnership in their consultations with male patients than with female patients. The older the patient, the more affective talk there was. Social talk occurred more with the fairly healthy patients and with the doctors when no psychosocial background of the patient's problem was assessed and when doctors were more familiar with the patient. Agreements were given more by doctors to patients with psychosocial problems, while the more highly educated patients gave more signs of agreement to the doctor than the less well educated patients. This was also true when the English patients—whose educational levels were not very reliably reported—were excluded from the analysis. A contrary finding was that the doctors more often gave agreements when they were better acquainted with a patient, although in this case the patients gave fewer agreements. Rapport building was shown more by the patients with poor health and by both doctors and patients when psychosocial aspects were important. Finally, the doctors expressed more partnership building with patients who had poor health and a psychosocial diagnosis, and when the patient was less well known to them.

Instrumental behaviour

A relationship between the health care system characteristics and instrumental behaviour was only partially found. In the countries without a gatekeeping system the doctors asked their patients more questions, but their patients gave them less information (5.6). The employed general practitioners also asked their patients more questions and they talked more often about psychosocial issues.

A doctor's gender was not related to instrumental talk, whereas older doctors were associated with asking more questions and more psychosocial talk. However, patients asked the younger doctors questions more often and talked more with them about biomedical aspects of health. The greater the doctor's workload (office consultations, visits and phone calls), the more talk there was about biomedical and psychosocial issues.

At the patient level, many associations were found. The female and older patients asked more questions and gave more information, especially about biomedical topics. The younger and less well educated patients were, on the other hand, asked more questions by their doctors. Information was more often given to the more highly educated people (also when the English patients were excluded from the analysis). The doctors asked more questions if they had made a psychosocial diagnosis and they had more psychosocial and less biomedical discussion. The patients' behaviour tended to reflect their doctors' communication in this respect. Poor health was related to more biomedical and less psychosocial talk between doctors and patients. Finally, the doctors asked their patients more questions, especially about biomedical issues, when they did not know them very well, whereas patients asked more questions if they were familiar with the doctor.

Table 5.6 Multilevel analysis (regression coefficients) of verbal instrumental behaviour, controlled for characteristics of patients, general practitioners and health care systems (means calculated in Hierarchical Linear Models)

	ask questions		give info		biomed talk		psysoc talk	
	GP	pat	GP	pat	GP	pat	GP	pat
Country level								
gatekeeper role (1=yes)	-3.29*	-.09	3.24	11.90*	-1.25	7.88	1.47	2.82
employed (1=yes)	4.64*	.36	-6.94	-6.27	-5.99	-5.72	3.36*	.88
General Practitioner level								
gender (1=♀)	-1.42	-.08	2.84	2.74	.84	-.45	1.45	2.72
age	.13*	-.05*	-.11	-.00	-.13	-.32*	.19*	.25
workload per week	-.00	.00	-.00	-.00	.04*	.00	.02*	.04*
full-time (1=yes)	-.09	.05	.96	-.00	.17	.57	.54	-.61
Patient level								
gender (1=♀)	.20	.56*	.82	4.48*	.17	2.67*	.63	1.82
age	-.07*	.07*	.03	.13*	.03	.17*	-.11*	-.03
education (1=low, 3=high)	-.76*	.30*	2.25*	.14	.89	.96	.47	1.10
psychosocial problems (1=yes)	-1.80*	-.29	-1.51	3.46	-9.29*	-11.02*	6.40*	14.76*
emotional feelings (1=yes)	-.39	-.17	-.84	.75	-.20	.21	-.68	1.30
poor health (1=yes)	1.29*	-.19	.35	1.29	3.59*	4.97*	-1.64*	-4.16*
psychosocial diagnosis (1=yes)	1.71*	-.43	-2.32	8.36*	-4.05*	-2.21	3.11*	10.64*
psychosocial background (1=no, 5=yes)	.39*	-.01	-.53	3.61*	-2.18	-.51	1.74*	4.02*
familiarity (1=bad, 5=good)	-1.27*	.16*	-.50	.11	-2.04*	-.37	.14	.55
consultation length	.91*	.26*	2.79*	.47*	2.85*	2.30*	1.35*	2.62*

* P ≤ .05

5.4 Discussion

The first research question was whether doctor-patient communication differs between European countries. By observing videotaped consultations, the verbal affective and instrumental behaviour of both doctors and patients was studied together with doctors' nonverbal behaviour, viz. a doctor's patient-directed gaze. The overall picture is that the communication styles of doctors as well as patients differs among the European countries, but these differences agree in only a few respects with the distinction between the health care system characteristics, such as the gatekeeping role of the general practitioners.

Comparing the communication patterns of doctors and patients the following broad characterizations of the consultations in the different countries can be given:
The Netherlands: instrumental, with an emphasis on information and advice giving expressed in much biomedical talk; affective behaviour, showing more partnership building (paraphrasing) than rapport building (concern, worry, empathy); average patient-directed gazing; medium consultation length.
The United Kingdom: verbally affective with a lot of agreements and social talk; not so much information giving; the orientation of patients in particular is more psychological than biomedical ; much patient-directed gazing; medium consultation length.
Spain: instrumental with an emphasis on doctors asking questions; relatively more psychosocial talk; less affective behaviour; less patient-directed gazing; short consultations.
Belgium: very instrumental with an emphasis on doctors giving information; emphasis on biomedical issues; relatively little patient-directed gazing; long consultations.
Germany: verbally affective with much rapport building; on the instrumental side much counselling and much biomedical conversation; medium patient-directed gazing; short consultations.
Switzerland: much affective behaviour such as agreement and rapport building; much giving of information; both biomedical and psychosocial talk; much patient-directed gazing; long consultations.

Differences in affective, socio-emotional communication revealed different pictures for the four distinctive types of affective behaviour. In Germany and Spain *social talk* between doctors and patients was less common than in other countries. In Germany this is probably a consequence of the particularly high number of consultations leading to a heavy workload. In Spain, however, the doctors have a much lighter workload, indicating that the relatively little social conversation in this country may be a cultural characteristic; that is to say talking about non-medical topics may not be considered good form. *Signs of agreement or understanding* (hmm, yes, I see, OK) were also less usual in Spain. In the English and Swiss consultations, agreeing with the other person was more common on both the doctors' and the patients' side. Agreeing also appears to reflect different conversational styles, especially in the United Kingdom and Spain.
The disclosure of concerns or indications of distress, the sharing of understanding or emotional statements ('rapport building') occurred most often in Switzerland and Germany by both the doctors and their patients. Rapport building in particular conveys doctors' involvement with their patients and their stories and is therefore important for creating a therapeutic relationship. *Partnership building* (paraphrasing, checking) was most often displayed in Switzerland, the United Kingdom and—only by the doctors—in the Netherlands.

Instrumental, task-focused behaviour showed a more consistent picture. In Switzerland, Germany and Belgium the general practitioners gave more *procedural instructions* such as orientations and directions to structure the consultation. In these countries, the doctors also *asked for information* more often and (except in Germany) gave more information and explanation to their patients about medical, therapeutic, lifestyle and (psycho)social issues.

However, the Dutch doctors also gave a lot of information. Perhaps the more instrumental communication style of the Dutch general practitioners is associated with the Dutch policy of using the professional standards of care in general practice developed by the Dutch College of General Practitioners.

Patients' instrumental talk reflects their doctors' instrumental behaviour regarding asking questions and giving information. Apparently, doctors and patients adapt to each other and probably to the norms prevailing in the different countries. Nevertheless, patients ask their doctors quite a few questions; this is a cross-cultural phenomenon in the European countries studied.

Another approach to the variation in communication is to draw a distinction between the proportions of *biomedical and psychosocial talk*, including questions, information and (only by doctors) counselling. This approach yields an impression of the type of conversation, irrespective of the consultation length. In the German and Dutch consultations the doctors and their patients talked relatively more about biomedical than psychosocial issues. The orientation of the Spanish and Swiss doctors was less medical. What became clear was that in every country the orientation of the doctors was relatively more biomedical than was that of their patients. This is hardly surprising, because doctors have to inform their patients about the cause and course of the health problems presented and the therapeutic regimen.

The second question addressed was whether differences in health care systems were related to doctor-patient communication, while taking into account possibly confounding factors such as consultation length and psychosocial problems. The differences in health care system characteristics were only partly reflected in the communication style of the general practitioners and their patients. It seemed that, with respect to affective communication, only partnership building (paraphrasing, checking, asking for clarification) was related to the gatekeeping role of general practitioners. Statements directed at partnership building were given more often, by the doctors as well as the patients, when the general practitioners served as gatekeepers. So, although a more affective communication style was expected from the gatekeeping general practitioners, it was not found. Further, the salaried general practitioners expressed fewer agreements and less understanding than their self-employed colleagues in other countries. To show interest in a patient's story or to encourage a patient (by signs of agreement and understanding) to tell the whole story may be a cultural custom. The self-employed general practitioners, who have fixed lists of patients, asked fewer questions and talked less about psychosocial issues than their salaried colleagues, as was expected. However, in only one country (Spain) were the general practitioners not self-employed. It is therefore recommended that this study should be extended by including more countries with salaried general practitioners before final conclusions are drawn.

With respect to instrumental communication (asking questions, giving information and counselling) it was found that, in the gatekeeping countries, the general practitioners asked patients fewer questions, while their patients gave their doctors more information. It would seem that these patients spontaneously inform their doctors themselves. This spontaneity may result from the greater degree of acquaintance that was expected in countries where patients are registered with one doctor. In non-gatekeeping countries patients are free to choose another doctor instead of always visiting the same one.

This study shows that patient characteristics are the major predictors of the communication style of doctors and patients. The relationship between psychosocial problems and psychosocial communication was expected and can be readily understood. Similarly, if doctors suspect that a patient's problem has a psychosocial character, these aspects are indeed discussed.

Gender differences were apparent in the more affective as well as the instrumental

communication of female patients. The doctors' gender was only related to more rapport and partnership building, an association often found in earlier studies. These studies showed that female doctors were more likely to show affective behaviour, to accept patients' feelings, to pay more attention to psychosocial aspects and to allow a patient to make a greater contribution.[6,31] A more complicated point is that general practitioners with a greater workload (office and home consultations and phone calls) talked more with their patients about psychosocial issues. A possible explanation might be that these general practitioners see patients with psychosocial problems more often through having more patient contacts and as a result are more acquainted with such problems.

It was expected that general practitioners serving as gatekeepers would know their patients better. However, the ratings these general practitioners allotted to their acquaintance with their patients were not any better than those of their colleagues in the non-gatekeeping countries. Apparently, registration with one general practitioner, as is the custom in the gatekeeping countries, does not necessary lead to general practitioners having a better knowledge of their patients. Continuity of care is probably of equal importance for all patients, irrespective of the health care system characteristics. They may therefore not choose another doctor, although they would be free to do so. In view of the advancing development of cross-border health care and health care reforms in different European countries this is an important finding. European health care politicians are advised to take this issue into consideration when striving to attain the integration of health care policies in Europe.

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6   OVERVIEW AND CONCLUSIONS

The main aim of the Eurocommunication study was to compare doctor-patient communication in six European countries and to investigate the influence of healthcare system characteristics on doctor-patient communication. Communication is carried out through an exchange of verbal and non-verbal information. The processing of information is likely to be influenced positively by affective behaviour (verbal and non-verbal expressions of interest and concern), a patient-centred attitude, and instrumental behaviour (asking questions, giving information and advice). A patient visiting a doctor wants to 'know and understand' as well as to 'feel known and understood'. Both sets of needs can be met by the two aspects of communication mentioned: instrumental behaviour and affective behaviour.

The relationship between healthcare system characteristics and doctor-patient communication was studied in the Netherlands, the United Kingdom, Spain, Belgium, Germany, and Switzerland. The various characteristics were: gatekeeping system (in the Netherlands, United Kingdom and Spain general practitioners serve as gatekeepers); fixed patient lists (in the gatekeeping countries); employment system (in Spain general practitioners are salaried); payment system (fee-for-service in Belgium, Germany and Switzerland, capitation in the United Kingdom and Spain, a mixed system in the Netherlands).

With respect to the influence of healthcare system characteristics on doctor-patient communication, it was expected that:
–   in gatekeeping countries (with fixed lists of patients) doctors would show a more affective communication style with less biomedical but more psychosocial talk, and would be better at picking up cues from patients;
–   in countries with self-employed doctors consultations would be shorter; less time would be spent in talking with patients, and there would be less psychosocial communication; the doctor's workload would be heavier;
–   in countries where the payment system is based on fee-for-service, doctors would talk less with their patients and perform more interventions; their communication style would be more instrumental than affective.

The following research questions were formulated:
1)   What differences are there between European countries in patient-reported importance and performance of communication aspects?
2)   What differences are there between European countries in doctor-patient communication?
3)   Are these differences related to healthcare system characteristics?

The first topics of study were the importance patients attach to certain aspects of doctor-patient communication and the doctors' performance of these aspects as patients experience them. The actual communication between doctors and patients was then investigated. In this chapter the main findings are summarized and discussed. A characterization of communication behaviour in the various countries is then given. New questions generated by this study are put forward as suggestions for future study. Lastly, recommendations are proposed for healthcare policy and the education and training of general practitioners. First however, some methodological issues of the study are described together with their possible consequences for the interpretation of the results.

6.1 METHODOLOGICAL ISSUES

This European study on doctor-patient communication is the first to compare differences between several countries in a micro-analytical way. Moreover, the relationship between doctor-patient communication and healthcare system characteristics has not been previously studied.

The decentralized data collection drawing on the observation of videotaped consultations, patient and GP questionnaires and GP registration forms was complicated, but was carried out successfully. Uniform measurement methods were used to facilitate reliable comparisons between countries. All observers (2-5 per country) were native speakers, trained in coding the videotaped consultations in the same way by the same person in order to reach as high a reliability as possible. The inter-rater reliability of the doctors' and patients' verbal behaviour per country was generally satisfactory (79% > 0.70). Only in a few categories was the reliability low; this occurred for instance - particularly in Switzerland - with respect to the distinction between giving information and counselling. The inter-rater reliability of the affect ratings and patient-centredness, expressed in percentages of similarity, was fairly good (70-100%).

On completion of the observation training an international network of researchers was established (by means of e-mail and workshops) in order to discuss coding problems and other questions related to doctor-patient communication. The participants of the study had fruitful and interesting discussions during several meetings.

The questionnaires used for the general practitioners were similar to questionnaires used in a former study in European countries (Task Profile Study, Boerma 1997). This similarity facilitated the comparison of the two groups of general practitioners on certain characteristics, including age, gender, and whether they had had vocational training. On the basis of this comparison, the representativeness of the participating general practitioners and the resulting generalization of the results could be examined.

Problems with ethical committees were duly resolved. The procedure of asking these committees for permission took a long time in the United Kingdom, because various committees in different places had to agree to the study. Furthermore, although the fieldwork connected with data collection gave rise to some problems, all data were collected satisfactorily and in good time. Sometimes data collection took a considerable time because of the distances which had to be travelled; this was particularly so in Germany. Only a few patients were too rushed to complete the after-visit consultation, or left the practice without having been noticed by the researcher; this could occur when there were many patients in the waiting room.

Attention needs to be paid to certain limitations of the study. The sampling method differed per country for reasons of the varying willingness of general practitioners to participate, or for other practical reasons. The doctors were recruited by means of a random national sample (Netherlands, Flemish-speaking Belgium), existing general practitioner research networks (United Kingdom, Germany), quality circles (Switzerland, French-speaking Belgium) or health centres (Spain). In Germany a call was placed in specialist publications and the snowball method was used. A consequence of the differences between the sampling methods may have been that the doctors were not representative of their colleagues in their own country, so that comparisons between countries may be biassed. Attention is paid to these possible problems below. However, apart from the method used, the doctors who participated in the study were probably more interested in doctor-patient communication than their colleagues; they were not reluctant to take part in an observation study (in which video recordings were used). All the participating doctors seemed to have a particular interest in general practice research, teaching general practice medicine, and continuous education, including courses

in communication skills. It was therefore considered that a comparison could be made between the six countries, although the picture of the general practitioners' communication may be somewhat over positive.

One of the intentions of the Eurocommunication study was to include an equal number of male and female doctors so that an investigation could be undertaken in a continuation of the present study of the gender differences between the four gender dyads (♂GP/♂ patient, ♂/♀, ♀/♂, ♀/♀). An over sampling of women was therefore aimed at in all countries, but it was only attained in the Netherlands and Spain, although in Switzerland relatively more women also took part. This over sampling in the Netherlands and Spain might have caused some bias, but the study results only showed the influence of a doctor's gender on some of the affective communication aspects. Female doctors were likely to show more empathy, express more concern and reassurance, and to paraphrase more often. So, the affective behaviour of the Netherlands, Spanish and Swiss doctors studied may be relatively more affective in these respects as compared to a random sample.

Other possibly confounding characteristics compared between the two study populations (Task Profile Study and Eurocommunication Study) were the doctor's age; whether vocational training was followed; the degree of urbanization of the practice; whether working in a solo or group practice. The Netherlands, English, Spanish and German general practitioners followed vocational training relatively more often and the Belgian and the Swiss less often, which may have influenced their communication style.

Except for Belgium and Switzerland, more doctors working in solo practices participated. The English and Spanish doctors were practising more often in inner cities, whereas the Netherlands and Swiss doctors practised less often in rural areas. The general practitioners' workload was also compared, but showed no differences; the workload was lower in each country in comparison with .

In Spain only salaried general practitioners from the urban and suburban region of Malaga city participated and all were working in health centres. So, the Spanish doctors are not representative for the whole country, where also private, not salaried doctors practise. The general practitioners of the other countries reflect the population of GPs within countries better.

If the characteristics mentioned above seemed to influence doctor-patient communication, the possible bias caused by over or under representation of doctors with these characteristics has been mentioned.

Comparison of GP characteristics between the countries showed that the Spanish doctors taking part in this study were quite different from those from the other participating European countries. They were younger, had - as a consequence - less experience as a general practitioner, were more often female, and they worked - as did their English colleagues - in group practices located in (sub)urban areas. The Belgian general practitioners were older and had much more experience. The Swiss and Belgian GPs often worked in a private solo setting and fewer of them followed vocational training. So, the samples of general practitioners differ between countries in some aspects.

On the patients' side, there appeared to be hardly any bias caused by patients' refusal. The patients' ages, the psychosocial background of health problems and types of health problems were much the same, but relatively fewer female patients took part. The non-response rate (21%) was comparable with previous studies. However, only half the general practitioners registered the non-responders; it was not done in every country. So, more patients may have refused, for example in deprived areas, and possibly more bias would have appeared if the refusals had been reported more accurately.

Relevant differences in patient characteristics between the countries were restricted to gender, educational level, and health status. The Netherlands and Belgian patients have a higher level of education and there are more female Spanish patients. The English and

Spanish patients reported poorer health. This is probably a result of the larger number of city practices, where there are relatively more unhealthy people than in rural areas. It appeared that some of the English patients erroneously reported a vocational profession as higher vocational training; the influence on the results was checked and was mentioned where necessary.

In spite of the limitations mentioned above, this first cross-national study on doctor-patient communication revealed interesting results for discussion; they yield certain recommendations for healthcare policy and the education of general practitioners.

6.2 MAIN FINDINGS

Communication patterns
Comparing the communication patterns of general practitioners and patients the following approximate characterizations can be given of the consultations in the various countries:
The Netherlands: instrumental, with an emphasis on information and advice giving expressed in much biomedical talk; affective behaviour shows more partnership building (paraphrasing) than rapport building (concern, worry, empathy); average amount of patient-directed gaze; medium consultation length.
The United Kingdom: verbally affective, with a lot of agreements and social talk; less information-giving; patients' orientation in particular is more psychological than biomedical; large amount of patient-directed gaze; medium consultation length.
Spain: instrumental, with an emphasis on the GP asking questions; relatively much psychosocial talk; less affective behaviour; not so much patient-directed gaze; short consultations.
Belgium: very instrumental, with an emphasis on GPs giving information; emphasis on biomedical issues; relatively little patient-directed gaze; long consultations.
Germany: verbally affective, with much rapport building; on the instrumental side much counselling and much biomedical conversation; medium amount of patient-directed gaze; short consultations.
Switzerland: much affective behaviour, such as agreement and rapport building; much information-giving; both biomedical and psychosocial talk; considerable amount of patient-directed gaze; long consultations.

Patient-reported importance and performance of communication aspects
The findings suggest that the general practitioners' gatekeeping role is an important factor in the importance patients attach to communication aspects and in patients' reports of doctors' performance of these communication aspects. In the non-gatekeeping countries the patients generally valued communication aspects more highly than in the countries where general practitioners serve as gatekeepers. Since healthcare politicians attach considerable importance to patients' perceptions, this is an important finding. The fulfilment of aspects relevant for patients could contribute to patients' compliance and satisfaction and other outcome-related factors. The patients of the non-gatekeeping doctors (in Belgium, Germany and Switzerland) considered the discussion of both biomedical and psychosocial communication aspects more important than did the patients in the gatekeeping countries. The importance of psychosocial issues was particularly highly valued by patients in the non-gatekeeping countries. As these patients reported, their doctors indeed discussed more often those issues that were important from the patients' perspective, whether they presented a psychosocial problem or not.
A possible explanation may be that, in the non-gatekeeping systems, general practitioners may make more effort to satisfy their patients and discourage them from choosing another general practitioner, or a medical specialist. This may be especially so when doctors have

small practices, because of an over presentation of general practitioners, as is the case for example in Belgium.

A further explanation may be found in the agreement between importance and performance. This agreement was generally high, although better with respect to psychosocial than biomedical communication aspects. However, the non-gatekeeping general practitioners talked to their patients relatively more often about psychosocial issues than seemed necessary when considered in terms of the importance attached. Again, this may be a consequence of a health system requiring patients' satisfaction with the care received from their doctors.

The relatively extensive patient-reported communication about both biomedical and psychosocial issues in the countries with a fee-for-service reimbursement system (the non-gatekeeping countries) was not expected. It was considered that this type of payment system might lead to other emphases in the doctors' practice style, and that this might be reinforced by the fact that general practitioners in these countries are self-employed. This expectation was derived from the fact that talking is not paid for in addition to other interventions. In accordance with the patients' reports, this expectation was indeed found to be valid for the non-gatekeeping countries. However, patients also reported more physical examinations in Spain, where the general practitioners are not self-employed. Apparently, the employment system, as far as this study is concerned, does not show a relationship with the patient-reported importance and performance of communication aspects.

Agreement between importance and performance was generally high, although better as regards psychosocial than biomedical communication aspects. The non-gatekeeping GPs talked to their patients more often about psychosocial issues than - in terms of importance attached - seemed necessary. Again, this might be a consequence of their health system that demands satisfaction of the patients. One could argue that health policy aims at a balance of supply and demand, also with respect doctor-patient communication, in view of an efficient health care. However, this `communicative care' should not be defined by the needs of the patients only. If modern health care depends on patient understanding and cooperation, then professionals and policy makers may want to ensure that patients have information about and are able to cope emotionally with their problems.

In view of the quality of health care, the reasons why the patients' biomedical `preferences' were not met, in Germany and the Netherlands in particular, should be traced. This might result in a continuation or even deterioration of the patients' health problems.

Patient characteristics such as gender, age, education, psychosocial problems, poor health and feelings of depression were important in explaining differences in the importance and performance of communication aspects. Talking about biomedical issues was more important for males, the relatively young and patients in poor health. Talking about psychosocial issues was particularly important for both male and female patients, possibly those with psychosocial problems, or patients in relatively poor health with feelings of depression.

General practitioner characteristics did not seem to affect the importance or performance of these aspects, with one exception. Doctors and patients talked more about psychosocial issues when the doctor diagnosed the patient's problem as psychosocial, or suspected a psychosocial aspect in the problem presented. This may be a signal that general practitioners actually discuss psychosocial problems where this is important for the patients, regardless of the prevailing healthcare system.

Doctor-patient communication
The expected relationship between a gatekeeping system and affective behaviour was only partly found. In the gatekeeping countries the general practitioners and patients more

frequently used affective expressions such as paraphrasing and checks of understanding (partnership building). Other affective communication such as showing empathy, concern, or social talk showed no differences. The assumed relationship was based on the expected higher familiarity between doctors and their patients in gatekeeping countries because they work with fixed patient lists. A fixed list means that patients invariably visit the same general practitioner. However, the doctors reported knowing their patients somewhat better in the non-gatekeeping systems without fixed lists. Perhaps these general practitioners make special efforts to discourage their patients from visiting another doctor by paying them attention and ensuring their satisfaction as much as possible. The patients therefore probably feel no need to change from one general practitioner to another, although they are free to do so. Instead, they may prefer to consult their 'own' doctor who knows their problems and psychosocial background, is well known to them, and in whom they have confidence.

Differences in instrumental behaviour between gatekeeping systems were limited. The gatekeeping general practitioners asked fewer questions, but their patients still told them more. These patients are possibly more used to recounting their problems and the context surrounding them. Furthermore, it was a common feature in each country for patients to ask their doctors hardly any questions. It is however important for patients to ask for information in order to be able to understand fully what the doctor is telling them about their health problems and possible treatment. Having good information may influence the compliance of patients and thus the quality of healthcare.

The different emphasis on biomedical versus psychosocial talk, either when giving information, asking questions or counselling, did not reflect the line between gatekeeping and non-gatekeeping healthcare systems in all respects. It was expected that in gatekeeping systems less time would be spent in biomedical talk, such as history taking and routine questions, because the doctors and patients ought to have been more familiar to each other. This proved to be valid, but the expectation that as a result more time would be left for psychosocial talk was not found to be valid. Further, the doctors in the gatekeeping countries were, as expected, more patient centred, especially with respect to a doctor picking up cues from a patient. This was more often done by these gatekeeping doctors. Long-term acquaintance with a patient may make it easier for a doctor to pick up cues and hidden signs of mental distress.

Patient characteristics, especially the psychosocial components of health, seemed to exert most influence on the communication style of both doctors and patients. In consultations with patients with poor health and no psychosocial problems there was a lot of biomedical talk between doctor and patient. Patients with psychosocial problems (indicated either by the general practitioners or by the patients themselves) and reporting relatively good health discussed psychosocial issues more often. Influences from patients' gender, age and education were also found. Female patients, for example, discussed biomedical health problems more extensively than males, they asked more questions, gave more information and expressed more affective behaviour, such as showing feelings of concern, empathy and optimism, especially when the doctor was female. More highly educated patients were asked fewer questions by the doctor, but they themselves asked more questions and they obtained more information from their doctors. At the general practitioner level, female doctors were more likely to show affective behaviour in that they paid more attention to patients' feelings and emotions.

Since, as reported above, gender was found to be related to communication style, there may have been some influence on the results through the higher proportion of female patients and female doctors in Spain and in the Netherlands (where there was relatively more affective and biomedical communication). Possibly, doctors and patients would have been found to talk less than was the case in this study if the female/male ratio had better reflected the actual

situation.

The expected influence of the employment system on doctor-patient communication was shown in the increased amount of talk about psychosocial issues by the employed (Spanish) general practitioners. So, the expectation that self-employed doctors would spend less time talking, especially about psychosocial issues, proved to be valid. This can be more readily understood if doctors are paid a fee for service (going together with non-gatekeeping in this study), and talking is not paid for, in contrast with interventions. In this case they would be expected to perform more interventions. This expectation was indeed reflected in the higher number of instrumental treatments in fee-for-service systems, but not in the diagnostic procedures. The expectation that the self-employed would choose to maximize their workload (expressed in number of consultations) and would have short consultations, aimed at earning more money, was not verified. In Germany doctors saw many patients and had short consultations, whereas in Switzerland and Belgium the general practitioners saw relatively few patients and their consultations were twice as long. The employed (Spanish) doctors had more, but shorter consultations than the latter.

Summarizing, this study shows that healthcare system characteristics at the macro level are less important than micro level factors in explaining differences in doctor-patient communication. Apparently, the relationship between macro and micro level characteristics is more complicated than has been assumed. This was demonstrated for example by the expected, but unproven association of fixed patient lists with a high level of familiarity between doctors and patients.

The implication for general practitioners is that they should be aware of a tailor-made doctor-patient communication style. Patients' perceptions are important for health policymakers in their drive towards good quality healthcare. This may imply that in multicultural societies attention must be given to culturally sensitive doctor-patient communication.

6.3 FUTURE STUDIES

New questions generated by this study include comparisons at a cross-national level of the relationship between doctor-patient communication with reference to gender differences between the four gender dyads; mental health; prescriptions and referrals; health outcome measures; patient centredness; consultation length; the reflection of patient-reported importance and performance in actual doctor-patient communication; and cultural influences. The relationship between communication and health-outcome related variables such as physiological measures has rarely been studied, and no comparison has been made between different countries. Cultural norms and values certainly influence the communication between doctors and their patients, for example in the way patients present their problems, or the type of information doctors give to their patients. Further, the measurement instrument of patient centredness should be validated by comparison with other instruments.

In order to acquire more insight into the influence of healthcare system characteristics it is necessary to include other countries with salaried general practitioners, because in the present study only the Spanish represented the employed doctors. The transition from centralized state systems to new systems with professionally trained general practitioners, as in Eastern Europe, is another interesting characteristic to be studied in the near future.

6.4 RECOMMENDATIONS

Differences were found at three different levels: between healthcare systems, general practitioners, and patients.

At the country level, the system of fixed lists of patients, parallel to the general practitioners' gatekeeper role, did not turn out to be as important as expected, neither with respect to

familiarity with and knowledge of patients, nor with respect to talking about psychosocial issues. So, the postulated advantage of the gatekeeping role has not been demonstrated in this study. However, the stronger position of general practitioners in gatekeeping countries regarding referrals and being the first doctors encountering health problems may still be advantageous in attaining a decrease in medical consumption.

Giving adequate information to patients should be emphasized in the education and vocational training of general practitioners. Similarly, a patient-directed gaze, reassurance and showing attention and empathy and - by no means least - answering a patient's questions may reduce embarrassment and dissatisfaction and encourage patients to ask questions. In addition, patients should be educated to ask questions that are important in helping them understand their problems. The doctors themselves or their practice assistants could make clear to patients the importance of their asking questions. Another possibility would be to ask patients to write down their questions beforehand. Patients should be educated to discuss all relevant health problems, including psychosocial problems, possibly by means of a public health campaign.

Traditional beliefs, differences in understanding health problems and treatment are some of the interrelated factors that may generate differences between cultures. A further investigation of these factors could contribute to efficient, good quality healthcare. Cultural aspects should be addressed in the professional and postgraduate education and training of doctors' communication skills. With the integration of Europe now in progress cross-cultural healthcare will doubtless become more commonplace in the near future.

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