Exploring cognitions in irritable bowel syndrome

implications for the role of the doctor

Sandra van Dulmen

In 1989, lang voordat Vrouwenstudies zich een min of meer vaste plek had verworven binnen de faculteit medische wetenschappen, bestond er nog een werkgroep 'sexe-specifiek onderzoek geneeskunde'. Via de toenmalige werkgroepsleden kwam mij ter ore dat het Centrum voor Vrouwenstudies voor de indertijd 'niet-participerende' faculteiten, waaronder de faculteit medische wetenschappen, 'tijdelijke middelen' beschikbaar stelde voor het verrichten van onderzoek met een vrouwenstudies-vraagstelling.
In het voorjaar van datzelfde jaar zijn Henk van der Velden, Gijs Bleijenberg, Jan Fennis en ik voor het eerst bij elkaar gekomen ter voorbereiding van het onderzoeksvoorstel dat wij wilden indienen om voor deze subsidie in aanmerking te komen. Buikpijn, een interessegebied van Gijs en Jan, bleek een typische 'vrouwenkwaal'; veel meer vrouwen dan mannen consulteerden een arts voor deze klacht. Bovendien, zo was onze gedachte, vonden vrouwen waarschijnlijk minder gehoor voor hun buikklachten omdat het overgrote deel van de artsen een man was en een sexe-asymmetrisch arts-patiënt contact een grote kans had op miscommunicatie, iets dat het beloop van buikklachten nadelig zou kunnen beïnvloeden. Immers, eerder onderzoek wees erop dat gerichte aandacht van de arts voor de betekenis van de klachten voor de patiënt wel eens erg belangrijk zou kunnen zijn aangezien niet-somatische klacht-aspecten, waaronder klachtgerelateerde cognities en emoties, samen bleken te hangen met het beloop van de klachten. Interessante bevindingen omdat aan de meeste buikklachten geen lichamelijke afwijking ten grondslag ligt en dientengevolge geen effectieve behandeling voor handen is. Genoeg reden dus om de rol van klachtgerelateerde cognities en emoties binnen het medisch consult met patiënten met buikklachten eens grondig te gaan onderzoeken.

lees door aan de binnenzijde

In de loop van 1990 werd ons onderzoeksvoorstel door het Centrum voor Vrouwenstudies goedgekeurd; het onderzoek kon beginnen. Op 1 januari 1991, nadat ook Henk Mokkink zich als methodologisch deskundige bij ons had aangesloten, zijn we daadwerkelijk met het onderzoek van start gegaan. Het streven was om 150 naar de polikliniek interne geneeskunde verwezen patiënten met buikklachten in te sluiten. Uiteindelijk zijn, in ruim één jaar tijd, 143 patiënten met buikklachten door mij 'onderschept', ondervraagd en een half jaar lang gevolgd in hun gang door de gezondheidszorg. Niet alleen deze patiënten, maar ook hun behandelend arts op de polikliniek, maakten mij deelgenoot van hun beleving van de klachten (van de patiënt) en de daaraan gerelateerde cognities en emoties. Later hebben ook de huisartsen gegevens verstrekt over de medische consumptie van deze patiënten en bovendien inzage verleend in hun verwijsgedrag. De Zorgverzekeraar VGZ te Nijmegen heeft ons hiertoe, na gegeven toestemming van de huisartsen, de verwijscijfers van een groot aantal huisartsen verstrekt. Bij het overgrote deel van de verwezen patiënten werd geen afdoende lichamelijke verklaring voor de buikklachten gevonden; de klachten waren functioneel. Om tot deze conclusie te komen hebben twee internisten, M.Meuwese en J.Fennis, onafhankelijk van elkaar, de patiëntgegevens beoordeeld.

Het was voor de polikliniek interne geneeskunde geen eenvoudig onderzoek; medewerkers aan de balie hebben ruim een jaar lang aan iedereen die opbelde om een afspraak te maken gevraagd of zij voor buikklachten kwamen en zo ja, of zij bereid waren eerder naar de polikliniek te komen voor het invullen van een vragenlijst omtrent hun klachten. Niet altijd verliep dit vlekkeloos; zo nu en dan glipte er een patiënt door die helemaal geen buikklachten had. Meestal ging het echter goed mede dankzij de inzet van de co-assistenten Manon Derhaag, Jan Grutters en Bas Molenaar die tijdens mijn zwangerschapsverlof gezorgd hebben voor continuïteit in de dataverzameling. Jan Grutters heeft mij bovendien met zijn enthousiasme en helderheid enorm op weg geholpen met de eerste data-bewerkingen en statistische analyses. Ook Mark Weissmann, Annemarie Pinkse en Dave Mier hebben hun stage binnen dit onderzoek vervuld.

Dit onderzoek heeft mij veel geleerd; de bijna wekelijkse bijeenkomsten met Gijs Bleijenberg en Jan Fennis lieten mij zien hoe wetenschap en praktijk vervlochten zijn, Gijs door zijn nauwgezetheid en grote deskundigheid, Jan door zijn uit-het-leven-gegrepen praktijkvoorbeelden. Naast hun onmiskenbare bijdragen hebben ook anderen ervoor gezorgd dat dit onderzoek ook echt afgerond kon worden; vooral Trudy en mijn vader en moeder hebben mij door de jaren heen enorm gesteund en gestimuleerd.

Dick is echter degene geweest die er voor heeft gezorgd dat ik als werkende moeder alle tijd en ruimte had om mijn proefschrift af te schrijven. Hij heeft al die jaren mijn gebrek aan tijd, energie en aandacht gecompenseerd, zodat Lies en Lot weinig van mijn afwezigheid hebben gemerkt.

Exploring cognitions in irritable bowel syndrome implications for the role of the doctor

A.M. van Dulmen

Exploring cognitions in irritable bowel syndrome implications for the role of the doctor

een wetenschappelijke proeve op het gebied van de Medische Wetenschappen

Proefschrift

ter verkrijging van de graad van doctor
aan de Katholieke Universiteit Nijmegen,
volgens besluit van het College van Decanen in het
openbaar te verdedigen op maandag 18 november 1996
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door

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geboren op 6 mei 1961
te 's-Hertogenbosch

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CONTENTS

chapter 1

GENERAL INTRODUCTION

BACKGROUND OF THE STUDY

Abdominal complaints are widespread in the general population. The estimated prevalence is 12-25%[1-7]. Moreover, 25-38% of persons with abdominal complaints seek medical health care[2,4,5,8]. Consequently, doctors are frequently confronted with abdominal complaints. In the majority of the cases no somatic explanation can be found. These so-called functional abdominal complaints are also known as broadly defined irritable bowel syndrome (IBS), referring to abdominal pain with or without disordered defecation[9]. The prognosis of the complaints is rather poor: 35-57% are unchanged or worse after 2-7 years[10-13]. In addition, conventional medical treatments, such as medication and dietary advice, are rather ineffective in alleviating the complaints[14,15]. So, obviously, IBS poses a major medical problem.

Not every person with abdominal complaints appears to seek health care. Moreover, the health care seeking behaviour of persons with abdominal complaints does not appear to be related to the severity of their complaints[16]. Consulters do appear to differ from non-consulters in having more psychological distress and abnormal illness behaviour, as expressed in patients' health beliefs and concerns[17-20], factors which might also have relevance in persons with other complaints. A few years ago, Bleijenberg and Fennis investigated whether patients with functional abdominal complaints differed anamnestically or psychologically from patients with somatically explained abdominal complaints[12]. Their findings indicated that both groups of patients did not differ, i.e. patients with a peptic ulcer had as much dysfunctional thoughts and feelings about their complaints as compared with patients with IBS. This seems to indicate that psychological factors have indeed relevance for functional as well as for somatically explained complaints. This was confirmed by Smith and colleagues who found that psychological factors influenced the health care seeking behaviour of patients with abdominal complaints, irrespective of the explanation for the complaints[19].

The same psychological factors that did not appear to distinguish somatically explained from functional abdominal complaints, did appear to be related to the course of the complaints; the outcome of abdominal complaints appeared to be inversely related to patients' level of anxiety, catastrophizing cognitions, and somatic attributions[12,13]. Apparently, functional abdominal complaints are maintained by non-organic complaint dimensions, such as complaint-related cognitions and behaviours. Therefore, it may be important to analyse these dimensions during medical consultations. Yet, especially in outpatient care,

doctors may not consider such an analysis to belong to their primarily somatically oriented profession. In addition, doctors may wonder how they should handle complaint-related cognitions, emotions and behaviours. After all, medical consultations are not aimed at behaviour modification.
The purpose of this study is twofold: to demonstrate the importance of psychological factors for medical consultations, and to examine if medical doctors can bring about behaviour changes which might contribute to an improvement of complaints in their patients.

OUTLINE OF THE THESIS

Chapter 2 of this thesis examines the extent in which complaint-related cognitions and emotions of referred patients with functional abdominal complaints are recognized by the medical specialist at an out-patient clinic for internal medicine. The way patients' complaint-related cognitions and emotions change through a series of out-patient consultations and in addition, the extent in which doctor- and consultation dependent factors are related to these changes is described in chapter 3. Whether positive changes in patients' dysfunctional cognitions are related to patient outcome in terms of improvement of the complaints and patient satisfaction is explored in chapter 4. In chapter 5 a comparison is made between IBS-patients in general practice and out-patient care in terms of complaint severity and attributions. Then, in chapter 6, it is examined whether positive changes in patients' cognitions are related to patients' medical consumption, i.e. the number of visits to the general practitioner and the use of medication. Chapter 6 also examines the relationship between the general referral behaviour of general practitioners and the complaint-related cognitions and emotions of patients who have been referred to the out-patient clinic for internal medicine. Apart from that, in chapter 7 a controlled study is described in which both the short- and long-term efficacy of a cognitive behavioral group therapy for patients with refractory IBS is evaluated. Chapter 8 concludes this thesis with an overview of the importance of patients' complaint-related cognitions and anxiety in their health care seeking behaviour, as well as in consultations in primary, secondary and tertiary care. Practical implications will be given of the role of patients' complaint-related cognitions and emotions in every phase of medical health care, that might contribute to doctors' effective reassurance of IBS-patients and other complaints.

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DOCTORS' PERCEPTION OF PATIENTS' COGNITIONS AND COMPLAINTS IN IRRITABLE BOWEL SYNDROME AT AN OUT-PATIENT CLINIC

Dulmen van AM, Fennis JFM, Mokkink HGA, Velden van der HGM, Bleijenberg G. Doctors' perception of patients' cognitions and complaints in irritable bowel syndrome at an out-patient clinic. *J Psychosom Res* 1994; 38: 581-590.

ABSTRACT

Functional abdominal complaints (IBS) are widespread in the general population, especially among women. Non-organic dimensions of the complaint such as complaint-related cognitions and behaviour appear to be related to the prognosis. The prognosis could possibly be improved by changing these factors during medical consultations. Therefore, doctors have to perceive patients' cognitions and behaviour. But, do they perceive them correctly? One hundred and twenty patients with functional abdominal complaints referred to an out-patient clinic for internal medicine completed a questionnaire about their complaints and their complaint-related cognitions, behaviour, and anxiety prior to the first consultation. After the first consultation, doctors completed a similar questionnaire indicating their perceptions of patients' cognitions, anxiety, behaviour, and complaints. Complaints were perceived better than cognitions, anxiety, and behaviour. Doctors underestimated patients' expectations and secondary complaints and overestimated patients' pain-related attributions, and their catastrophizing and self-efficacy cognitions.

INTRODUCTION

Functional abdominal complaints, otherwise known as irritable bowel syndrome (IBS), are widespread in the general population. The estimated prevalence is 14-25%[1-3]. Nearly half of such persons seek health care[3]. Over 40% of all gastroenterology referrals concern functional disorders[4,5]. Consulters appear to differ from nonconsulters in having more psychological distress and abnormal illness behaviour, as expressed in patients' health beliefs and concerns[6-9]. Although equal numbers of women and men in the general population report functional abdominal complaints[2], more women visit doctors because of these complaints[10]. This predominance of women may be a consequence of their excess morbidity in general[11] or of doctors' gender bias in referring patients[12] and in perceiving psychological disturbances[13]. The prognosis of functional abdominal complaints appears to be poor: 35-57% are unchanged or worse after 2-7 yr[14-17], although one study presented a better outcome[18]. Psychological factors such as worrying about health, complaint attribution, and anxiety appear to be related to this prognosis[16,17]. When psychological and somatic treatments (such as medication and dietary advice) were compared, psychological treatments appear to have produced better results[19-22]. Functional abdominal complaints are maintained by non-organic complaint dimensions such as complaint-related cognitions and behaviour. Analysis of these dimensions seems to be

important[23]. By paying attention to patients' concerns, anxiety, expectations, and attributions during medical consultations and by changing these factors, abdominal complaints could possibly be diminished[24-29].
Doctors have to perceive patients' cognitions and emotions in order to change them. The present study explores the extent to which doctors are able to do this. As there is a discrepancy between the experiences and backgrounds of doctors and patients, one cannot expect perfect congruence between patients' complaint-related beliefs and doctors' perceptions of these beliefs. Doctors are especially trained to recognize somatic abnormalities. Therefore, one might expect greater similarity between doctors and patients with respect to somatic factors such as details of the abdominal complaints or the prevalence of secondary complaints, than with respect to psychological factors (cognitions, anxiety, and behaviour). The cognitions and emotions of female patients might be perceived more correctly than those of male patients[13] because research findings suggest that women express personal thoughts and feelings more easily[30]. Previous research suggests that one might expect more correct perceptions from female doctors[31] and by doctors in same-sex consultations (sex symmetry)[31,32].

In light of the above, we have formulated the following questions to be answered in this study:
1. Do doctors perceive patients' anxiety, pain-related cognitions and behaviour, and secondary complaints correctly?
2. Are doctors' correct perceptions related to characteristics of patients (sex, age, educational background), complaints (duration), doctors (sex), and/or consultations (sex symmetry)?

METHODS

Subjects and procedures

One hundred and thirty-four consecutive patients with abdominal pain referred by their general practitioners to the out-patient clinic for internal medicine between March 1991 and April 1992 were asked to participate in this study. All patients had to meet the entry criteria of initial referral and had to be able to read and understand Dutch. They also had to be between 15 and 65 yr old. They were asked to fill in a questionnaire prior to the first consultation. None of the patients refused to participate in the study.
After verification by two independent internists, 120 patients were diagnosed as

suffering from functional abdominal pain. The remainder of this paper relates only to this functional group. There were 75 women and 45 men, with mean ages of 36 (SD = 12) and 40 (SD = 11) yr (NS), respectively. Thirty per cent had experienced abdominal pain for less than 6 months, 70% for more than 6 months. The mean duration of abdominal pain was between one and two years. Fifty-two per cent of these patients had a lower educational background whereas 48% a higher educational background (at least high school).

Immediately after each consultation, doctors completed a questionnaire with questions identical to those answered by patients. They had to answer each question according to the way that they thought that the patient had answered it, thereby indicating their perceptions of the patient's scores. Thirteen doctors participated, six women and seven men, with mean ages of 30 (SD = 1.5) and 39 (SD = 7) yr ($P = 0.003$), respectively. All the female doctors and four male doctors were (senior) registrars in internal medicine. The other three male doctors were consulting internists.

Questionnaire

As patients had to complete the questionnaire before the first consultation, the questionnaire had to be short. For the purpose of analysis (see the *Statistical analysis* section), all variables were dichotomized later. The method of dichotomization is indicated for each of the subscales separately.

The questionnaire consisted of the following subscales:

State anxiety was measured using the shortened 10-item version of the Spielberger State Anxiety Inventory (STAI)[33] (Cronbach's $\alpha = 0.85$). The scores on each item ranged from (1) not at all, to (2) somewhat, to (3) moderately so, to (4) very much so. The sumscore was dichotomized into scores below and above 21. This standard score was based on the results of a previous study on patients with functional abdominal complaints[16], as well as on normative data from the STAI manual[33]. A score equal to or above 21 reflects an increased level of anxiety.

The nine questions regarding pain attributions[34] were derived from an earlier investigation[16] in which patients were asked to write down their ideas about what caused the abdominal pain. The scores on each of the nine attributions ranged from (1) total disagreement to (5) total agreement. Four items were excluded from analysis because of their low frequencies. The remaining five could be divided into three psychosocial and two somatic attributions (Table I). A dichotomy was obtained by joining the scores 'total agreement' and 'agree-

ment' vs the scores 'total disagreement', 'disagreement', and 'I don't know'. A high score on each item reflects strong beliefs with regard to psychosocial or somatic causes for the pain, respectively.

Four questions about *expectations* (two active and two passive) regarding the visit to the out-patient clinic were formulated. Active expectations implied active participation by the patient. Passive expectations implied that the doctor was expected to take initiatives and responsibility (Table I). Scores on these items ranged from (1) I don't expect this, to (2) I expect this somewhat, to (3) I expect this. These scores were dichotomized by joining the scores (1) and (2) vs (3).

Pain-related cognitions were investigated using the Dutch Pain Cognition List, an assessment instrument for the verbal cognitive component of chronic pain. The original scale consists of 50 items[35]. For the purpose of our study, nine items were selected. Factor analysis revealed two underlying factors. These were interpreted as self-efficacy cognitions (five items, $\alpha = 0.68$), e.g., 'I think I can influence the pain positively', and catastrophizing cognitions (four items, $\alpha = 0.71$), e.g., 'I often think, 'Why must this happen to me?''. Scores on each item ranged from (1) total disagreement, to (5) total agreement. The self-efficacy and catastrophizing sumscores were dichotomized according to comparable normative data[35] into scores below and above 16 and 12, respectively. High self-efficacy (score ≥ 16) reflects a strong belief in the ability to control the pain, whereas a score equal to or above 12 on the catastrophizing scale reflects catastrophizing thoughts about the pain.

Pain-related behaviour was investigated by asking patients about their avoidance behaviour and interference with daily activities. Both were assessed using four-point scales which were dichotomized by contrasting the scores 'no avoidance' vs 'avoidance' and 'much interference' vs 'hardly any interference'.

Several questions were asked about details of the *main complaint,* abdominal pain, namely duration (a nine-point scale with endpoints 'less than 1 month' and 'more than 5 yr'), severity (a five-point scale with scores from low to unbearable pain), and frequency of occurrence (a six-point scale with scores from less than once a month to daily). These scales were dichotomized into 'less than 6 months' vs 'more than 6 months' (duration), 'more than moderate' vs 'less than moderate' (severity), and 'daily' vs 'non-daily' (frequency).

Secondary complaints were measured by asking patients to indicate the presence or absence of 18 complaints, 13 gastrointestinal and 5 non-gastrointestinal. Only those complaints which were present in 10% or more of patients were

considered for analysis. Thirteen complaints met this criterium (Table I).

Statistical analysis

Statistical analyses were performed using the Mann-Whitney *U* test, the sign test, and Cohen's kappa[36]. The Mann-Whitney *U* test was used for investigating sex differences within patients' cognitions. The sign test was used to determine the direction of dissimilarities between doctors and patients. Kappas were used to measure the similarity between patients' cognitions and complaints and such cognitions and complaints as perceived by doctors. This statistic, meant to measure inter-observer agreement, corrects both for chance similarity and unequal distribution of frequencies. To use kappa reliably all variables were dichotomized using the criteria mentioned above. The significance of the kappas was determined by means of their standard errors. A significant kappa reliably reflects similarity above the level of chance. As the amplitude of kappa strongly depends on the prevalence of the similarity in the response categories distinguished, we will also present the percentage of observed doctor-patient similarity in order to assess this influence. In those cases in which there was no similarity between doctors and patients, the directions of these dissimilarities as expressed by doctors' over- and underestimations were investigated. Overestimations were defined as cognitions or complaints which were perceived by doctors but not reported by patients. Underestimations were defined as those cognitions or complaints reported by patients but not perceived by doctors.

Statistical significance for all tests was set at the 1% level.

RESULTS

Patients' cognitions

The pain-related cognitions, behaviour, and anxiety which patients presented are shown in the first column of Table 1. Using the criteria mentioned above, it was shown that half of the patients felt anxious before visiting the doctor. Psychosocial attributions were reported by about one tenth, and general somatic attributions were reported by more than half of the patients. Active and passive expectations were present in the majority of the patients. Almost half of the patients had catastrophizing and one third self-efficacy cognitions. More than half of the patients avoided at least one activity as a result of the pain and reported that their daily activities were interfered with by the pain. Female patients reported significantly higher scores on state anxiety, severity of the pain, and avoidance behaviour as compared with male patients. They also

reported significantly higher scores on the following secondary complaints: abdominal rumbling, abdominal distension, constipation, nausea, headache, and tiredness. No differences in the cognition scores between male and female patients were found.

Doctors' perceptions

The frequencies of patients' scores differ from the frequencies as perceived by doctors with respect to some psychological factors (patients' complaint-related cognitions, behaviour, and anxiety) as well as with respect to some somatic factors (first two columns of Table 1).

The percentages of doctor-patient similarity with respect to attributions appear to be higher than those of anxiety, expectations, and catastrophizing and self-efficacy cognitions (third column of Table 1). Doctor-patient similarity as expressed by kappa (fourth column of Table 1) shows that 5 out of the 14 psychological factors (the psychosocial attributions concerning an agitated and busy life and concerning the fear of cancer, the somatic attribution concerning stools, avoidance behaviour, and interference with daily activities) were perceived better than could have been expected on the basis of chance. Of the 16 somatic factors, 13 were perceived better than could have been expected on the basis of chance.

Doctors' underestimations and overestimations

In those cases in which doctors and patients had dissimilar scores, the directions of these dissimilarities were investigated. The percentages of under- and overestimations are shown in the last two columns of Table 1. Doctors appeared to make significantly more overestimations with respect to the perception of the psychosocial attributions concerning stress and concerning the fear of cancer. Furthermore, they made more overestimations with respect to the perception of the somatic attribution concerning the intestines or stomach and with respect to the perception of catastrophizing and self-efficacy cognitions. Significantly more underestimations were found in both active expectations and in the passive expectation concerning the finding of a physical explanation for the complaints. Other significant underestimations were found in the severity of the abdominal pain, interference with daily activities, four of the nine gastrointestinal secondary complaints (flatulence; blown up, full feeling; abdominal rumbling; abdominal distension), and two of the four non-gastrointestinal secondary complaints (backache and tiredness).

Table 1. *Frequencies of patients' and doctors' perceptions, kappas between doctors and patients, percentages of doctor-patient similarity, and doctors' under- and overestimation* - *(continued on the next page).*

Variables	% patients	% doctors	% similarity	kappa	% under-estimation	% over-estimation
Psychological factors						
State anxiety (sumscore ≥ 21)	50	63	58	.15	14	28
Psychosocial attributions						
The abdominal pain has something to do with my agitated and busy life	15	14	83	.33*	9	8
The abdominal pain is caused by stress	12	25	75	.19	6	19¶
I am afraid I might have cancer	10	29	75	.24*	4	22¶
Somatic attributions						
The abdominal pain has something to do with my intestines, stomach, gall, or urinary tracts	64	85	64	.12	7	29¶
The abdominal pain is a result of not being able to have stools	16	17	89	.58*	5	6
Active expectations						
I expect the doctor to give me advice about how I can handle my complaints	74	41	45	-.008	44¶	11
I expect the doctor to discuss any emotional problem as well	24	9	74	.10	21¶	5
Passive expectations						
I expect the doctor to find a physical explanation for my complaints	65	46	57	.15	31¶	12
I expect the doctor to do something about my complaints (for example, prescribe medication)	55	40	56	.14	29	15
Catastrophizing (sumscore ≥ 12)	43	61	50	.04	16	34¶

Variables	% patients	% doctors	% similarity	kappa	% under-estimation	% over-estimation
Self-efficacy (sumscore ≥ 16)	35	53	58	.19	11	30¶
Avoidance behaviour	68	63	85	.43*	15	10
Interference with daily activities	43	24	68	.32*	25¶	6
Somatic factors						
Abdominal pain						
severe	44	20	60	.15	32¶	8
daily	56	63	75	.48*	9	16
more than 6 months	70	75	89	.72*	4	8
Gastrointestinal complaints						
flatulence	37	12	68	.19	29¶	4
blown up, full feeling	55	35	62	.27*	29¶	9
abdominal rumbling	61	25	52	.13	42¶	6
abdominal distension	44	28	66	.28*	25¶	9
constipation	15	17	89	.60*	5	6
diarrhoea	25	17	87	.60*	11	3
nausea	26	16	81	.44*	15	5
heartburn	15	11	90	.57*	7	3
belching	24	19	80	.42*	13	7
Non-gastrointestinal complaints						
headache	34	26	81	.54*	14	5
backache	34	13	75	.34*	23¶	2
nervousness	13	18	82	.31*	6	12
tiredness	46	29	72	.42*	23¶	5

* Significant kappa calculated by means of the standard error ($P \leq 0.01$)

¶ Significantly greater under- or overestimation; placed at site of highest percentage (sign-test, $P \leq 0.01$)

Differences in doctors' perceptions between subgroups of patients

Our second question concerned the relationship between, on the one hand, patients' sex, age, education, duration of the abdominal pain, doctors' sex, and the sex symmetry in the interaction and, on the other hand, doctors' perceptions of patients' cognitions and complaints. The frequency of the pain was perceived better in male patients than in female patients. The somatic attribution concerning stools and the severity of the pain were perceived better in patients with long-lasting pain as compared with patients with a shorter duration of pain. No differences were found when older and younger patients were compared and in the comparison of patients with lower and higher educational levels. Female doctors appeared to perceive the somatic attribution concerning the intestines or stomach and the complaint 'belching' better than their male colleagues. In sex-symmetric interactions, the somatic attribution concerning the intestines or stomach and the complaint 'abdominal rumbling' were perceived better than in asymmetric interactions.

DISCUSSION

Our findings indicate that, overall, during the first visit to the out-patient clinic, doctors perceived complaints and details of the complaints more correctly than complaint-related cognitions, behaviour, and anxiety. Dissimilarities between doctors and patients were found in doctors' underestimations of most expectations, the severity of the pain, interference with daily activities, and complaints related to abdominal gas. Doctors overestimated the presence of most attributions, and of catastrophizing and self-efficacy cognitions.

How can these more correct perceptions of somatic factors be explained? In consulting patients with abdominal pain, doctors explicitly ask about stools and accompanying problems as part of the medical history. That somatic complaints are most correctly perceived can be expected by virtue of the professional practice of medicine. Somatic aspects are the doctors' primary concern, especially in an outpatient clinic for internal medicine. Doctors underestimated the severity of the pain. It is possible that, while patients look at themselves as unique persons with unique complaints, doctors more often perceive the patient as just another case with a familiar or common complaint[37]. The underestimations of complaints related to abdominal gas, backache, and tiredness may be due to their low diagnostic value and to the fact that these are regarded as vague complaints by the doctor.

How correct are patients' complaint-related cognitions and behaviour perceived

in this study? The psychosocial attributions concerning an agitated life and the fear of cancer, the somatic attribution concerning stools, avoidance behaviour, and interference with daily activities were perceived better than could have been expected on the basis of chance. As these factors are related to the course of the condition, perceiving them correctly is a positive finding. However, anxiety and catastrophizing cognitions, which appear to influence the prognosis negatively, are not perceived correctly[16,17]. Positively changing these factors during the consultations would therefore be difficult. It is generally believed that stress and the fear of cancer occur often in patients with abdominal complaints. It is possible that doctors, with these ideas in mind, perceive these factors more easily and even overestimate them. There is also another explanation for the overestimation of these attributions which also may have influenced doctor-patient (dis)similarity with respect to all other factors. Patients had to complete the questionnaire before and doctors after the first consultation. We do not know what happened to the patient during this first contact. By communicating with their patients, doctors may have evoked thoughts and fears which patients denied or did not previously admit, which would be quite understandable in, for example, the case of the fear of cancer. Doctors' overestimations, as indicated after the consultation, might thus also be explained as patients' underestimations.

Why is it important that complaint-related cognitions, behaviour, and anxiety are recognized as well? The severity of functional abdominal complaints is also influenced by non-organic dimensions (cognitive, behavioural, environmental)[23]. Doctors' primary somatic concern in dealing with patients with abdominal pain engenders the risk of overlooking these non-organic factors such as anxiety, catastrophizing cognitions, and avoidance behaviour[16]. Correctly perceiving psychological factors offers the possibility of influencing these factors, of giving effective reassurance to patients, of preventing somatic fixation[38] by correcting somatic attributions, of enhancing self-efficacy cognitions, and of giving behavioural instructions. It furthermore offers the possibility of increasing patients' satisfaction and of lowering medical consumption and the risk of iatrogenic complications.

An important aspect of this study was the investigation of the role of patients' and doctors' sex in the perception of complaint dimensions. Overall, few differences were found. Sex differences may be hard to show because, in general, the perception of cognitions and anxiety appeared to be low. Contrary to expectations, cognitions were not perceived better in female patients. The

differences in perceptions which were found can be considered more positively with respect to female doctors and sex-symmetric consultations. The positive consequences of these findings will have to be verified through follow-up studies.

Some methodological issues should be discussed. In this study, Cohen's kappa was not used in the usual way, namely for investigating reliability between two observers. Furthermore, the two categories of observers, patients and doctors, did not judge precisely the same issues. Patients reported their own point of view whereas doctors reported their perception of the patient's point of view. Nevertheless, a number of significant kappas emerged within this study, at least with respect to somatic factors.

A methodological issue already mentioned concerns the design of the study. In comparing the scores of patients and doctors, it is important to realize that they did not complete the questionnaires at the same time. Patients' cognitions may have changed during the first consultation. Completing the questionnaire may have evoked confounding reactions. This problem could have been solved by measuring patients' cognitions again after the first consultation. Yet, this would have complicated the design of the study and might have diminished patients' cooperation with respect to the follow-up study.

Doctors' perceptions may have been influenced positively by the fact that all participating doctors examined different patients. Doctors gradually learned which questions they had to answer after concluding the consultation. However, when the perceptions of each doctor for his/her first five patients with abdominal pain were compared with the perceptions for the next five patients, perceptions did not appear to become more correct. It is obviously not enough to know what to look at. Doctors must also have the skills to find patients' complaint-related cognitions and behaviour.

In the present study, a broad definition of IBS has been used. IBS is also defined more restrictively using the criteria formulated by Manning[6,39]. Could our research findings possibly have been different if we had defined IBS more restrictively? Analysis post hoc did not show relevant differences between restrictive IBS patients and other patients. The differences found referred to more correct perceptions of complaints about defecation in patients with restrictively defined IBS. As the restrictive form of IBS is defined by complaints about defecation, these differences could be expected.

Doctors' perceptions of patients' cognitions and behaviour could possibly be improved by teaching them to handle these factors within the curriculum of medical training. Results of further research on the way patients' cognitions change in the course of a few consultations, on how doctor-patient interaction contributes to this process, and on how all of this influences the prognosis, might support the benefit of such training.

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DOCTOR-DEPENDENT CHANGES IN COMPLAINT-RELATED COGNITIONS AND ANXIETY DURING MEDICAL CONSULTATIONS IN FUNCTIONAL ABDOMINAL COMPLAINTS

Dulmen van AM, Fennis JFM, Mokkink HGA, Velden van der HGM, Bleijenberg G. Doctor-dependent changes in complaint-related cognitions and anxiety during medical consultations in functional abdominal complaints. *Psychol Med* 1995; 25: 1011-1018.

ABSTRACT

This study explored the changes in complaint-related cognitions and anxiety of 110 consecutive out-patients with functional abdominal complaints (irritable bowel syndrome), during a series of consultations. Patients' anxiety, fear of cancer, somatic attribution concerning intestines or stomach and catastrophizing cognitions appeared to diminish significantly during the consulting period. Positive changes in patients' psychological attribution and somatic attribution appeared to be related to doctors' correct perceptions of these attributions. Catastrophizing cognitions diminished significantly more when patients saw the same doctor throughout the consultations. As changes in attributions and catastrophizing cognitions appeared to be related to doctor-patient interaction, it is conceivable that doctors could learn to influence cognitions even more.

INTRODUCTION

Functional abdominal complaints, otherwise known as irritable bowel syndrome, have a high prevalence[1,2], conventional treatments, such as medication and dietary advice, are of limited value[3] and the prognosis for these complaints is poor[4,5]. However, complaint-related cognitions and anxiety are known to have predictive value for the course of functional abdominal complaints[4,5]. Therefore, it can be hypothesized, that changing unhelpful cognitions into prognostically more favourable ones will improve outcome. If this is true and if doctors are able to assist their patients in such changes, this could be an effective principle in the treatment of functional abdominal complaints. Indeed, in patients with chronic pain, a reduction of anxiety and catastrophizing cognitions or an increase of self-efficacy beliefs could be related to a better outcome[6-9]. However, in functional abdominal complaints such data are lacking. It is even unknown if changes of this kind happen at all during medical consultations. Moreover, it is unknown if such changes have any relation with doctor- or consultation-dependent factors. Furthermore, it would be important to know if any doctor- or consultation-dependent factors are accessible to modification and if they can be applied intentionally in the treatment of patients. Finally, it will be essential to know if achieved changes in non-somatic complaint dimensions are relevant to the course of the complaints.

In this paper we confine ourselves to the changes in complaint-related cognitions and anxiety that take place in patients with functional abdominal complaints during a series of medical consultations. In particular, the relations between these changes and doctor- or consultation-characteristics are highlighted. Also,

attention is paid to factors responsible for the satisfaction experienced by the patient.

Specifically, the following questions were formulated. Do the complaint-related cognitions and anxiety of patients with functional abdominal complaints change during a series of medical consultations? Which is the direction of these changes? Is there any evidence that the changes are related to doctor- or consultation-dependent factors, such as doctors' perceptions of non-somatic complaint dimensions, seeing the same doctor throughout the consultations, sex-(a)symmetry in doctor-patient interactions, the number of consultations, and the extensiveness of the physical examination? Which factors contribute to patient' satisfaction?

METHOD

Subjects and procedures

One hundred and thirty-four consecutive patients with abdominal pain referred by their general practitioners to the out-patient clinic for internal medicine between March 1991 and April 1992 were asked to participate in this study. All patients had to meet the entry criteria of initial referral and had to be able to read and understand Dutch. They also had to be between 15 and 65 years old. They were asked to fill in a questionnare prior to the first consultation. None of the patients refused to participate in the study.

After verification by two independent internists, 120 patients were diagnosed as suffering from functional abdominal pain. The remainder of this paper relates only to this functional group. One hundred and ten patients, 66 women and 44 men, completed questionnaires after each follow-up consultation. The drop-outs consisted of three patients who did not make another appointment, one patient who was admitted to hospital, and six patients who refused further cooperation, after the first consultation. No differences were found in complaint-related cognitions, behaviour, and anxiety, or in any other complaint or patient characteristics between examined patients and drop-outs.

Immediately after each consultation, doctors completed a questionnaire with questions identical to those answered by patients. They had to answer each question according to the way that they thought the patient had answered it. Thirteen doctors participated, six women and seven men, with mean ages of 30 (SD 1.5) and 39 (SD 7) years ($P=0.003$), respectively. All female doctors and four male doctors were (senior) registrars in internal medicine. The other three male doctors were consulting internists.

For the purpose of this study, the following definitions were used: 'doctor-patient similarity' refers to the percentage doctor-patient contacts in which doctors and patients answered a question in the same way; 'consulting period' refers to the period between first and last consultation; the 'last consultation' is the consultation in which the final diagnosis, namely 'no organic explanation', was told to the patient; 'continuity in doctor-patient contacts' means consulting the same doctor throughout the consultations. 'Sex-symmetric consultations' are defined as consultations with a female doctor and a female patient or a male doctor and a male patient. 'Sex-asymmetric consultations' are defined as consultations in which doctor's and patient's sex differed.

Ratings

Before the first and after each follow-up consultation, patients' complaint-related cognitions and anxiety were measured by means of the following instruments. For the purpose of measuring doctor-patient similarity, these variables were dichotomized later.

State anxiety This was measured using the shortened 10-item version of the Spielberger State Anxiety Inventory (alpha coefficient 0.85)[10]. Scores on each item ranged from: (1) not at all; to (2) somewhat; to (3) moderately so; to (4) very much so. A sumscore equal to or above 21 reflects an increased level of anxiety. This standard score was based on the results of a previous study on patients with functional abdominal complaints[4], as well as on normative data from the manual.

Attributions The nine questions regarding pain attributions[11] were derived from an earlier investigation[4] in which patients were asked to write down their ideas about what caused the abdominal pain. The scores on each of the nine attributions ranged from: (1) total disagreement: to (5) total agreement. Four items were excluded from analysis because of their low frequencies. Three psychological and two somatic attributions remained (Table 2)[12]. A dichotomy was obtained by joining the scores 'total agreement' and 'agreement' vs the scores 'total disagreement', 'disagreement', and 'I don't know'.

Table 1. *Item content and factor loadings for the 9 selected Pain Cognition List items for each factor*

Item content	Factor 1: 'Self-efficacy'	Factor 2: 'Catastrophizing'
I think psychological factors have something to do with my pain too	0.67	
Through my attitude I am able to cope with my pain	0.50	
When I am doing something intensely, I can forget my pain for a great deal	0.56	
I think I can influence my pain positively	0.78	
Relaxation exercises diminish the pain	0.75	
My thoughts are continuously concentrated on the pain		0.72
It seems as if the pain is becoming more and more prominent		0.79
I often think: 'Why must this happen to me?'		0.69
I feel powerless regarding my pain		0.65

Pain-related cognitions These were investigated using the Dutch Pain Cognition List[13]. For the purpose of our study, nine items were selected. Factor analysis revealed two underlying factors (Table 1). These were interpreted as self-efficacy cognitions (five items, alpha coefficient 0.68), and catastrophizing cognitions (four items, alpha coefficient 0.71). Scores on each item ranged from: (1) total disagreement; to (5) total agreement. The self-efficacy and catastrophizing sumscores were dichotomized according to comparable normative data[13]. A score ≥ 16 on the self-efficacy scale reflects a strong belief in the ability to control the pain, whereas a score ≥ 12 on the catastrophizing scale reflects catastrophizing thoughts about the pain.

After each consultation the satisfaction with the visits to the doctor was measured.

The satisfaction scale This consisted of four questions to which patients could respond on a 5-point Likert-scale with 'certainly not' and 'certainly' marking the endpoints. These four questions were: 'Did you feel comfortable while visiting

the doctor?'; 'Did the doctor give you opportunity to express yourselve?'; 'Did the doctor give you clear information?'; 'Did the doctor take his time to talk with you?'. The sumscore (range 4-20) reflects patients' level of satisfaction (alpha coefficient 0.87, mean 16.19, SD 2.88).

Diagnostic tests and investigations After the final consultation, for each patient the number of the following diagnostic tests and investigations, which were carried out between consecutive consultations and were related directly to the abdominal complaints were counted: blood-, urine- and faeces-tests, endoscopy and colonoscopy, X-rays, and ultra-sound scans (median 4, min. 0, max. 8).

Statistical analysis

The Wilcoxon matched-pairs signed-ranks test was used for investigating changes in cognitions and anxiety during the consulting period. The percentages of doctor-patient similarity were used to measure whether doctors perceived patients' cognitions and anxiety correctly, or not. To determine these percentages, scores on cognitions and anxiety, which were measured before the first and after each following consultation, were dichotomized according to the criteria mentioned above. When doctors' and patients' scores were identical, doctor-patient similarity was said to be present. For each patient a change score was calculated by subtracting scores on cognitions and anxiety after the last consultation from scores before the first consultation. Using these change scores, it was possible to examine the differences in changes between subgroups of patients, defined by either doctor-patient similarity, the continuity in doctor-patient contacts, patients' and doctors' sex, the number of consultations, or the number of diagnostic tests and investigations (dichotomized at the median). These differences were tested using the Mann-Whitney *U* test. Statistical significance for all tests was set at the 5% level.

RESULTS

Number of consultations

Seventy-one of the examined patients visited the doctor at the out-patient clinic twice, 30 patients three times and nine patients four times. In the present study, patients with three and four consultations were joined, because the number of patients with four consultations (n = 9) was too small to analyse separately. The period between first and last consultation had a mean duration of 40 days (SD 25).

Table 2. *Means and standard deviations (SD) on anxiety and cognitions before the first and after the final consultation (n = 110) and level of significance of the differences between first and final consultation (Wilcoxon matched-pairs signed-ranks test)*

Variable (range)	First cons. means (SD)	Final cons. means (SD)	P
State anxiety (10-40)	20.51 (5.59)	18.93 (5 60)	0.01
Psychological attributions (1-5)			
The abdominal pain has something to do with my agitated or busy life	2.25 (1.15)	2.19 (1.15)	0.54
The abdominal pain is a consequence of problems or stress	2.35 (0.99)	2.52 (1.16)	0.10
I am afraid I might have cancer	2.21 (1.07)	1.81 (0.93)	<0.001
Somatic attributions (1-5)			
The abdominal pain has something to do with my intestines, stomach, gall or urinary tracts	3.82 (0.87)	3.08 (1.09)	<0.001
The abdominal pain is a result of not being able to have stools	2.04 (1.23)	1.94 (1.22)	0.28
Catastrophizing (4-20)	10.72 (3.67)	10.02 (3.53)	0.008
Self-efficacy (5-25)	14.38 (3 78)	14.68 (4 07)	0.13

Changes in complaint-related cognitions and anxiety

The mean scores on cognitions and anxiety before the first and after the last consultation are presented in Table 2. State anxiety, fear of cancer, somatic attributions concerning the intestines or stomach and catastrophizing cognitions diminished significantly between first and last consultation. No significant changes were found in the remaining cognitions.

Doctor- and consultation-dependent factors related to changes in cognitions

The relationships between changes in cognitions and anxiety and each of the following factors were investigated.

Doctor-patient similarity The somatic attribution concerning the intestines or stomach appeared to diminish significantly more ($P<0.001$) in patients whose

doctors perceived these attributions correctly at first consultation (n = 71) than in patients whose doctors did not perceive these attributions correctly (n = 35). Furthermore, the psychological attribution concerning an agitated and busy life appeared to increase significantly more ($P = 0.04$) in patients whose doctors perceived these attributions correctly at first consultation (n = 88) than in patients whose doctors did not perceive thse attributions correctly (n = 18).

Continuity in doctor-patient contacts Catastrophizing cognitions of patients who visited the same doctor throughout the consultations (n = 90), appeared to diminish significantly more ($P = 0.009$) than catastrophizing cognitions of patients who did not visit the same doctor throughout the consultations (n = 20). Both groups of patients did not differ significantly in initial scores on catastrophizing cognitions.

Sex (a)symmetry in doctor-patient contacts The self-efficacy score did appear to increase significantly more ($P = 0.03$) in sex-asymmetric consultations than in sex-symmetric consultations. However, initial scores on the self-efficacy scale appeared to be significantly higher ($P = 0.01$) in sex-symmetric consultations than in sex-asymmetric consultations.

Number of consultations and diagnostic tests The number of consultations and the number of diagnostic tests and investigations did not appear to be related to changes in cognitions and anxiety.

Patients' satisfaction

Patients whose anxiety diminished (n = 59) were significantly more ($P = 0.02$) satisfied with the visits to the doctor than patients whose anxiety did not diminish (n = 49). Satisfaction with the visits to the doctor appeared neither to be related to the number of consultations nor to the number of diagnostic tests and investigations. Patients consulting the same doctor throughout the consultations were significantly more ($P = 0.05$) satisfied with the consultations than patients who visited different doctors.

DISCUSSION

The present study revealed that the level of anxiety, fear of cancer, somatic attribution concerning the intestines or stomach and catastrophizing cognitions of patients with functional abdominal complaints diminished significantly during

the consulting period at an out-patient clinic. This is an interesting finding, because it is well-known that the above mentioned variables influence the course of functional abdominal complaints[4,5,14]. Theoretically, reductions of anxiety, fear of cancer, somatic attributions and catastrophizing cognitions could, therefore, lead to a better outcome. These favourable changes were achieved without doctors deliberately trying to influence patients' anxiety and cognitions. After all, medical consultations are not aimed at behaviour modification. However, there are indications that the changes are related to doctor-patient interactions, as was shown previously within the general practitioners' consultations[15]. This is important because it would mean that doctors could possibly learn to influence cognitions purposefully.

Doctors' correct perception of the somatic attributions concerning the intestines or stomach appeared to be related to a reduction of these attributions. Correct perception of the attribution concerning an agitated and busy life appeared to be related to an increase of this attribution. Of course the changes in both attributions may be merely the result of the physical examination that has taken place. However, the number of diagnostic investigations did not appear to be related to the mentioned changes. This may indicate that doctors are able to contribute to prognostically favourable changes in complaint-related cognitions and that they may be able to learn to use their influence intentionally. After all, as far as the skill of perception of patients' cognitions and anxiety is concerned, there is much room for improvement[16].

It may seem inconsistent that changes in cognitions and anxiety, apart from patients' attributions, did not appear to be related to doctor-patient similarity. Yet, this might be explained by the fact that the mean percentage doctor-patient similarity with respect to attributions was significantly higher than with respect to pain cognitions and anxiety, namely 77 and 55%, respectively[16].

Besides doctor-patient similarity, continuity in doctor-patient contacts appeared to be related to changes in patients' way of thinking too, for catastrophizing cognitions of patients who met the same doctor throughout the consultations, reduced more than those of patients who did not see the same doctor throughout the consultations. Moreover, continuity in doctor-patient contacts appeared to increase satisfaction, as was also shown in another study[17]. These findings stress the importance of continuity in doctor-patient interactions. Offering the patient the same doctor during the entire consulting period is not just a common courtesy, but in fact an important therapeutic condition.

Apart from the above mentioned findings related to doctors' perceptions and to

the continuity in doctor-patient contacts, this study revealed some interesting aspects about patients' satisfaction with the consultations. As already mentioned and contrary to expectations, it appeared that patients did not become more satisfied when doctors carried out more diagnostic investigations or when patients visited the doctor more often. The quality and style of communication might prove to be far more important for patients' satisfaction, as has also emerged in previous studies[18-21].
Our finding that self-efficacy scores increased more in sex-asymmetric consultations seems difficult to explain at first sight. However, this difference can be explained by the fact that the initial self-efficacy scores of patients who would be ending up in sex-symmetric consultations were already higher than the initial scores of patients with sex-asymmetric consultations.

Some methodological issues of this study are worth mentioning. The most important one is that we do not know what has actually happened during the consultations. Our findings indicate that medical consultations contribute to the correction of prognostically unhelpful complaint-related cognitions. Yet, our interpretations remain speculative until further research on the content and process of doctor-patient interaction will confirm them.
It may be wondered whether all doctors gave their patients the same explanations for the complaints. The out-patient clinic for internal medicine in which this research was done has a fairly standard procedure with regard to patients with functional abdominal complaints: explanation and reassurance with respect to the unknown, in any case, non-somatic cause of the complaints. In extreme cases, patients with relapsing complaints can be referred to a behavioural therapist, from whom they will learn to cope with the complaints[14]. The diagnosis irritable bowel syndrome (IBS) is being avoided, because this term incorrectly supposes the existence of some somatic pathology with clearly definable symptoms and, as a consequence, strengthens unfavourable somatic attributions. Yet, we believe that our definition of functional abdominal complaints corresponds to the broad definition of IBS. IBS is also defined more restrictively using the criteria formulated by Manning[22-24]. Our research findings would not have been different if we had defined IBS more restrictively, because analysis *post hoc* did not show significant differences in changes in anxiety nor cognitions between restrictive IBS patients and other patients.
One of our psychological attributions concerned the fear of cancer. This might seem to be a somatic attribution. Yet, factor analysis on the five attributions

showed that the three psychological attributions are grouped together in one factor, including fear of cancer, while the other two somatic attributions, could be grouped in another factor. Therefore, we consider the cancer attribution to be a psychological attribution, thereby implying that the emphasis in this attribution is the fear rather than the disease. Moreover, as we examined each causal attribution separately rather than an attributional style, categorization has no implications for the results in this study.

As our data were ordinal, we used non-parametric tests to investigate changes in cognitions and anxiety. In line of these non-parametric tests it would seem to be more appropriate to present medians and ranges rather than means and standard deviations. However, medians are not informative, especially not in variables with a restricted number of answering categories. Differences between two measurements may appear to be significant, while their medians do not differ. Furthermore, as the frequency distributions of our observations are symmetrical, the means and medians coincide. Therefore, we believe that it is customary and most correct to investigate changes in ordinal data by means of a non-parametric test such as the Wilcoxon matched-pairs signed-ranks test and show means and standard deviations as illustrations or indicators of the observed differences rather than proofs.

One might assume that the mutual relations between independent variables contributed to changes in cognitions and anxiety, We examined the possibility of confounding using logistic regression analysis with either a reduction of negative cognitions (or not) or an increase of positive cognitions (or not) as dependent variable. As not a single combination of independent variables appeared to be related to changes in patients' cognitions, confounding did not appear to have distorted the relationships we found between changes in cognitions and doctor- and consultation-dependent variables.

Finally, to keep the questionnaire as short as possible, details of the abdominal complaints (severity and frequency) and patients' secondary complaints, which were measured prior to the first consultation[16] were not measured after follow-up consultations. Therefore, it was impossible to examine the relationship between changes in cognitions and possible changes in these factors. However, we assume that abdominal and secondary complaints have diminished too. This assumption is based on the fact that some cognitions have predictive value for the course of the complaints[4,5]. These are precisely the cognitions that improved within this study. By measuring the abdominal and secondary complaints again 6 months after the patients' first visit to the out-patient clinic, we will know

whether the complaints have improved too.

The impact of our finding that doctors contribute to changes in patients' cognitions and anxiety is considerable. Before the first consultation, unhelpful somatic attributions and catastrophizing cognitions existed in, respectively, 66 and 44% of patients with functional abdominal complaints[16]. Standard medical treatment led to an amelioration, but undesirable cognitions continue to exist in one-third of the patients. We feel that more patients would benefit if doctors would systematically consider patients' anxiety, somatic attributions, and catastrophizing cognitions through a patient-centred approach[25]. Recently, a special course in this direction has been developed at our University Hospital, comparable with a training developed previously[26]. We intend to evaluate the effects of this course on the quality of the doctor-patient interaction as soon as a substantial number of doctors has completed the course.

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PERSISTING IMPROVEMENT IN COMPLAINT-RELATED COGNITIONS INITIATED DURING MEDICAL CONSULTATIONS IN FUNCTIONAL ABDOMINAL COMPLAINTS

Dulmen van AM, Fennis JFM, Mokkink HGA, Velden van der HGM, Bleijenberg G. Persisting improvement in complaint-related cognitions initiated during medical consultations in functional abdominal complaints. *Psychol Med* 1996 (in press).

ABSTRACT

One hundred and five consecutive patients with functional abdominal complaints (IBS) referred by their general practitioners to the out-patient clinic for internal medicine participated in the present study. The purpose of this study was to assess the maintenance of positive changes initiated during medical consultations in the patients' complaint-related cognitions and anxiety, as well as the influence of these cognitions on the severity of the complaints, six months after the first visit to the out-patient clinic. Positive changes in the patients' complaint-related cognitions during the consulting period were found to persist during the follow-up period. Improvement in abdominal complaints at follow-up was found to be related to the level of the patients' state anxiety, fear of cancer, and catastrophizing cognitions at the last out-patient visit, and also to the extent in which doctors perceived the patients' self-efficacy cognitions correctly during the consulting period. Perceiving somatic factors correctly during the consulting period did not improve outcome. Finally, complaints improved more as state anxiety and stools attributions decreased during the consulting period. In conclusion, medical consultations can bring about long-lasting positive changes in prognostically unfavourable cognitions and anxiety. These changes appear to be related to a better outcome of functional abdominal complaints.

INTRODUCTION

Doctors are frequently confronted with functional abdominal complaints, also known as irritable bowel syndrome (IBS)[1,2]. Psychological factors, such as complaint-related cognitions and anxiety, have predictive value for the prognosis of these complaints[3,4]. Standard medical treatments, such as medication and dietary advice, are rather ineffective in improving the complaints[5,6]. Therefore, in view of improving the outcome, it seems worthwhile to try to influence psychological factors positively[7]. Recently, a comparable approach was found to be effective in improving functional abdominal complaints by means of cognitive-behavioural group treatment[8].

Previously, we showed that during a series of consultations at an out-patient clinic for internal medicine, state anxiety, fear of cancer, and catastrophizing cognitions diminished significantly in patients with functional abdominal complaints. Moreover, at the end of the consulting period, these patients attributed their complaints less to somatic abnormalities[9]. These positive changes did not

appear to be the result of the physical examination that had taken place, but appeared to be related to correct perceptions of patients' cognitions by doctors and, furthermore, by continuity in doctor-patient contacts[9]. Apparently, medical consultations influence the patients' dysfunctional cognitions positively, at least for a short period. The aim of the present study was to find out whether the changes in complaint-related cognitions persist after the consulting period. In addition, we examined whether correctness of the doctors' perceptions of non-somatic complaint dimensions and achieved changes in these dimensions during the consulting period have favourable consequences for the outcome of functional abdominal complaints, six months after the first visit to the out-patient clinic. It was hypothesized that the level of patients' anxiety and dysfunctional cognitions, such as the presence of fear of cancer, somatic attributions, and catastrophizing cognitions at the last out-patient consultation, would lead to an unfavourable outcome of the complaints at follow-up. The level of psychological attributions and self-efficacy cognitions were, just like patients' satisfaction with the visits to the out-patient clinic and continuity in doctor-patient interactions during the consulting period, expected to have a positive influence on the outcome of the complaints.

METHODS

Subjects

One hundred and thirty-four consecutive patients with abdominal pain referred by their general practitioners to the out-patient clinic for internal medicine between March 1991 and April 1992 participated in this study[10]. After verification by two independent internists, 120 patients (75 women, 45 men) were diagnosed as suffering from functional abdominal complaints, i.e. in these patients no somatic abnormalities were found that could explain the abdominal complaints. One hundred and ten patients completed questionnaires before the first and after each follow-up consultation[9]. They were sent a similar questionnaire at follow-up, six months after the first consultation.

Immediately after each consultation, doctors completed a questionnaire with the same questions as presented to their patients. They had to answer each question according to the way that they thought the patient had answered it. Thirteen doctors participated, six women and seven men, with mean ages of 30 (SD 1.5) and 39 (SD 7) years, respectively. All the female doctors and four male doctors were (senior) registrars in internal medicine. The other three male

doctors were consulting internists.

The doctors' perception of the patients' cognitions
When doctors and patients answered a question in the same way, doctor-patient similarity was said to be present. Percentages of doctor-patient similarity were used to measure whether doctors perceived patients' cognitions and anxiety correctly, or not[9,10].

Questionnaire
The questionnaires consisted of a number of instruments, such as complaint-related cognitions, behaviour, and anxiety, details of the abdominal complaints, the presence of secondary complaints and satisfaction with the visits to the out-patient clinic. These instruments are extensively described in our related papers[9,10]. In addition to these instruments, two outcome measures were used: the *subjective improvement* was measured by asking patients at follow-up whether their abdominal complaints were worse, unchanged, better or had disappeared, compared with six months before[3]; the *severity score* of the abdominal complaints at follow-up (range 0-9) was determined by summing the frequency of the complaints (range 0-3), interference with daily activities (range 0-3), and avoidance behaviour (range 0-3). So, a score of 0 refers to patients whose complaints had disappeared at follow-up or occurred less than once a month; and, a score of 9 refers to patients who reported daily complaints with much interference and avoidance behaviour. The same score was used in our earlier work[3,8].

Statistical analysis
The Wilcoxon matched-pairs signed-ranks test was used for investigating changes in cognitions and anxiety. Change scores were calculated by determining the differences in scores on cognitions and anxiety between consecutive measurements[9]. The relationship between, on the one hand, these change scores and scores on cognitions and anxiety after the last out-patient consultation, and, on the other hand, the two outcome measures was determined using Spearman rank correlation coefficients. The relationship between the outcome of the complaints and the correctness or incorrectness of doctors' perception of patients' cognitions was investigated using Mann-Whitney U test.

Table 1. *Means (SD) for complaint-related cognitions before the first consultation (1), after the last consultation (2) and at follow-up (3), with the level of significance of changes between measurements (Wilcoxon matched-pairs signed-ranks test)*

Variable (range)	first cons. (1)	last cons. (2)	follow-up (3)	P (1-2)	P (2-3)	P (1-3)
Psychological attributions (1-5)						
The abdominal pain has something to do with my agitated or busy life	2.22 (1.11)	2.21 (1.89)	2.49 (1.14)	0.93	0.03	0.02
The abdominal pain is a consequence of problems or stress	2.34 (0.96)	2.48 (1.14)	2.68 (1.16)	0.20	0.16	0.01
I am afraid I might have cancer	2.27 (1.10)	1.87 (0.92)	1.89 (0.95)	<0.001	0.66	0.008
Somatic attributions (1-5)						
The abdominal pain has something to do with my intestines, stomach, gall or urinary tracts	3.84 (0.84)	3.13 (1.02)	3.33 (1.02)	<0.001	0.09	<0.001
The abdominal pain is a result of not being able to have stools	2.04 (1.26)	1.97 (1.25)	2.13 (1.22)	0.38	0.15	0.31
Catastrophizing (4-20)	10.87 (3.77)	10.19 (3.57)	9.53 (3.53)	0.02	0.07	<0.001
Self-efficacy (5-25)	14.40 (3.72)	14.78 (4.25)	14.74 (4.29)	0.08	0.51	0.24

RESULTS

Follow-up response

One hundred and five (95%) of the 110 patients, 63 women and 42 men, returned the completed follow-up questionnaire. All analyses will be carried out on these 105 patients.

Outcome of abdominal complaints

The outcome of the abdominal complaints expressed by subjective improvement

at follow-up shows that 6% of the 105 patients reported a worsening of complaints at follow-up compared with six months before, 51% experienced the same complaints, 31% had less serious complaints and in 12% complaints had disappeared. Between the first consultation and follow-up, the severity score diminished ($P<0.001$) from 4.89 (SD 1.79) to 3.65 (SD 2.34). At follow-up, 31% of the patients continue to experience daily complaints, 23% reported many interferences in daily activities, and 57% reported avoidance behaviour.

Changes in cognitions and anxiety
During the follow-up period, between last consultation and follow-up, patients attributed their complaints more to an agitated and busy life. All other cognitions did not change during the follow-up period (Table 1).

Factors related to the outcome
Changes in cognitions and anxiety during the consulting period When patients' state anxiety diminished during the consulting period at the out-patient clinic the subjective improvement was greater ($r=0.22$, $P=0.01$) and the severity score lower ($r=-0.17$, $P<0.05$). Attributing complaints less to stools, during that period, appeared to be related to more subjective improvement ($r=0.18$, $P=0.04$) and less severe complaints at follow-up ($r=-0.17$, $P<0.05$).

Patients' cognitions and anxiety at the last out-patient consultation Subjective improvement was greater when patients were less anxious ($r=-0.22$, $P=0.01$), catastrophized less ($r=-0.17$, $P=0.04$) and attributed complaints more to stress ($r=0.18$, $P=0.04$) after the last visit to the out-patient clinic. At follow-up, the severity score appeared to be lower when patients were less anxious ($r=0.35$, $P<0.001$), reported less fear of cancer ($r=0.20$, $P=0.02$), attributed their complaints less to somatic abnormalities ($r=0.17$, $P=0.04$), and catastrophized less ($r=0.29$, $P=0.002$) after the last consultation.

Doctors' perceptions of cognitions and complaints When doctors perceived patients' self-efficacy cognitions correctly during the last consultation, the subjective improvement was greater ($P<0.05$) and the severity score lower ($P=0.01$). Correct perceptions of the presence of any of the secondary complaints or of details of the abdominal complaints did not appear to be related to the outcome.

Other factors When patients were more satisfied with the visits to the doctor, the subjective improvement was greater ($r=0.23$, $P=0.009$) and the severity score lower ($r=-0.30$, $P=0.001$). Subjective improvement was not related to patients' age, patients' or doctors' sex, number of consultations, or number of diagnostic tests and investigations. Continuity in doctor-patient contacts tended to be related to the subjective improvement of the complaints ($P=0.06$) and appeared to be related significantly to the severity score at follow-up; in patients who saw the same doctor throughout the consultations ($n=85$), the severity score improved significantly more ($P=0.01$; from 4.95, SD 1.67 to 3.50, SD 2.24) than in patients who saw different doctors ($n=20$, from 4.65, SD 2.28 to 4.31, SD 2.69). There were no significant differences in severity scores between both groups of patients before the first consultation. The severity score at follow-up appeared to be related to the number of consultations during the consulting period at the out-patient clinic ($P=0.01$), i.e. patients who had frequented the out-patient clinic more than twice appeared to have a higher severity score at follow-up than patients with no more than two visits. The severity score was neither related to patients' age, patients' or doctors' sex, nor number of diagnostic tests and investigations at the out-patient clinic.

DISCUSSION

Present findings indicate that the positive changes in patients' complaint-related cognitions that occurred during the consulting period at the out-patient clinic[9] persist during the follow-up period. Furthermore, improvement in cognitions and anxiety during the medical consultations appears to be related to a better outcome of the abdominal complaints at follow-up. Moreover, patients' complaints improved more when they had visited the same doctor throughout the out-patient consultations and when they were more satisfied with the consultations. These findings suggest that medical consultations can bring about long-lasting positive changes in dysfunctional complaint-related cognitions. Previously we found that doctors' correct perceptions of patients' complaint-related cognitions during the consulting period were related to positive changes in these cognitions[9]. Presumably, doctors' specific attention to the meaning of the complaints for the patient helps patients to restructure their dysfunctional beliefs and fears about the complaints. Our present findings suggest that this influence of medical consultations on prognostically unfavourable cognitions is not restricted to the period in which doctor-patient contacts take place, but lasts beyond that, for at least six months. The only significant change in cognitions

during the follow-up period is an increase in psychological attributions. It is possible that this increase is a result of the decrease in somatic attributions during the consulting period[9]. The significant correlation that we found between a decrease in somatic attributions during the consulting period and an increase in psychological attributions during the follow-up period ($r=-0.27$, $P=0.005$) strengthens this line of reasoning.
Our findings, furthermore, indicate that the prognosis of functional abdominal complaints is rather poor. This is consistent with the results of previous studies[3,4]. Perhaps the outcome of the abdominal complaints will improve more when doctors are taught to deal systematically with patients' beliefs and thoughts about their complaints more explicitly.

Methodological issues of this study are described extensively in our related papers[9,10]. In this paper we confine ourselves to methodological issues concerning the follow-up measurement. Although it would have been interesting to examine whether positive changes in patients' anxiety persisted during follow-up, this was not possible, because we used state anxiety instead of trait anxiety as a parameter for patients' anxiety. State anxiety is, by definition, related to an anxiety provoking situation, such as a medical consultation, which did not take place at follow-up. One may wonder whether patients' willingness to discuss their cognitions and emotions has influenced doctors' perceptions of these cognitions and as a consequence the outcome of their complaint. Although this can not be excluded completely, *post hoc* analysis revealed no relationship between the extent in which patients expected to discuss emotional problems with the doctor prior to the first consultation, and the outcome of the complaints at follow-up. Besides, even if some patients were more eager to express their complaint-related cognitions than others, this does not automatically mean that doctors also recognize their cognitions easier. Moreover, we investigated doctors' perceptions of patients' functional or dysfunctional complaint-related cognitions and anxiety, not the perception of, e.g., psychological disorders. Every physical complaint, regardless of its origin, functional or somatic, raises cognitions and emotions, which in turn influence the course of that complaint[3].
In the present study, a broad definition of IBS has been used. IBS can also be defined more restrictively using the criteria formulated by Manning et al[11-13]. Analysis *post hoc* did not show relevant differences between the outcome of restrictively and non-restrictively defined IBS. Therefore, results of this study seem equally applicable to any definition of IBS.

Finally, as psychological factors are known to play a role in any complaint, systematically handling these factors during medical consultations might also favour the course of other functional and even somatically explainable complaints. In our opinion, doctors should pay as much attention to the psychological as to the somatic dimensions of the complaints.

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DO PATIENTS WITH IRRITABLE BOWEL SYNDROME IN PRIMARY CARE REALLY DIFFER FROM OUT-PATIENTS WITH IRRITABLE BOWEL SYNDROME?

Horst van der HE, Dulmen van AM, Schellevis FG, Eijk van JThM, Fennis JFM, Bleijenberg G. Do patients with irritable bowel syndrome in primary care really differ from out-patients with irritable bowel syndrome? (Submitted).

ABSTRACT

Background Little is known of the comparability of out-patients with IBS and IBS patients in primary care with regard to symptom severity, perceived limitations, other aspects of the complaints and gender differences.

Aim We compared out-patients with IBS with primary care patients with IBS on several aspects.

Patients 109 IBS patients were recruited from general practices in Amsterdam and 86 IBS patients were recruited from the out-patient clinic of the department of internal medicine of the University Hospital in Nijmegen.

Methods Each patient completed a questionnaire on demographic variables, abdominal complaints, related complaints and attributions regarding their abdominal complaints.

Results The out-patient group had significantly more males, reported more severe abdominal pain, more frequent complaints, more interference with daily activities and a higher degree of avoidance of activities ($P<0.01$). Broken down for gender, the differences remained for female ($P<0.01$) but not for male patients. Out-patients were more likely to attribute their complaints to somatic causes ($P<0.01$), whereas primary care patients were more likely to attribute their complaints to stress ($P<0.01$) or their agitated way of life ($P<0.05$).

Conclusions Female out-patients consider their complaints as more serious and interfering than IBS patients in primary care. Male out-patients seemed comparable to primary care patients with IBS. More research needs to be done into gender-specific differences in IBS and in the factors that influence the decision to refer a patient with IBS.

INTRODUCTION

Functional abdominal complaints, and in particular irritable bowel syndrome (IBS), are very common in the general population. Patients with these complaints regularly consult a general practitioner (GP) and they also constitute a large portion of the patients frequenting a gastroenterologist[1-3]. However, most studies of IBS involved out-patients with IBS and whether their results can be generalized to primary care populations is a question that is still to be answered.

IBS is a chronic condition in which symptom-free periods and relapses occur. Many patients suffer from this condition for years after the initial diagnosis has been made[4-6]. The relationship between symptom severity and prognosis is unclear. The prognosis of IBS appears to be related to attributions patients make with regard to their complaints. Somatic attributions are related to a poor prognosis whereas psychological attributions are associated with a more positive

outcome[7-9].

In some epidemiological surveys an equal male/female ratio was found in the prevalence of IBS in open populations[10,11]. In other studies, females outnumbered males in open populations, male/female ratios varying from 1:1.4 up to 1:2[12-16]. Studies carried out among out-patients nearly always reported a female preponderance, and one survey showed a male/female ratio of 1:2.4 in the out-patient population[17]. Gender differences have been found in the applicability of the Manning criteria when diagnosing IBS. The diagnostic value of the Manning criteria was lower in men than in women[18,19]. In one study of out-patients with IBS it was found that female patients had more severe complaints and were more likely to be diagnosed as having a psychiatric illness than male patients[20].

In conclusion, little is known of the similarities in and differences between patients with IBS in primary care and out-patients with IBS with regard to symptom severity and prognosis-related factors. In addition, it is not clear whether gender is also of importance in this respect. Comparison of a primary care population of patients with IBS with a population of out-patients from a clinic could give insight into the extent to which results from studies among secondary populations are also applicable to primary care patients. These data might also provide more insight into the factors underlying the decision to refer a patient to an out-patient clinic.

The following research question therefore arises:

What is the difference, if any, between IBS patients in primary care and out-patients with IBS with regard to complaints, perceived limitations caused by the complaints and attributions regarding the cause of their complaints. Are these differences, if any, gender-specific?

PATIENTS AND METHODS

Design

To answer the above-mentioned question, a cross-sectional design was chosen. The primary care population was selected from general practices in Amsterdam and the out-patients were from the out-patient clinic of the department of Internal Medicine of the University Hospital in Nijmegen, The Netherlands.

Patients

After informed consent patients were included in the study if they were diagnosed as having IBS and also met the following criteria: age between 18 and 70 years at the start of the study; reasonable command of the Dutch language; no

evidence of specific gastrointestinal pathology (e.g. colitis, carcinoma of intestines, polyposis coli, recurrent ulcers in stomach or duodenum, pancreatitis); no evidence of severe depression, psychosis or mental deficiency according to the judgement of the physician

A diagnosis of IBS was made if:
1. complaints lasted for longer than three months and included continuous or intermittent abdominal pain and one or more of the following symptoms: irregular pattern of defecation, flatulence, passage of mucus, tender colon on palpation;
2. there was no evidence of the existence of any other disease that could explain the complaints.
These criteria were based on the ICHPPC-2-defined[21].
Patients who gave informed consent were asked to fill in a number of questionnaires.

Primary care population (PC) The eligible PC population consisted of patients consulting their GP during the period from February 1992 until November 1994 because of abdominal complaints existing for more than 3 months. Patients were recruited by 29 GPs to participate in a study among primary care IBS patients. The GPs followed a diagnostic protocol to include patients in the study. A total of 160 patients participated, of whom 41 had been referred to an out-patient clinic because of their abdominal complaints at some time previous to inclusion in the present study. 109 patients had never been referred and for 10 patients no specific data were available in this respect. Only the data of the 109 patients who had never been referred were used in the comparison of the PC population with the out-patient population. The data of the 41 patients from the PC population who had been referred before inclusion were used to test our assumption that the two catchment areas are comparable for our purposes.

Out-patient population (OC) Patients who were referred by their GP and consequently made a first appointment by telephone to attend the out-patient clinic were asked whether abdominal complaints were the reason for their referral. In the period between March 1991 and April 1992, 134 patients answered affirmatively. After careful assessment by two independent physicians, 120 of the patients appeared to have functional abdominal complaints, 86 of whom met the above-mentioned criteria for IBS and were subsequently included in this study.

Measuring instruments

In both populations the same questionnaire on demographic variables, abdominal complaints, related complaints and attributions was used. In previous studies the questionnaire had been well accepted and had proved to be easy to administer[7,8]. In addition to demographic variables, the following variables were included:

Symptoms compatible with IBS Patients were asked to indicate the frequency of flatulence, bloatedness, passage of mucus per rectum, abdominal rumblings, feeling of incomplete evacuation, pain relieved by defecation. Each item was scored on a three-point frequency scale except for the last item which was a 'yes or no question'.

Details about the main complaints The duration of the complaints was measured on a nine-point ordinal scale with end-points of 'between three and six months' and 'more than 5 years'. The severity of the abdominal pain was scored on a five-point ordinal scale ranging from 'mild' to 'unbearable'. The frequency of the pain was scored on a six-point ordinal scale ranging from 'less than once a month' to 'every day'.

Limitations as a consequence of the complaints Both limitation of daily activities and avoidance of social or physical activities were measured on a four-point ordinal scale ranging from 'none at all' to 'very much'.

A severity score was determined by taking the sum of the reported frequency of the abdominal complaints (0-3), the interference with daily activities (0-3) and the avoidance behaviour as a result of the complaints (0-3)[7,8].

Additional information Two complaints that could indicate an underlying disease (blood on stool and fecal incontinence) were measured on a three-point frequency scale. Questions were asked about: the total number of abdominal operations prior to inclusion; the total number of visits to the GP for abdominal complaints in the past three months; the number of days of absenteeism caused by abdominal complaints in the past three months; the frequency of use of medication for abdominal complaints; the frequency of use of laxatives.

Patients were asked to indicate the presence or absence of 15 *secondary complaints* (10 gastrointestinal complaints, e.g. vomiting, nausea, heartburn, belching, and 5 non-gastrointestinal complaints, i.e. headache, backache, urinary problems, nervous complaints and tiredness) and a total number of complaints was computed.

Attributions Patients were also asked to answer nine questions about the causes to which they attributed their abdominal pain on a five-point ordinal scale, scores ranging from 'total disagreement' to 'total agreement' (Table 3).

Analysis

Data from the PC population (n = 109) were compared with data from the OC population (n = 86). T-test for independent samples was used for comparing group means (e.g. age, total number of complaints). Chi-square was used to test the gender distribution in both populations. The remainder of the variables were scored on an ordinal scale and a Mann-Whitney non-parametric test was used to detect significant differences between the groups. Although most data were ordinal and analysed by means of a non-parametric test, we present means in the tables as these are more informative. Significance level was set at a two-sided p-value equal to or less than 0.05 for all variables.

RESULTS

Comparability

Mean age (38 years (PC) vs 37.4 years (OC)) and level of education did not differ between the PC population and the OC population. However, a significant difference in gender was detected: in the OC population men were less outnumbered by women (1:2) than in the PC population (1:4). Therefore, all further comparisons were also made for men and women separately.

Table 1. *Means on IBS-related symptoms and problems of a primary care (PC) and an out-patient population (OC).*

Variables (range)	PC (n = 109)	OC (n = 86)	P*
Duration of complaints (1-9)	5.9	6.2	NS
Severity of abdominal pain (1-5)	2.2	2.6	<0.01
Frequency of pain (1-6)	4.6	5.3	<0.01
Limitation of daily activities (1-4)	2.0	2.4	<0.01
Avoidance of activities (1-4)	1.5	2.1	<0.01
Severity score (0-9)	3.5	5.0	<0.01
Number of secondary complaints (0-15)	7.4	8.7	<0.01

* Mann-Whitney U test

Abdominal symptoms

Table 1 presents the scores with regard to abdominal symptoms. No differences were found between the two populations with regard to the frequency of complaints that are typical for IBS, with the exception of abdominal rumblings which were experienced more frequent in the out-patient group ($P<0.05$). The two populations did not differ in the total number of abdominal operations prior to inclusion, nor in the frequency of use of medication for abdominal complaints or use of laxatives. Two symptoms that could indicate an underlying disorder (i.e. loss of blood with stool and fecal incontinence) were experienced more often in the OC group ($P<0.05$). The out-patient group also had significantly higher scores on the severity of abdominal pain, the frequency of the complaints, the amount of interference with daily activities, the degree of avoidance of certain activities as a consequence of the complaints, the number of days of absenteeism from work and the number of GP consultations during the past three months ($P<0.01$). Consequently, the severity score was also significantly higher for the out-patient group ($P<0.01$). Broken down for gender, the differences remained for women, with the exception of the number of GP consultations and absenteeism, which did not differ. For men the only significant difference was found in the frequency of complaints, i.e. male out-patients had complaints more frequently than primary care patients ($P<0.05$) (Table 2). In addition, we compared male with female patients in both populations separately. These analyses showed no significant differences on any of the above-mentioned variables between male and female patients within the PC population. Within the OC population, however, female patients reported more severe complaints ($P<0.01$), showed more avoidance behaviour ($P<0.05$) and mentioned more additional complaints ($P<0.05$) than their male counterparts.

Attributions of complaints

Table 3 shows that OC patients were much more likely to attribute their complaints to something being wrong with their intestines ($P<0.01$). PC patients, on the other hand, attributed their complaints more often to their agitated way of life ($P<0.05$), stress ($P<0.01$), defecation problems ($P<0.01$), eating habits ($P<0.01$) or ageing ($P<0.05$). When the data were broken down for gender there were no remarkable changes in the results.

Table 2. *Means on IBS related symptoms and problems of female and male patients of a primary care (PC) and an out-patient population (OC).*

Variables (range)	females PC (n=87)	OC (n=56)	P*	males PC (n=22)	OC (n=30)	P
Duration (1-9)	6.1	5.9	NS	6.5	6.0	NS
Severity (1-5)	2.5	2.8	<0.01	2.1	2.2	NS
Frequency (1-6)	4.5	5.2	<0.01	5.0	5.5	<0.05
Limitations (1-4)	2.0	2.5	<0.01	2.0	2.3	NS
Avoidance (1-4)	1.5	2.3	<0.01	1.7	1.9	NS
Severity score (0-9)	3.4	5.2	<0.01	3.9	4.8	NS
Number of secondary complaints (0-15)	7.2	9.0	<0.01	8.0	7.9	NS

* Mann-Whitney U test

To test the assumption that the differences detected between the Amsterdam and the Nijmegen populations are true differences and not simply a result of the fact that both study populations came from a different catchment area, an additional comparison was made between the out-patient population and 41 patients from the same general practices in Amsterdam who had been referred prior to their inclusion in the PC study. The 41 referred patients were comparable with the 86 patients from the OC population with regards to abdominal symptoms and attributions. The female patients of the referred group were comparable to the female patients from the OC population and the same comparability was found for the male patients.

DISCUSSION

Out-patients with IBS appear to consider their complaints to be more serious than primary care patients with IBS, they also experience more limitations as a consequence of their complaints and have more somatic attributions regarding the cause of their complaints. Further analyses showed that the differences mentioned above only existed in female patients. Differences in assessment

between the sexes have been found in earlier studies, but mainly in connection with the applicability of the Manning criteria[18,19]. Our results are in accordance with a previous study among out-patients in which female patients were found to be more severely affected by their physical complaints and showed more avoidance behaviour than male patients[20].

Table 3. *Means on attributions of PC and OC patients regarding the cause of their abdominal pain.*

Attributions (range 1-5)	PC (n=109)	OC (n=86)	P**
Pain related to agitated life	2.7	2.3	<0.05
Pain due to something wrong with intestines	3.4	3.9	<0.01
Pain caused by stress	3.2	2.3	<0.01
Fear of cancer	2.3	2.3	NS
Pain due to defecation problems	2.6	2.2	<0.01
Pain caused by eating habits	2.5	2.1	<0.01
Pain related to ageing	1.8	1.5	<0.05
Pain related to periods, ovaries or uterus	2.3*	2.5*	NS
Pain due to genetic inheritance	2.1	2.0	NS

* Only women (PC n=87, OC n=56)
** Mann-Whitney U test

A point of criticism might be that we used a broad definition of IBS. However, analysis post hoc showed that patients who met two or more Manning criteria (92% of the study population) were not different in any respect from patients who only met our criteria.

One of the limitations of our study is that the two populations came from different catchment areas. However, as the two cities are only 150 kilometers apart, we assume that both populations are comparable with regard to climatological, occupational and dietary factors. Moreover, there is no evidence that physicians in either part of the country differ considerably in the criteria they use

for referral. Our assumption that the catchment area is not a confounding factor in our study is supported by the fact that the 41 patients referred from general practices in Amsterdam were comparable with the OC population from Nijmegen. Another limitation is the small number of men in both groups: this could result in the fact that a true difference in symptom severity or other variables between the male patients of both populations remains undetected. However, the differences between OC and PC populations that have emerged in our study merit further investigation. Combined with the fact that, both in our study and in Corney's study, female OC patients had more severe complaints than their male counterparts, these results suggest that gender differences have to be taken into account when dealing with several aspects of IBS[20]. If the results from our study are reproduced in other studies, data on male patients can be generalized from an OC to a PC population and vice versa, but the same does not apply for data on female patients. Our data on gender differences, combined with the fact that the out-patient population had significantly more men than the primary care population, leads us to the hypothesis that GPs refer male IBS-patients more easily than female IBS-patients. Female patients, as a group, must have more incapacitating complaints before they are referred, while the referral of male patients does not seem to be guided by this principle. The fact that different referral patterns exist for women and men has emerged on several occasions and with different disorders[22,23]. The tendency of these differences is that GPs are more likely to attribute women's complaints to psychosocial causes. One could assume that women have to complain more persistently if they want a referral. In some cases this reluctance of GPs to refer women can be a serious disadvantage for women, e.g. in cardiovascular diseases[22,23]. Whether this late or reluctant referral of women is a disadvantage in the case of IBS remains to be seen. There are indications that a referral and the resulting extensive diagnostic procedures can confirm the patients' beliefs in a more or less serious somatic origin of their complaints, thereby possibly prolonging the complaints[24]. As mentioned earlier, Bleijenberg and Fennis found that patients with somatic attributions of their complaints have an unfavourable prognosis compared with patients with non-somatic attributions[7]. The somatic attribution of OC patients found in our study could be the reason for or the result of being referred because of their complaints[25]. If the last is the case it is a strong argument against referral if there are no suspicions of an underlying disorder. Even if the somatic attribution is already present in advance it will be reinforced by the specialist working method: exclusion of pathology. If so, men may be at a disadvantage by being referred earlier than women. A referral is the result of the interaction

between patient and physician: both contribute factors to the decision to refer. From our results it appears that symptom severity or duration of complaints are not major explanations for referral for all IBS patients. More research is needed into the factors, on the side of both patient and physician, that influence a referral. Also the determinants of a successful referral should be investigated.
The gender-specific differences found in this study need to be confirmed in future studies before a confident statement can be made about the generalizability of results from an OC population to a PC population and vice versa.

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THE RELATIONSHIP BETWEEN COMPLAINT-RELATED COGNITIONS IN REFERRED PATIENTS WITH IRRITABLE BOWEL SYNDROME AND SUBSEQUENT HEALTH CARE SEEKING BEHAVIOUR IN PRIMARY CARE

Dulmen van AM, Fennis JFM, Mokkink HGA, Bleijenberg G. The relationship between complaint-related cognitions in referred patients with irritable bowel syndrome and subsequent health care seeking behaviour in primary care. *Fam Pract* 1996; 13: 12-17.

ABSTRACT

Background It is generally accepted that it is important to explore patients' beliefs and fears about the meaning of their symptoms during medical consultations.

Objective To discover how referral behaviour of GPs and attention to dysfunctional cognitions of medical specialists affect the subsequent health care seeking behaviour of patients with irritable bowel syndrome.

Method Questionnaires were distributed to GPs and to doctors and patients at an out-patient clinic in the University Hospital of Nijmegen.

Results The results of the present study indicate that doctors' attention to the complaint-related cognitions of IBS-patients is also related to a reduced use of medical health services in primary care. On the other hand, when referred IBS-patients continue to attribute their complaints to a somatic abnormality even after such an abnormality has been ruled out through extensive physical examinations, the subsequent use of medical health services in primary care is likely to increase. Moreover, GPs' referral behaviour appears to strengthen these dysfunctional somatic attributions in IBS-patients.

Conclusions These unfavorable consequences might be avoided by handling cognitions and anxiety more specifically during medical consultations in primary as well as secondary care.

INTRODUCTION

Recently we found at an out-patient clinic for internal medicine that during medical consultations doctors are able to influence patients' complaint-related cognitions and thereby the course of irritable bowel syndrome (IBS) positively with minimal non-intended psychological intervention[1-3]. However, in some patients dysfunctional cognitions continued to exist after the consulting period, e.g. attributing complaints to a somatic abnormality even after such an abnormality had been ruled out through physical examination[3]. Such persistent cognitions are likely to have negative consequences for patients' subsequent health care seeking behaviour in primary care. When doctors at the out-patient clinic attend to the dysfunctional cognitions more explicitly while interacting with their patients, dysfunctional cognitions will diminish[3]. The question is whether patients' health care seeking behaviour will reduce too.

A potential factor contributing to patients' dysfunctional cognitions may be the somatic attitude of the general practitioner (GP). One of the parameters measuring a GP's attitude is his general referral behaviour. Factors influencing GPs' referral

behaviour have been thoroughly examined. Besides doctor-dependent and clinical factors, referral decisions appear to be related to GP-patient interaction[4], as well as to patients' anxiety and expectations[5]. Whether the referral rates in turn influence patients' cognitions and anxiety has been investigated less frequently; as far as we know only Huygen reported that GPs' working style, which includes, among other things, their referral behaviour, is related to patients' expectations regarding specialists' care, their subjective feeling of health, and their consultation behaviour[6]. In this latter study, however, GPs' referral behaviour has not been examined separately.

The present study explored the relationships between 1) the cognitions and anxiety of IBS-patients at the end of the consulting period at an out-patient clinic and subsequent health care seeking behaviour in primary care; 2) the quality of doctor-patient interaction at the out-patient clinic and subsequent health care seeking behaviour in primary care; and 3) GPs' general referral behaviour and the cognitions and anxiety of their referred IBS-patients.

METHODS

Subjects

One hundred and thirty-four patients with abdominal complaints were referred by their GP to the out-patient clinic for internal medicine of the University Hospital in Nijmegen between March 1991 and April 1992[1]. After verification by two independent internists, 120 patients, 75 women and 45 men, were diagnosed as suffering from IBS, defined as abdominal pain with or without disordered defecation in the absence of any recognizable gastrointestinal pathology[7]. Prior to the first consultation, after each follow-up consultation, and six months after the first consultation at the out-patient clinic, these patients completed questionnaires about, among others, their complaint-related cognitions and anxiety[1-3]. Immediately after each consultation, doctors completed a questionnaire with the same questions as presented to their patients. They had to answer each question according to the way that they thought the patient had answered it, thereby indicating their perception of patient's cognitions and anxiety[1-3].

Six months after patients' first consultation at the out-patient clinic (follow-up), i.e. several months after the end of the consulting period at the out-patient clinic, GPs were sent a questionnaire about patients' use of medical health services during the preceding three months.

Doctor-patient interaction

The correctness of doctors' perceptions of patients' cognitions and anxiety during the last out-patient consultation, is considered to be a reflection of the quality of doctor-patient interactions. The correctness of doctors' perceptions is measured by means of percentages doctor-patient similarity. To distinguish between doctors in primary and secondary care, in this paper the first will be referred to as GPs, the latter as doctors.

GPs' general referral behaviour

Ninety of the 120 referred patients appeared to be registered with a large regional sick fund in Nijmegen (VGZ). The 63 GPs of these patients were asked permission to use their referral figures to internal medicine in 1992 for analysis. They had to have at least 100 VGZ sick fund patients on their list to ensure high enough annual referral figures for each practice. Using the sick fund figures for 1992, for each GP the referral rate to internal medicine was determined and adjusted indirectly[8] for the age and sex distribution of the practitioner's practice population resulting in a standardized referral ratio; a referral ratio of >1 means that the GP has referred more patients to internal medicine than would have been expected on the basis of the practitioner's practice population; 1 means that the GP has referred as much as would have been expected; <1 means fewer referrals than expected.

Questionnaire

Patient's questionnaires Before the first and after the last out-patient consultation as well as at follow-up, patients completed the following instruments. For the purpose of measuring doctors' perceptions of patients' cognitions and anxiety, these variables were dichotomized later[1-3]. The shortened 10-item version of the Spielberger State Anxiety Inventory (Cronbach's $\alpha=0.85$) measuring state anxiety was used[9]; a score ≥ 21 reflects an increased level of anxiety. Three psychological and two somatic attributions[10]; a high score on each item reflects strong beliefs with regard to psychological or somatic causes for the pain, respectively. Nine pain-related cognitions selected from the Dutch Pain Cognition List; factor analysis revealed two underlying factors, self-efficacy cognitions (5 items, $\alpha=0.68$), e.g. 'I think I can influence the pain positively', and catastrophizing cognitions (4 items, $\alpha=0.71$), e.g. 'I often think, 'Why must this happen to me?''[11]. After the last consultation at the out-patient clinic, satisfaction with the visits to the doctor was measured by means of four questions of which the sumscore reflects patients' level of satisfaction ($\alpha=0.87$)[2].

Health care seeking behaviour At two points, namely before the first consultation and at follow-up, patients' use of medical health services during the preceding three months was measured by means of patients' reports of the number of GP visits for abdominal and other complaints, and using or not using medication for their abdominal complaints.

GPs' questionnaire At follow-up, GPs were asked how often their patients had consulted them during the last three months for abdominal or other complaints, and whether or not they had prescribed any medication for abdominal complaints during that period.

Statistics

As the variables measuring the number of visits to the GP appeared to have skew distributions, they were dichotomized as (0) no visits to the GP, and (1) one or more visits to the GP; the number of visits for abdominal complaints measured before the first consultation was dichotomized after subtracting one visit to become referred. In the Netherlands no patient consults a specialist without a referral note from their GP. Subsequently, changes in the use of medical health services were investigated using McNemar-test. Percentages of doctor-patient similarity were used to measure whether doctors perceived patients' cognitions and anxiety correctly, or not; when doctors' and patients' dichotomized scores were identical, doctors' perceptions were considered to be correct. Change scores during the out-patient consultations were calculated by determining the differences in scores on cognitions and anxiety between first and last consultation. The relationships between, on the one hand, scores and change scores in cognitions and anxiety, doctors' perceptions, and, on the other hand, subsequent use of medical health services in primary care were investigated using Mann-Whitney U test and Chi-square test. GPs' referral ratios were classified into three groups of about equal size representing 'low', 'medium' and 'high' referrers. Kruskal-Wallis test was used to investigate possible differences between these three groups with respect to patients' cognitions and anxiety after referral.

RESULTS

The use of medical health services

Before investigating the factors possibly related to the use of medical health services in primary care (research questions 1 and 2), it is necessary to know how often patients had consulted their GP and had used medication for their abdominal

complaints.

Table 1. *Number (%) of patients with > 1 GP visit prior to the first consultation and ≥ 1 GP visit prior to the follow-up assessment with level of significance of the difference between measurements.*

Reason for visit	Prior to first consultation	At follow-up	P*
Abdominal complaints	72 (60%)	31 (28%)	<0.001
Other complaints	37 (31%)	54 (49%)	<0.001
Abdominal or other complaints	90 (75%)	72 (65%)	0.11

* McNemar test

Response

The GPs of 113 of the 120 patients (94%) returned the follow-up questionnaire concerning patient's use of medical health services in their practice.

GP visits for abdominal complaints

Prior to the first consultation, 72 patients (60%) reported having visited their GP more than once for abdominal complaints during the preceding three months. Six months later, at follow-up, 31 patients (28%) reported having visited their GP at least once during the last three months of the follow-up period; a significant decrease (Table 1). At follow-up, GPs registered in 23 patients (20%) at least one visit for abdominal complaints during the preceding three months. GPs' registration of the number of patients' visits did not appear to differ significantly from patients' reports of the number of visits to their GP. Female and male patients did not appear to differ in the number of visits to the GP before the first consultation or at follow-up.

GP visits for other complaints

Prior to the first consultation, 37 patients (31%) reported having visited their GP at least once for something other than abdominal complaints during the preceding three months. Six months later, at follow-up, 54 patients (49%) reported having visited their GP for other complaints, which is a significant increase (Table 1). GPs registered during the latter period exactly the same number of patients. Before the first consultation and at follow-up, more female than male patients reported having visited their GP at least once for other complaints ($P=0.04$ and $P=0.01$,

respectively). Taken together, the number of patients who had visited their GP for abdominal or other complaints did not appear to have changed between first consultation and follow-up (Table 1).

Medication for abdominal complaints
Before the first consultation at the out-patient clinic, fortyfour patients (37%) reported using medication for their abdominal complaints. At follow-up, this number had decreased, albeit non-significantly ($P=0.08$), to 28 patients (26%). During the last three months of the follow-up period, GPs had prescribed medication for abdominal complaints to 16 patients (14%). Female and male patients did not appear to differ in their use of medication for abdominal complaints before the first consultation or at follow-up, nor had GPs prescribed medication for abdominal complaints more often to female than to male patients.

Factors related to the use of medical health services at follow-up
Cognitions and anxiety When patients attributed their complaints to a somatic abnormality after the last out-patient visit, they visited their GP at follow-up more often for abdominal complaints and received a prescription for medication more frequently. When patients catastrophized more after the last out-patient visit, they reported visiting their GP more frequently for other complaints (Table 2). Patients who, during the consulting period at the out-patient clinic, changed their attribution of a somatic abnormality, appeared to receive less frequently a prescription from their GP for the abdominal complaints ($P=0.04$).

Doctor-patient interaction at the out-patient clinic When doctors had perceived patients' state anxiety correctly during the last consultation at the out-patient clinic, patients reported fewer visits to their GP for abdominal complaints at follow-up. When doctors had perceived patients' fear of cancer correctly, patients visited their GP less for other complaints. Moreover, when doctors had perceived patients' catastrophizing cognitions correctly, GPs prescribed less medication for abdominal complaints (Table 3). When patients had visited the same doctor throughout the consultations at the out-patient clinic, they reported using medication for their abdominal complaints less frequently ($P=0.02$). The satisfaction with the visits to the out-patient clinic did not appear to be related to the subsequent use of medical health services in primary care.

Table 2. *Means (SD) on patients' cognitions after the last out-patient consultation (n = 110) related to the subsequent use of medical health services in primary care*

Patients' cognitions (range)						
	Number of GP visits for abdominal complaints reported by patients			Number of GP visits for abdominal complaints registrated by GPs		
	0	≥1		0	≥1	
Attributing complaints to a somatic abnormality (1-5)	2.97 (1.07)	3.46 (0.96)	P=0.05*	2.94 (1.04)	3.52 (1.17)	P=0.02
	Number of GP visits for other complaints reported by patients			Number of GP visits for other complaints registrated by GPs		
	0	≥1		0	≥1	
Catastrophizing (4-20)	9.36 (3.36)	10.79 (3.57)	P=0.03	9.68 (3.45)	10.38 (3.48)	P=0.27
	Use of medication for abdominal complaints			Prescription of medication for abdominal complaints		
	no	yes		no	yes	
Attributing complaints to a somatic abnormality (1-5)	3.01 (1.11)	3.38 (0.90)	P=0.08	2.97 (1.11)	3.64 (0.74)	P=0.02

* Mann-Whitney U test

Table 3. *Number (%) of patients in which doctors perceived cognitions or anxiety correctly during the last out-patient consultation related to the subsequent use of medical health services in primary care*

Doctors' perceptions of						
	Number of GP visits for abdominal complaints reported by patients			Number of GP visits for abdominal complaints registrated by GPs		
	0	≥1		0	≥1	
State anxiety	47 (69%)	10 (40%)	P=0.01*	46 (61%)	9 (56%)	P=0.75
	Number of GP visits for other complaints reported by patients			Number of GP visits for other complaints registrated by GPs		
	0	≥1		0	≥1	
Fear of cancer	45 (87%)	30 (69%)	P=0.04	44 (86%)	29 (69%)	P=0.05
	Use of medication for abdominal complaints			Prescription of medication for abdominal complaints		
	no	yes		no	yes	
Catastrophizing	46 (65%)	14 (63%)	P=0.92	56 (70%)	49 (38%)	P=0.02

* Chi-square test

GPs' general referral behaviour

Before investigating the relationship between GPs' referral behaviour and patients' cognitions and anxiety (research question 3), GPs' referral behaviour is described first.

Response Forty-four GPs (70%) gave permission to use their referral figures to internal medicine for analysis; seven GPs had stopped practising in 1992; one GP had less than 100 patients registered with the sick fund; 11 GPs did not give permission.

Low, medium, and high referrers The mean referral ratio to internal medicine was 0.98 (SD 0.23) with a range 0.30-1.46. Taking into account these referral ratios, the GPs were classified into three groups of referrers: 'low', with a ratio of at most 0.93 (n = 21); 'medium', with a ratio between 0.94 and 1.09 (n = 23); and 'high', with a ratio of at least 1.10 (n = 20). These ratios corresponded with mean number of referrals to internal medicine per 1000 patients of 68 (SD 22) for 'low', 98 (SD 24) for 'medium', and 125 (SD 16) for 'high' referrers. In all three groups the ratio female versus male patients was equal. As only four of the 44 GPs were women, it was not possible to compare the referral ratios of female and male GPs.

General referral behaviour and complaint-related cognitions and anxiety The comparison between 'low', 'medium' and 'high' referrers revealed one significant difference: the more GPs referred to internal medicine, the more their patients attributed their abdominal complaints to a somatic abnormality ($P = 0.007$). The means for the three groups on the somatic attribution (range 1-5) were 3.55 (SD 0.78) for 'low', 3.62 (SD 0.74) for 'medium', and 4.25 (SD 0.79) for 'high' referrers. A comparable relationship could not be found between GPs' referral behaviour and the same attribution after the last visit to the out-patient clinic.

General referral behaviour and use of medical health services GPs' general referral behaviour appeared to be related neither to the number of medical visits for abdominal or other complaints nor to the use/prescription of medication for abdominal complaints measured prior to the first consultation at the out-patient clinic, or measured at follow-up, e.g. 'high' referrers did not appear to prescribe medication for the abdominal complaints more frequently than 'low' referrers.

DISCUSSION

The findings reported above suggest that referred IBS-patients are likely to make more subsequent use of medical health services in primary care when they, despite negative findings of physical examination, adhere to dysfunctional cognitions, such as attributing complaints to a somatic abnormality or catastrophizing thoughts about the complaints. Possibly, these patients believe that the doctor at the out-patient clinic has failed to diagnose their condition correctly, do not feel reassured, and need to see their GP again to be reassured more specifically. On the other hand, it turns out that after doctors perceived patients' dysfunctional cognitions and anxiety correctly during the last out-patient consultation, patients are likely to visit their GP less frequently and to use less medication for abdominal complaints. These are interesting findings because they suggest that when doctors at an out-patient clinic, but quite possibly also in primary care, attend to patients' cognitions and anxiety more specifically and explicitly, excessive use of medical health services in primary care may be prevented.

Findings from this study also suggest that patients from high referrers attribute their abdominal complaints more often to a somatic abnormality. GPs may have referred just those patients with elevated scores on the somatic attribution. Alternatively, GPs' referral behaviour may be an expression of their own somatizing attitude which may reinforce the somatizing attitude of their patients. An important tool to prevent unnecessary referrals would be GPs' consideration of the patient's beliefs and fears in addition to the medical implications of the complaint.

Although the effects of this study are small, they point in the same direction and correspond with earlier findings[1-3]. Moreover, in this study, patients' use of medical health services was assessed by means of patients' reports and GPs' registrations. These registrations did not coincide completely; with respect to the number of GP consultations for abdominal complaints, patients' reports only slightly exceeded GPs' registrations. This discrepancy can be explained by either a distorted memory in patients or an inaccurate registration by GPs. Despite the dissimilarities we believe that our figures are reliable because the results of the separate analyses pointed in the same direction. The difference between use and prescription of medication for the abdominal complaints might be explained furthermore by the fact that patients also reported the use of self-medication or that they received a prescription from their specialist. However, this latter explanation is unlikely, because the department of internal medicine of our University Hospital has the policy to prescribe no medication for IBS.

The referral figures in practice populations with less than 1000 sick fund patients

might have distorted the overall figures expressed per 1000 patients. Therefore, we investigated beforehand whether practice populations with small numbers of sick fund patients differed from the rest with respect to the age and sex distribution of these practices or with respect to other practice features: no differences were found.

In the present study, a broad definition of IBS has been used, whereas IBS can also be defined more restrictively[1]. Analysis *post hoc* did not show any relation between patients' use of medical health services or GPs' referral behaviour and the definition of IBS. Therefore, we believe that the findings from this study can be applied just as much to patients with restrictively defined IBS, and perhaps also to other functional or even somatically explained complaints.

In an earlier report we demonstrated that doctors at the out-patient clinic for internal medicine, although not deliberately, actually influenced the course of the complaints in IBS positively[3]. Apparently, doctors' correct perceptions of patients' complaint-related cognitions are important in restructuring dysfunctional cognitions and improving the outcome of the complaints. Present findings suggest that doctors' correct perceptions of patients' cognitions also result in a reduction in patients' use of medical health services in primary care. Patients' health care seeking behaviour might reduce further when doctors learn to handle cognitions and anxiety more specifically and explicitly. A special training in this direction could be useful to acquire such specific communicative skills. We have recently started such training at our University Hospital. For a subgroup of refractory consulters who adhere to dysfunctional cognitions, handling cognitions and anxiety explicitly during medical consultations may not be sufficient. These patients may need to be referred to a behaviour-therapist for more elaborate cognitive-behavioural treatment, which has recently been shown to be effective[12].

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COGNITIVE-BEHAVIORAL GROUP THERAPY FOR IRRITABLE BOWEL SYNDROME: EFFECTS AND LONG-TERM FOLLOW-UP

Dulmen van AM, Fennis JFM, Bleijenberg G. Cognitive-behavioral group therapy for irritable bowel syndrome: effects and long-term follow-up. *Psychosom Med* 1996 (in press).

ABSTRACT

Objective Little is known about the effectiveness of cognitive-behavioral treatment for patients with irritable bowel syndrome on a *group* basis. Previous studies have used only small samples and studies with a long-term follow-up are lacking. The aim of the present study was to investigate 1) the effectiveness of a cognitive-behavioral group treatment compared to a waiting-list control condition in alleviating abdominal complaints, and 2) the long-term effectiveness of cognitive-behavioral group treatment.

Method In study 1 we performed a controlled study with 25 patients in the group treatment condition and 20 patients in the waiting-list control condition. Treatment consisted of 8 two-hour group sessions over a period of three months. In study 2 all patients were treated and followed-up for an average of 2.25 years (range 6 months - 4 years) after the completion of the group treatment.

Results The abdominal complaints of the patients who underwent treatment were found to improve significantly more than the complaints of the patients awaiting treatment. Moreover, in agreement with the purpose of the therapy, the number of successful coping strategies was found to increase more and patients' avoidance behavior was found to decrease more in the treatment group than in the waiting-list control group. The positive changes appeared to persist during follow-up.

Conclusions Cognitive-behavioral group treatment is effective in alleviating irritable bowel syndrome, in stimulating coping strategies, and in reducing avoidance behavior. At long-term follow-up, the abdominal complaints, the number of successful coping strategies, and the avoidance behavior are still improved compared to the pretreatment assessment.

INTRODUCTION

Abdominal complaints have a high prevalence in the general population associated with a high rate of medical visits[1]. Sixteen percent of the patients attending a general practitioner with abdominal complaints are referred for extensive physical examination, most often to internal medicine[2]. In the majority of referred cases no somatic explanation can be found[3,4]. These so called functional abdominal complaints can also be referred to as irritable bowel syndrome, of which two definitions are known based on broad[5] and restrictive criteria[6], respectively. Irritable bowel syndrome appears to have a poor prognosis[7-9]. Standard medical treatments, such as medication and dietary advice, are rather ineffective in improving this prognosis[10,11].

Recently we found at an out-patient internal medicine clinic that during medical consultations doctors are able to influence complaint-related cognitions and that these achieved changes are related to improvement of irritable bowel symptoms at follow-up[9,12]. Thus, at least some patients with irritable bowel syndrome can be treated successfully during medical consultations with minimal psychological intervention. Patients who did not improve or improved less after the consultations, appeared to report more somatic attributions and catastrophizing cognitions as well as less psychological attributions and self-efficacy expectations[9]. For these patients with severe and chronic complaints referral to a behavior therapist may be indicated.

Psychotherapeutic treatment programs administered individually have shown to be effective in alleviating irritable bowel syndrome[13-20]. However, given the large numbers of patients with irritable bowel syndrome and the general concern with cost containment in health care, it seems worthwhile to establish the effects of cognitive-behavioral group treatment. The first uncontrolled study in which the effectiveness of behavioral group therapy was evaluated was reported by Wise et al. in 1982[21]. After this group treatment one third of a group of twenty treated patients reported a reduction of their abdominal complaints. Positive results were also reported by Blanchard and Schwarz who evaluated the short-term effects of cognitive-behavioral group treatment on three groups with a total of fourteen patients[22]. This group treatment was an adaptation of their behavioral treatment program administered individually[16]. These uncontrolled studies suggest that cognitive-behavioral group treatment is effective in alleviating abdominal complaints. Long-term effects of cognitive-behavioral group treatment are not known. The aim of the present study was to investigate the effectiveness of group treatment compared to a waiting-list control group (study 1) as well as the long-term effects of this cognitive-behavioral group treatment (study 2).

STUDY 1

METHODS

Subjects

Forty-seven out-patients with refractory irritable bowel syndrome were recruited by the out-patient university clinic for internal medicine for cognitive-behavioral group treatment. Irritable bowel syndrome was broadly defined as abdominal pain with or without disordered defecation with a duration of at least three months in the absence of any recognized gastrointestinal pathology[5]; the abdominal pain-

predominant patients were considered to have refractory irritable bowel syndrome when they had not responded to the out-patient standard approach, reassurance and education, for patients with irritable bowel syndrome[13,23]. Patients were allocated to the treatment condition which was presented as 'a course in coping with abdominal complaints' until the first group was full, then the next patients were put on the waiting-list until a new group began. Ultimately, seven groups were completed. To restrict the duration of the waiting period, each group consisted partly of patients from the waiting list and partly of recently referred patients. The treatment condition consisted of 27 patients, sixteen women and eleven men, with a mean age of 44 (SD 11) years and a mean duration of abdominal complaints of 5.0 (SD 4.2) years. The waiting-list control group consisted of twenty patients, eight women and twelve men, with a mean age of 48 (SD 14) years, and a mean duration of complaints of 5.3 (SD 4.0) years. The mean duration of the waiting period was 3.5 months (SD 1.5), which is about the same duration as the group treatment. During treatment and waiting period, no concomitant somatic treatment was given. As two patients in the treatment condition returned an incomplete questionnaire, the effects of the group treatment could only be evaluated in 25 patients.

Group treatment

All patients underwent the same treatment, which consisted of eight two-hour group sessions over a period of three months. An experienced psychotherapist and a junior psychologist conducted all sessions, aimed at modifying maladaptive cognitions and behavior, and stimulating different and more effective ways of coping with the complaints. The group treatment was based on principles from cognitive-behavioral treatment[24,25] and combined:

(1) patient education about the role of cognitions, behavior, emotions, and environment in relation to the abdominal complaints. Attention was given to correction of unjustified or dysfunctional attributions, to events or circumstances preceding or following the presence of complaints, and to reactions, in thinking, feeling, or behavior, to the presence of complaints;

(2) homework. Patients were stimulated to change their complaint-related cognitions and behavior and to try out new ways of thinking and behaving between sessions. The patients described their experiences in a diary;

(3) group conversation. During the sessions much time was spent talking about the educational part and the patients' experiences with the homework. Attention was given to mutual recognition of the problems the participants had in coping with

their pain;
(4) training in progressive muscle relaxation. Each session was concluded by a muscle relaxation exercise[26]. Patients were instructed how to use these exercises at home and in daily life. Later on, coping imagery exercises were added.
The information which was presented during each session, the relaxation instructions, and the homework were also given in written form as a course book. Themes of the sessions were:
1) General introduction; 2) Cognitions and abdominal pain; 3) Changing cognitions; 4) Discovering antecedent cognitions and behavior; 5) Changing behavior; 6) Role of environment; 7) Changing complaint-related lifestyle; 8) Coping in the future.

Assessment
Patients completed the following questionnaires at first and second assessment; patients in the treatment group before and after the completion of the treatment, patients in the waiting-list control group before and after the waiting period:

1. Diary
The *Daily Abdominal Complaint Score* (DAC) was measured using a prescheduled diary in which patients rated their abdominal pain through self-observation four times daily during two weeks on a scale from 0 (no pain) to 4 (serious interfering pain). Thus the DAC score could vary between 0 and 16[27,28]. This score is reliable and able to measure change[28].
Daily duration of the abdominal pain was also measured by means of the diary in which patients reported four times daily how long they had experienced abdominal pain since the last measurement. Scores ranged from 0 (zero hours), 1 (less than two hours), 3 (more than two hours but less than four hours), to 5 (more than four hours). Scores at breakfast were doubled because at that time ratings were based on the preceding night, a period twice as long as the intervals between consecutive ratings at the daytime. So the daily duration of the abdominal pain could vary between 0 and 25[27,28].
Daily avoidance behavior was measured using the above mentioned diary in which patients reported four times daily whether or not they had avoided certain activities because of the abdominal pain since their last observation. An individual avoidance score was presented as a percentage, indicating the number of times the patient reported avoidance, divided by the total number of observations during the two weeks.
Finally, in the diary patients reported four times daily whether they had suffered

from the following *gastrointestinal complaints*: flatulence, belching, nausea, heartburn, abdominal rumbling. Details of the defecation were also noted: difficult or painful evacuation, a feeling of incomplete evacuation, and the type of defecation (hard, well-formed, or pulpy stools).

2. Abdominal complaint inventory

In the abdominal complaint inventory biographical data, history and details of the complaints as well as coping strategies, use of medication for abdominal complaints.

The *severity score* of the abdominal complaints (range 0-9) was determined by summing the reported frequency of the complaints (0-3), interference with daily activities (0-3), and avoidance behavior (0-3). A score of 0 refers to patients who experienced abdominal complaints less than once a month, without being bordered by these complaints; 9 to patients who reported daily complaints, and much interference and avoidance behavior[7,9].

The number of *coping strategies* patients used to cope with their complaints successfully was counted. For that purpose, patients were asked to indicate how many of fourteen different ways of behaving or thinking (e.g. relaxation excercises; avoiding certain foods or drinks; thinking that the complaints are bearable) most often resulted in experiencing less complaints. This list of coping strategies was adapted from the Pain Coping Inventory, a reliable 33-item scale referring to the patient's use of cognitive and instrumental strategies when in pain[29].

3. Psychological well-being

The Symptom Check List (SCL-90) was used as a parameter for psychological well-being; the total score was used[30]. A high score reflects a decreased level of psychological well-being.

Outcome measures

Following its purpose, treatment was evaluated in terms of changes in Daily Abdominal Complaint score (DAC), daily duration of the pain, daily avoidance, severity score, number of successful coping strategies, and psychological well-being. Moreover, DAC scores were used to assess the outcome of treatment on an individual subject basis by calculating the percentage change for each patient. A patient was defined as clinically improved when the DAC score had decreased 50% or more[31].

Statistics

Differences between subgroups of patients were investigated using Mann-Whitney U test and Chi-square. For each patient a change score was calculated by subtracting scores at second assessment from baseline scores. Using these change scores, it was possible to compare the amount of changes in treated patients and controls using Mann-Whitney U test and independent t-test (for the number of coping strategies). Statistical significance for all tests was set at the 5% level.

RESULTS

Treatment group versus waiting-list control group at baseline

No significant differences emerged among the baseline scores on demographic and symptom measures between treatment group (n = 27) and control group (n = 20). Moreover, no baseline differences emerged among the number of successful coping strategies, daily avoidance behavior, and the level of psychological well-being. So both groups appeared to be well-matched.

Changes between first and second assessment

Table 1 presents the means on the DAC score, daily duration, daily avoidance, severity score, number of successful coping strategies, and psychological well-being at first and second assessment for treated patients and controls. Patients' DAC score, daily duration, daily avoidance, and number of successful coping strategies appeared to improve significantly more during the group treatment than during the waiting period. No significant differences were found comparing improvement in the level of psychological well-being or in any of the secondary gastrointestinal complaints.

The mean *decrease* in the DAC score for all patients in the treatment group was 37% (SD 40); all controls showed a mean *increase* of 22% (SD 80). This difference was statistically significant ($P = 0.005$). Forty-four percent of the patients in the treatment group and 11% of the controls showed a decrease in the DAC score of more than 50% ($P = 0.02$). Moreover, in the treatment and in the control group, no differences were found in the mean change in the DAC score between female and male patients.

Treatment of waiting-list controls

Eighteen of the 20 patients from the waiting-list control group subsequently underwent group treatment. During this group treatment, the DAC score of these patients *decreased* with an average of 23% (SD 40), not significantly different from

the original treatment group ($P=0.26$).

Two patients refused the offered treatment. The baseline scores from these two patients were within 0.6 SD from the mean of the treated patients, except for psychological well-being, which was found to be much lower in the two refusers.

Table 1. *Mean scores on complaints, daily avoidance, number of successful coping strategies, and psychological well-being at first and second assessment for treatment (T) (n = 25) and control group (C) (n = 20) with level of significance of the difference in change scores.*

		first assessment M (SD)	second assessment M (SD)	P
Diary*				
DAC score	T	5.66 (2.77)	3.68 (3.35)¶	.002
	C	4.81 (2.64)	5.41 (3.46)	
Daily duration	T	10.90 (6.29)	6.77 (6.60)¶	.047
	C	10.80 (7.66)	10.73 (7.71)	
Daily avoidance	T	19.17 (28.88)	17.39 (29.32)¶	.003
	C	14.03 (20.43)	21.94 (27.61)¶	
Inventory				
Severity score	T	5.40 (1.75)	4.76 (2.09)	.090
	C	4.85 (1.90)	5.00 (2.20)	
Number of successful coping strategies	T	2.20 (2.50)	4.20 (3.00)¶	.044
	C	2.50 (2.61)	2.70 (2.08)	
Psychological well-being	T	156 (49.60)	147 (54.18)	.37
	C	152 (43.20)	153 (46.11)	

* The prescheduled diary was completed by 24 patients in the treatment condition and 18 controls

¶ Significant within group changes between consecutive assessments

Improvement in psychological well-being

Although patients' psychological well-being did not appear to improve as a result of the group treatment, improvement in psychological well-being was found to correlate significantly with reductions in the daily abdominal complaint score ($r = 0.46$, $P = 0.002$), daily duration ($r = 0.35$, $P = 0.01$), and severity score ($r = 0.46$, $P = 0.001$) during treatment ($n = 43$).

STUDY 2

METHODS

Subjects

Since all patients from study 1 ultimately received the same treatment, we report the results of a long-term follow-up study of both groups of patients together. Patients were asked to complete questionnaires at several occasions after completing treatment, namely at 6, 12, 24, 36, and 48 months posttreatment. Because not all patients had completed treatment at least 48 months ago, follow-up points differed. Follow-up results were available for 32 patients from the 45 patients who underwent treatment; six patients completed treatment but did not return the follow-up questionnaire; seven patients returned an incomplete follow-up questionnaire. The follow-up group consisted of 16 women and 16 men. The mean length of time between completion of the group treatment and follow-up assessment was 2.25 years (SD 1.12) with a range from 6 months to 4 years. Twenty-seven patients completed the prescheduled diary during two weeks at follow-up.

Assessment at follow-up

At follow-up, patients completed the same instruments as described in study 1. Data collected at the end of the waiting period were used as pretreatment measurements for the follow-up study of former controls.

Statistics

Changes in scores on complaints (DAC, duration, and severity), daily avoidance, and psychological well-being between pretreatment and follow-up were measured using Wilcoxon matched-pairs signed-ranks test. Changes in the number of coping strategies were measured using paired t-test. Change scores were calculated by subtracting the scores at follow-up from the scores at pretreatment, and used to compare the amount of change in former controls and treated patients, in patients with a short and a long follow-up, and in female and male patients, by means of Mann-Whitney U test. Differences between subgroups of patients were investiga-

ted using Mann-Whitney U and Chi-square tests. Spearman rank correlation coefficients were used to investigate the relationships between improvement in the DAC score and the use of medication and health care services at follow-up. Statistical significance was set at the 5% level.

RESULTS

Follow-up group versus missings

At baseline, the 32 patients in the follow-up group and the 13 patients who did not return the follow-up questionnaire or filled it in incompletely were comparable with respect to sex, age, duration of complaints before referral, and expectations regarding the treatment. Furthermore, no differences were found between both groups in the DAC score, daily duration of the abdominal pain, daily avoidance, severity score, number of successful coping strategies, and psychological well-being immediately after treatment. Thus, not returning the follow-up questionnaires did not appear to be related to differences in the treatment outcome. The 5 patients who did not complete the prescheduled diary at follow-up did not differ with respect to any of the above mentioned variables from the patients who completed the diary at follow-up.

Concomitant treatment during follow-up

During follow-up, three patients from the original treatment condition and two patients from the waiting-list received either individual cognitive-behavioral psychotherapy or psychiatric treatment for problems which came up during the group therapy (post traumatic stress disorders and obsessive-compulsive disorder, respectively). These 5 patients did not appear to improve more or less on any of the outcome measures from those not receiving concomitant psychotherapeutic treatment.

Changes between pretreatment and follow-up

Table 2 shows the means on abdominal complaints, daily avoidance, number of successful coping strategies, and psychological well-being at pretreatment and at follow-up. The means on all outcome measures at follow-up were improved compared to the pretreatment means, and reached conventional levels of significance ($P<.05$) on the DAC score, daily duration, daily avoidance, and the number of successful coping strategies. Moreover, at follow-up patients appeared to be bothered significantly less by the secondary gastrointestinal complaints 'flatulence' ($P=0.01$), 'abdominal rumbling' ($P=0.003$), and 'difficult or painful

defecation' ($P=0.01$) as noted in the diary compared to pretreatment. Between pretreatment and follow-up, the DAC score decreased with an average of 23% (SD 58). The more the DAC score decreased, the less patients reported using medication for abdominal complaints ($r=-0.44$, $P=0.01$) and consulting their general practitioner for abdominal complaints at follow-up ($r=-0.43$, $P=0.01$).

Table 2. *Mean scores on complaints, daily avoidance, number of successful coping strategies, and psychological well-being at pretreatment and follow-up (N=32) with level of significance of the difference between pretreatment and follow-up.*

	pretreatment		follow-up		
	M	(SD)	M	(SD)	P
Diary*					
DAC score	5.60	(3.25)	3.91	(3.36)	.005
Daily duration	11.47	(7.75)	8.72	(8.37)	.039
Daily avoidance	21.22	(30.20)	13.11	(27.86)	.035
Inventory					
Severity score	5.06	(1.99)	4.34	(2.56)	.091
Number of successful coping strategies	2.12	(1.79)	3.09	(2.75)	.037
Psychological well-being	149	(45.90)	145	(56.42)	.39

* The prescheduled diary was completed by 27 patients

Using the criterion for clinical improvement of ≥50% decrease, in thirty-seven percent of the patients the DAC score appeared to be clinically improved. In addition, the following gastrointestinal complaints were clinically improved in at least half of the patients who were bothered by that complaint: 'flatulence' (reported by 23 patients of which 57% clinically improved), 'belching' (reported by 16 patients of which 63% clinically improved), 'nausea' (reported by 16 patients of which 50% clinically improved), 'heartburn' (reported by 11 patients of which 73% clinically improved), and 'abdominal rumbling' (reported by 23 patients of which 65% clinically improved). No differences emerged in comparing the follow-up results of former controls and first-treated patients, and in the comparison of the results of female and male patients.

Short- versus long-term follow-up

As there is a considerable range in the duration of the follow-up, we investigated whether the treatment outcome differed between patients with a shorter and a longer duration of follow-up. Comparing patients with ≤ 1 year (n = 9) and > 1 year (n = 23) follow-up revealed no differences in any of the outcome measures just as comparing patients with ≤ 2 years (n = 17) and > 2 years (n = 15) follow-up.

DISCUSSION

The results of the present study indicate that a cognitive-behavioral group treatment is more effective in alleviating irritable bowel syndrome than a waiting period without intervention. Cognitive-behavioral group treatment not only improved the daily observed intensity and duration of the complaints, but also reduced patients' daily avoidance behavior and increased the number of successful cognitive and behavioral coping strategies. It may be assumed that this is a direct result of the treatment, which aimed at restructuring patients' complaint-related cognitions and behavior.

The improvement found at posttreatment appeared to be maintained at follow-up; an average of more than two years after completion of the group treatment, the abdominal complaints were still improved compared to their pretreatment levels. Moreover, patients still utilized more successful coping strategies than prior to treatment. As we could not find any difference between a short- and a long-term follow-up, it may be concluded that our brief group treatment has long-term effects. Analyzing the specific nature of the coping strategies revealed that doing relaxation exercises was not the only successful one, as was suggested in an earlier study[32]. More positive cognitions and emotions, such as 'worrying less', 'getting angry less frequently', and 'thinking that the pain will decrease', appeared to have a favorable influence on the abdominal complaints too. Apparently, comparable with earlier findings[12,20], changes in abdominal complaints are associated with changes in thoughts and behaviors.

Besides the favorable treatment results mentioned above, our study has some methodological assets too. Firstly, in this study patients rated their abdominal complaints four times daily, whereas in other studies complaints were either rated only once-per-day[13-20,22,32-34] or not at all assessed by self-observation[21]. Moreover, patients in this study not only rated their abdominal pain and type of defecation through daily self-observation, but also five other gastrointestinal complaints associated with irritable bowel syndrome. As most abdominal symptoms occur

erratically throughout the day[35], we believe that assessing complaints four times daily is more valid than assessing complaints once-per-day. A consequence of this assessment difference is that the clinical outcome of our study cannot be compared with that found by others. Secondly, in contrast to other studies, the present study evaluated a rather large patient sample (n = 43), using a controlled design and a long-term follow-up. Other studies evaluating group therapy for patients with IBS were either uncontrolled, used self-selected patients, only small samples, or only investigated short-term effects[21,22].

The present study fulfilled a number of Klein's stringent criteria necessary for a satisfactory treatment trial in irritable bowel syndrome[10]. The study used clear entry criteria and demographic features to establish the generalizability of the results, adequate sample sizes, valid statistical techniques, a treatment trial of sufficient length (three months), baseline comparisons between conditions, and relevant outcome measures. Nevertheless, this study has methodological limitations. The first shortcoming is the not strict random allocation. A period of allocation to the experimental group was followed by a period of allocation to the waiting list and so on. A consequence of a complete random design would have been that the patients in the waiting list had to wait a long time before treatment could be offered to them. Despite this lack of proper randomization, our experimental and control group appeared to be similar with respect to baseline measures, and as a consequence were considered to be well-matched. Therefore, we believe that this shortcoming has not distorted our findings.
Furthermore an attention placebo control group would have been a better comparison. In psychotherapy research, however, it is very difficult to provide proper attention placebo treatment. Also, the therapist can seldom or never be blinded. As we saw improvements in the number of coping strategies and in the avoidance behavior corresponding with the aim of the treatment, it is less probable that these positive results arose just because patients were given attention regardless of its nature.
Moreover, we investigated the short-term effects of cognitive-behavioral group treatment in a controlled trial. In investigating the long-term effects, no waiting-list control group was used, because waiting to start treatment for an average of two years was believed to be unethical. Patients could have improved regardless of the followed treatment. However, the prognosis of irritable bowel syndrome is known to be poor[7-9]. In this light, our results can considered to be positive. It would increase the impact of our findings if future studies could prove the long-term

superiority of cognitive-behavioral group treatment over the natural course or usual care for patients with IBS.

One could furthermore argue that we should have adjusted our α-level for the number of comparisons[36,37]. Yet, following the purpose of the treatment offered, we expected to find differences in a restricted number of six outcome measures. Even if we would have adjusted our α-level, significant improvements in Daily Abdominal Complaint score and daily avoidance would continue to exist.

Finally, in the present study IBS was defined broadly, based on the Rome criteria[5], as abdominal pain *with or without* disordered defecation not explained by any structural or biochemical abnormalities; all patients in this study appeared to suffer from abdominal pain with or without disordered defecation. In the more restrictive definition of IBS[6], abdominal pain and disordered defecation must both be present. For that reason, in studies on patients with restrictive IBS treatment outcome is evaluated on the basis of changes in pain *and* constipation *and/or* diarrhoea[22]. In agreement with our definition of IBS, we calculated a reduction score based on changes in abdominal pain only, without taking into account possible disordered defecation.

The clinical outcome of cognitive-behavioral group therapy might improve further by prolonging the treatment, assessing long-term effects using a control group or altering the size of the groups. The group treatment we offered consisted of only 8 therapy sessions, less than the number of sessions offered by others[22]. Although our short-term treatment appeared to have long-term effects, it is still possible that more sessions would increase the effectiveness of the treatment.

As a result of the broad criteria we used in defining irritable bowel syndrome, our results can strictly speaking be generalized reliably only to the subgroup of broadly defined abdominal pain-predominant refractory out-patients with irritable bowel syndrome. Yet, as gastrointestinal complaints associated with restrictively defined irritable bowel syndrome were also found to improve during follow-up, the present results can possibly be generalized to this group of patients too.

Remarkably, patients' psychological well-being did not appear to improve as a result of the group treatment. However, improvement in psychological well-being appeared to be related to improvement in abdominal complaints. Results of cross-lagged panel analysis[38] confirmed that the level of patients' psychological well-being is a consequence of the daily observed intensity of the abdominal complaints rather than a precursor, consistent with the results of an earlier study which found that physical health had a positive effect on mental health[38,39].

Short-term cognitive-behavioral group treatment appears to have a long-term effectiveness in alleviating abdominal complaints of referred patients with severe and chronic IBS. Therefore, doctors are recommended to refer their patients with refractory IBS at an early stage to cognitive-behavioral therapy.

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TOWARDS EFFECTIVE REASSURANCE IN IRRITABLE BOWEL SYNDROME; THE IMPORTANCE OF ATTENDING TO PATIENTS' COMPLAINT-RELATED COGNITIONS

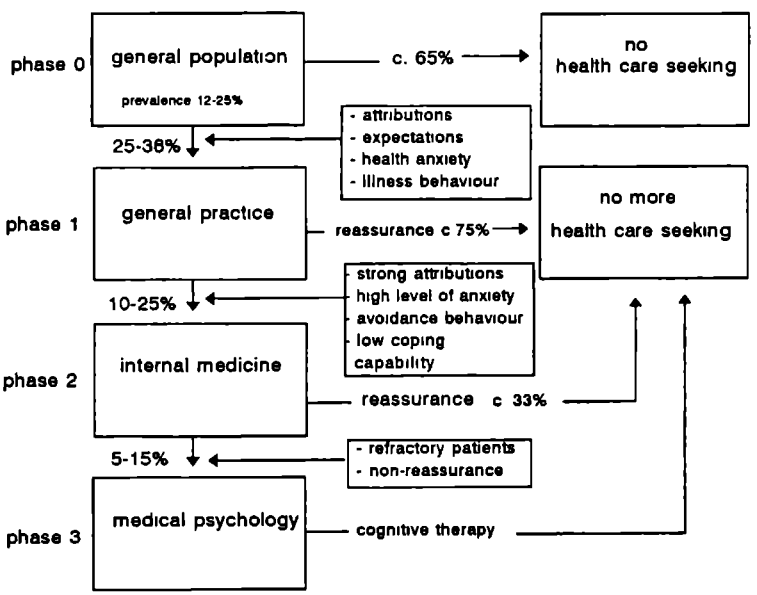
Dulmen van AM, Fennis JFM, Bleijenberg G. Towards effective reassurance in irritable bowel syndrome; the importance of attending to patients' complaint-related cognitions. (Submitted).

ABSTRACT
This article presents a review of the role of complaint-related cognitions, emotions, and behaviours, as well as environmental factors in patients with irritable bowel syndrome during each phase of the medical health care process. Complaint-related factors appear to trigger a person to consult a doctor. During subsequent medical consultations, doctors effectively attend to these factors by means of patient-centred interviewing. Yet, a more thorough and individually tailored complaint analysis is required to systematically and explicitly explore and discuss the different complaint dimensions. Such an interactive complaint analysis by the doctor is considered to be a prerequisite for the effective reassurance of the patients and this is reflected by positive changes in dysfunctional complaint-related cognitions, emotions, and behaviours. A structured Course in Interactive Consulting may help doctors to acquire this interactive patient-centred complaint analysis.

INTRODUCTION
Functional abdominal complaints, otherwise known as broadly defined irritable bowel syndrome (IBS)[1], are widespread in the general population. The estimated prevalence is 12-25%[2-8]. Yet, only 25-38% of such persons seek health care[2,5,6,9].
Apparently, not every person interprets the same bodily signal as a reason to require medical attention. Someone may, for instance, attribute the complaints to having eaten something wrong, whereas others may be convinced to suffer from a malignancy. Presumably, persons have different complaint-related cognitions and emotions that determine whether they seek medical health care or not. Consequently, when a person does decide to consult a general practitioner (GP), it is important that the GP sorts out 'why this person has come with this particular complaint at this particular moment'[10]. In 55-70% of such patients the GP cannot find a somatic explanation[11,12]. Of the patients attending a GP with abdominal complaints, 10-25% is referred for extensive physical examination, most often to internal medicine[13-15]. In fact, 65-89% of the patients referred to internal medicine with abdominal complaints appear to suffer from functional abdominal complaints[16-19] for which conventional medical treatments are of limited value[20]. Apparently, these complaints require a different approach[13,21-24].
Nevertheless, especially in the secondary care setting, attention is likely to be primarily somatic, with the intrinsic risk to overlook the meaning of the

complaints for the patient. Insight into the nature of the complaint-related cognitions and accompanying emotions that prompt a person to consult a doctor may indicate which factors need doctors' explicit attention. This is important because understanding patient's beliefs and concerns offers the possibility of correcting dysfunctional cognitions and misconceptions, of diminishing patient's anxieties about health, and of giving the patient specific reassurance. Furthermore, it offers the possibility of increasing patient satisfaction, of stimulating adequate coping behaviour, and thereby of lowering medical consumption[25,26]. However, we do not know to what extent doctors actually acknowledge patients' complaint-related cognitions and emotions.

Figure 1 The process of health care in IBS-patients



In order to explore the significance of medical attention to complaint-related cognitions and emotions in IBS-patients and, furthermore, to increase insight into the not only somatically determined process which channels these patients

through medical health care, this article reviews relevant literature concerning doctors' attention to the complaint-related cognitions and emotions of IBS-patients in primary and secondary care. This article also examines whether the factors requiring medical attention in IBS-patients, require equal attention in other complaints. As was indicated above, patients with IBS are common in primary and secondary care. Besides, approximately 5-15% of secondary care IBS-patients are referred for more extensive psychological treatment (Figure 1)[24,27]. Therefore, we will attend to the role of complaint-related cognitions and emotions in every phase of health care on the basis of empirical studies. In order to structure the literature, each phase is directed by a specific research question.

1 Which factors contribute to the health-care-seeking behaviour of IBS-patients? Do the same factors apply to the health-care-seeking behaviour of patients with other complaints? (Phase 0)
2 Do GPs attend to patients' complaint-related cognitions and emotions? Do cognitions and emotions contribute to the referral of IBS-patients to secondary care? (Phase 1)
3 Do medical specialists attend to complaint-related cognitions and emotions of IBS-patients? (Phase 2)
4 Which factors contribute to the referral of IBS-patients to psychological treatment? (Phase 3)

Answers to these questions are likely to yield implications for doctor-patient interactions in general and for an effective reassurance of IBS-patients in particular.

PHASE 0

Which factors contribute to the health-care-seeking behaviour of IBS-patients?

As was mentioned in the introduction, only a small number of people with symptoms compatible of IBS visit their GP for these complaints. Daily reports of abdominal complaints do not appear to differ between IBS-consulters and IBS-non-consulters[28]. This suggests that the abdominal complaints per se are not sufficient to explain physician visits. Therefore, it is important to identify the factors possibly contributing to the health-care-seeking behaviour in IBS-patients.

One of the potentially contributing factors might be patients' attributions, i.e. the causes patients attribute to their abdominal complaints. In order to identify characteristics that distinguish IBS consulters from IBS non-consulters, Sandler

and colleagues surveyed 566 healthy subjects[3]. Fifteen percent of these persons appeared to have IBS-symptoms, but only 38% of those affected had consulted a doctor for these complaints. Persons who had ever consulted a doctor for their complaints appeared to be older than IBS non-consulters and to think that their symptoms were influenced by stress. As the patients in this study were, however, questioned about their cognitions *after* consulting the doctor, the consultation might have influenced patients' attributions. Before the medical consultation, patients would probably have attributed their complaints more often to a somatic abnormality. Unfortunately, this study did not measure patients' perceived seriousness of the complaints as Kettell et al did[6]. In a sample of 1620 general practice patients, they found that 22% had symptoms compatible with IBS, but only 33% of the patients had consulted their GP for these complaints[6]. A random sample of 24 consulting patients who were still symptomatic after one year was selected for further study. This group was age and sex matched with 24 other symptomatic patients who had still not sought medical advice for their problems. Their results indicated that consulters were more concerned about the serious nature of their symptoms than non-consulters, even after controlling for the severity of the complaints.

The causes to which patients attribute their complaints are likely to stir up complaint-related emotions, which might also contribute to the decision to seek health care in IBS-consulters. Whitehead et al investigated the health-care-seeking behaviour in 22 female IBS-patients and 42 female IBS non-consulters[29]. They found that symptoms of psychologic distress measured by the Symptom Checklist[30], such as anxiety and somatisation, influenced patients' decision to consult a GP. These findings were confirmed by Drossman et al who compared 82 IBS non-consulters with 72 IBS patients[31]. Compared with non-consulters, patients reported stronger somatic concerns and worries about health, even when controlled for the severity of the pain. They scored for instance higher on the item 'Do you think there is something seriously wrong with your body?', i.e. they attributed their complaints more often to an underlying somatic abnormality.

The decision to seek health care for IBS-symptoms is also likely to be influenced by environmental factors. Whitehead et al explored the illness behaviour of 67 persons with IBS-symptoms learned during childhood[32]. Forty-five percent of these persons reported that their parents gave them gifts or specific foods when they were sick as a child. This percentage was significantly higher compared with a group of 84 non-consulters with peptic ulcer disease. Lowman et al

found that people with IBS-symptoms (58 IBS-patients and 67 IBS-non-patients) also differed from 79 healthy subjects by reporting more parental attention and reward for being ill[33]. These findings seem to indicate that environmental factors may contribute to IBS-symptoms. Support for this suggestion comes from a study by Kay et al who found that the more persons tend to be influenced by others, the higher the prevalence of IBS[34].

It may be wondered whether the same factors which are found to be related to the health-care-seeking behaviour in IBS-patients, such as complaint attributions and emotions, and environmental factors, also contribute to health-care-seeking behaviour in persons with other complaints. This is explored in the following section.

Which factors contribute to the health-care-seeking behaviour of patients with other complaints?

Not only in IBS, but in general, it is a well-known, yet peculiar fact that only a small part of symptoms reported as being experienced by subjects are taken to the doctor. This general 'iceberg-phenomenon'[35] might also be understood by looking at patients' decision to seek health care. Ingham and Miller interviewed 1416 symptomatic GP-patients, one half of them consulters, the other half non-consulters[36]. These persons differed remarkably in their answer on the following question: 'What do you think is causing these symptoms?". Their answers indicated that, compared to non-consulters, consulters more often attributed their complaints to somatic causes. Berkanovic et al investigated 769 individuals who had experienced a symptom during the preceding six weeks[37]. The most powerful predictors in their decision to seek medical health care appeared to have been their symptom-specific health beliefs, such as their expectation of the efficacy of care (e.g. 'When you realized that you had this problem how much good did you think a doctor could have done you?'), their beliefs about the seriousness of the symptom (e.g. 'How serious did you think this condition was?'), and their worry about health (e.g. 'Whenever I get sick it concerns me a lot'). So, the more patients reported to have expected that their doctor could be of any help and the more serious they thought their symptoms were, the more frequently patients had visited their doctor. Similar results were reported by Meininger surveying 532 GP attenders using a four-week recall period[38], and by Van de Kar et al exploring the cognitions and emotions experienced by 791 GP attenders before visiting the GP[39,40].

Williams et al specifically explored the expectations of 504 patients prior to attending the GP[41]. Ninety percent of these patients indicated that they agreed on the expectation 'I want the doctor to understand my problem'. The second most frequently reported expectation, agreed upon by 84% of the patients, was 'I want the doctor to explain what is wrong with me'. In another study, 100 patients were specifically asked to indicate their complaint-related worries prior to seeing the GP[42]. Findings revealed that 68% of the patients hold a complaint-related worry such as 'I am worried that I have symptoms that are the start of something serious'.
Other factors determining whether a person seeks health care or not might be environmental factors as identified in IBS-patients. Data from 769 symptomatic individuals showed that there is a substantial positive relationship between social network advice to see a doctor and the respondent's actual visit[37]. Findings from this study furthermore showed that more individuals seek health care when their belief about the efficacy of GP care is congruent with the advice from their social network to see a doctor[43]. These findings were confirmed by Van de Kar et al surveying 450 general practice patients, who furthermore found that other environmental factors, namely the information provided by the mass media, increased the likelihood of the patients consulting the GP[39].

In conclusion, a number of factors, i.e. complaint-related cognitions, such as expectations, attributions and worries, and environmental factors, appear to be associated with the decision to seek medical health care. These factors occurred largely irrespective of the nature of the complaint. The significance of complaint-related cognitions and emotions in patients' decision to seek health care will have implications for medical practice.

PHASE 1

Do GPs attend to patients' complaint-related cognitions and emotions?

Remarkably, neither empirical studies nor opinioned articles were found that specifically addressed GPs' attention to the complaint-related cognitions and emotions in IBS-patients. Therefore, we have to confine ourselves in this section to an exploration of the literature in which attention to the meaning of the complaints for the patient is advocated irrespective of the nature of the complaints. Attention to patients' complaint-related cognitions and emotions is not only inspired by its contribution to patients' health-care-seeking behaviour. According to Helman 'understanding the patient's perspective is in itself a

prerequisite for successful doctor-patient communication'[44]. Besides, when patients consult a GP, about 50% of the time their complaints cannot be adequately explained by the conventional biomedical model[45]. And even when disease is present, it may not adequately explain the patient's suffering. According to Weston and Brown 'to understand a patient's experience of complaints a doctor must attempt to enter into the patient's world, to understand the patient's beliefs about what is wrong, why it happened, and what should be done'[46]. More specifically, doctors are encouraged to explore patients' complaint-related cognitions and emotions[47], as well as their avoidance behaviour and the influence of environmental factors on the complaints[48]. Thereby, the question arises how GPs actually attend to these factors.

Attention to cognitions by patient-centred interviewing Byrne and Long were among the first to show the importance of using a so-called patient-centred method in primary care, i.e. allowing the patient to express all the reasons for his attendance, including symptoms, expectations, thoughts and feelings[48]. Since then, patient-centredness has been found to benefit the *patient* as well as the *GP*. In this section it is explored whether the patient-centred approach is indeed an effective way of attending to patients' complaint-related cognitions and emotions. Moreover, the influence of a patient-centred attitude on patients' cognitions, satisfaction, compliance and medical consumption is evaluated.

The *patient* is likely to benefit from a patient-centred approach as it appears to be associated with a reduction of the patient's concerns, with the patient feeling understood, and also with patient satisfaction and compliance. In a prospective follow-up study, Henbest and Stewart audiotaped 73 general practice consultations with patients whose presentation included a new symptom[50]. Patient-centredness was measured from the audiotape by an independent rater in terms of the doctor's response to the patient's reasons for attendance, ranging from no response to facilitative responses. The commonest response by the doctor appeared to be a closed response, defined as a closed question or an answer by the doctor that prevented further exploration of the subject by the patient. After controlling for patient, doctor, problem, and practice variables, patients who had received the highest level of patient-centred response by the doctor were more likely to report after the consultation that their reasons for attendance, including symptoms, expectations, thoughts and feelings, had been discussed completely. These patients were also more likely to report that the importance of each reason had been understood by the doctor and, most

importantly, that their concern about the seriousness of the main symptom had decreased. These positive consequences of the patient-centred approach were replicated in another study with 74 patients[51]. Apparently, patient-centred interviewing helps to diminish patients' complaint-related worries.
In the already mentioned study by Van de Kar et al, patients were also asked about their satisfaction with the discussion of their worry using two questions: 'Did you have the opportunity to discuss your uncertainty about your health with the GP?' and 'Did you have the opportunity to discuss your anxiety about your health with the GP?'[40]. The higher patients' scores on these questions, the higher their level of satisfaction. After the consultation worry appeared to be decreased more in patients who reported that their concerns were discussed satisfactorily than in patients who felt that their worries were not satisfactorily discussed. These findings suggest that discussion of patients' complaint-related cognitions and emotions may lead to a reduction of dysfunctional cognitions and to a higher level of patient satisfaction. The positive influence of patient-centred interviewing on patient satisfaction was also found by Winefield et al who examined audiotaped general practice consultations from 21 GPs with ten consecutive patients of each[62]. From the transcribed verbal interaction patient-centred behaviour by the GP was rated by independent observers in terms of allowing the patient to express his cognitions and emotions, responding to them, relating explanations to them, involving the patient in management decisions, and checking patient understanding. Immediately after the consultation, patients expressed their satisfaction with the consultation. Patient satisfaction appeared to be positively related to the doctor's patient-centredness.
Stewart found that patient-centredness has relevance for patient compliance as well[63]. In 140 general practice patients, patient-centred behaviour, operationalized by asking for opinion, for suggestion, and for expression of feelings, was found to be positively associated with the patient's reported compliance.
These findings seem to indicate that GP's patient-centred behaviour, i.e. exploring the meaning of the complaints for the patient, has a positive influence on patient's cognitions, satisfaction and compliance.

Apart from being beneficial for the patient, the *GP* is likely to benefit from patient-centred interviewing too, because it appears to contribute to an understanding of the patient's concerns and to deciding on the likely cause of

the patient's condition. In a study conducted by Peppiatt 416 patients presented their complaint-related attributions, i.e. their idea about the cause of their complaints[54]. Subsequently, the GP indicated how much he valued the attribution provided by the patient for matters of diagnosis, management, and understanding of both problem and patient. According to the GP, 35% of the mentioned attributions were considered valuable for an understanding of the patients' concerns over the condition or a general understanding of the patient, 20% was valuable for deciding on the likely cause, and 9% for making a diagnosis. This finding also seems to stress the importance of seeking patients' complaint-related cognitions. Such relevance was also demonstrated by Grol et al who audiotaped an average of fifteen consultations with 57 GPs[55]. They examined the relationship between GPs' reports of their intentions to conduct patient-centred consultations and their actual working style, assessed by independent raters, in terms of prescribing, information giving, openness towards patients' ideas and expectations, and feeling responsible for non-medical aspects of patients' complaints. Fewer intentions to patient-centred interactions appeared to be related to more often prescribing of symptomatic medication and to less openness towards patient's ideas and expectations and less information giving.

In conclusion, complaint-related cognitions and emotions which generally prompt patients to visit the doctor do indeed receive GPs' attention by means of patient-centred interviewing. Behavioural and environmental factors are, however, explored less systematically. In addition, patient-centred interviewing is primarily focused at allowing patients to express their thoughts and feelings, it only marginally incorporates an (inter)active discussion of patients' cognitions and emotions during medical consultations. Although lately Winefield et al have in fact defined patient-centredness more interactively[52], it basically only refers to doctor's behaviour.
As approximately one quarter of IBS-patients in general practice is referred to secondary care, patients' complaint-related cognitions and emotions may also have relevance beyond primary care consultations. In the next section it is therefore explored to what extent patients' and doctors' cognitions contribute to patients' referral to secondary care.

Do cognitions and emotions contribute to the referral of IBS-patients to secondary care?

As GPs do not appear to refer all patients with abdominal complaints, the question arises whether patients' and perhaps also GPs' cognitions contribute to patients' referral to secondary care. Southgate and Bass asked 100 general practice patients to sort 26 cards, on each of which was typed a statement relating to a worry or expectation that a patient might hold[42]. Twenty-five percent of the patients reported to expect a referral. Recently, in another study, 1070 general practice patients from twelve doctors were asked about, among other things, the presence or absence of expectations about GPs' management of their problems and their anxiety associated with the presenting problems[56]. Of these patients, thirteen percent expected to be referred to hospital. Patients reporting high levels of complaint-related anxiety were more likely to expect to be referred. In fact ten percent of the 1070 patients was referred to hospital, most often to out-patient clinics. Interestingly, GPs were more likely to refer those patients who expected to be referred. Eventually, 85% of patients' referral expectations were fulfilled. Moreover, Armstrong et al reported that in 39% of 526 referrals GPs reported that there was pressure from the patient to refer, and that most pressure for referral came from patients whose GP reported to refer exclusively for reassurance[57]. Comparable results were found by Grundmeijer and Van Weert[58]. They asked 29 GPs to indicate the most important reasons for referral in each of 350 different cases. Their results showed that besides somatic factors, in 75% of the cases other factors were mentioned as important referral motives, e.g. patient non-reassurance or a difficult doctor-patient relationship.

These results seem to indicate that, as most anxious patients expected and in fact received a referral, patients who do not feel reassured are likely to be referred. So, obviously, patient-related factors are indeed associated with GPs' referral decision.

Other factors that are possibly related to patient referral concern the general referral behaviour of the GP and his task-related cognitions which lie at the bottom of this behaviour[59]. In a study by Huygen et al among 1443 patients from 75 GPs it was shown that the working style of GPs, which includes among other things their referral behaviour, is related to patients' expectations regarding specialist care: the more GPs refer, the higher their patients' expectations of specialist care[60]. More specifically, we found that GPs' referral

behaviour was related to the extent in which referred IBS-patients attributed their complaints to somatic abnormalities: the higher GPs' referral rate, the more their patients attributed their abdominal complaints to a somatic abnormality[26]. Consequently, the complaint-related cognitions of referred IBS-patients are influenced by their GP.

In conclusion, both patients' and GPs' cognitions appear to contribute to patients' referral. Consequently, the complaint-related cognitions and emotions of non-referred patients in general practice are expected to differ from patients who have been referred to secondary care.

PHASE 2

Do medical specialists attend to complaint-related cognitions and emotions in IBS-patients?

In general practice an useful tool for eliciting patients' complaint-related cognitions and emotions is to perform patient-centred medical interviewing. In out-patient care comparable data are lacking. Nevertheless, in a large number of opinioned publications attention to the meaning of the complaints to the patient has also been advocated in secondary care[61-66]. This apparent discrepancy between a lack of research data on this subject and an emphasis on the role of complaint-related cognitions might be explained by the fact that health care providers and researchers may consider findings from general practice equally applicable to clinical settings. However, medical specialists are not trained in the same way as GPs, which is probably reflected in the type of care that is delivered. Moreover, the foregoing has demonstrated that cognitions of both patient and doctor contribute to patients' referral to secondary care. Consequently, the complaint-related cognitions and emotions of secondary care patients are likely to differ from those of primary care patients. This is explored further in the following section.

Differences in cognitions between primary and secondary care patients

Recently, a comparison between 109 IBS-patients in general practice and 86 IBS-patients in secondary care revealed that referred patients not only have more severe and frequent abdominal complaints, they also differed from general practice patients in their complaint-related cognitions: the out-patient population attributed their complaints more often to somatic abnormalities whereas the general practice patients, who had never been referred to secondary care,

attributed their complaints more often to stress and to their agitated way of life[67]. As referred patients appear to adhere to dysfunctional complaint-related cognitions and emotions, it may be more difficult to reassure these patients. Sharpe et al specifically explored factors contributing to the difficulties encountered in managing 60 referred patients[68]. 'Difficult' patients appeared to have higher levels of patient distress reported during the consulting period, less patient satisfaction with the received medical care, and repeated visits to the out-patient clinic. Moreover, doctors reported that they differed in opinion from patients about the nature of the illness: while patients attributed their complaints to a somatic cause, their specialists thought that psychological factors were predominant in these patients. In addition, Speckens and co-workers showed that compared to 107 general practice patients, 115 internal medicine out-patients had higher levels of hypochondriacal attitude and illness behaviour, i.e. they scored higher on questions such as 'Do you often worry about the possibility that you have got a serious illness?' and 'Is it hard for you to believe the doctor when he tells you there is nothing for you to worry about?'[69].
Differences between primary and secondary patients might also be revealed in patients' complaint-related behaviour. Corney and Stanton found that over 40% of a group of 42 referred IBS-patients showed moderate to marked avoidance of a number of activities when symptoms were present, including work, travelling, socialising, sexual intercourse, domestic and leasure activities, eating certain foods or eating with others[70]. Van Dulmen et al even found that 68% of 120 referred IBS-patients avoided activities as a result of their complaints[19].
Avoidance behaviour is generally considered to be ineffective and even counterproductive in reducing somatic complaints[71]. Yet, it appears to be maintained by dysfunctional cognitions, such as expectations of complaint increase, beliefs about one's capacity to control complaints, and memories of past aversive experience[71]. Avoidance behaviour, without medical necessity, may also be a sign of inadequate coping strategies. Drossman et al found that a group of 72 referred IBS-patients indeed had lower coping capabilities than a group of 82 IBS-nonpatients[31]. In addition, Johnsen et al demonstrated that problems with coping are associated with IBS-symptoms[72]. Moreover, as there may be patients for whom complaining is the only way to get attention or comfort, Sandler et al also advised doctors to explore whether IBS-patients have derived advantages from the 'sick role'[3].

Apparently, referred IBS-patients worry more about their complaints, have more

persistent somatic attributions and more dysfunctional complaint-related behaviours than general practice patients. These dysfunctional thoughts and feelings will probably *not* diminish as a result of specialists' diagnostic investigations and tests. Although there are indications that diagnostic tests diminish the overall consultation rates in IBS-patients[73], they do not alter patients' persistent somatic cognitions[25,74]. Recently, it was found that even half of referred patients adhered to somatic attributions regardless of negative findings from diagnostic tests and investigations[25,58]. Along the same line, Drossman suggested that it is important to establish an environment where the doctor communicates a genuine desire to help and tries to understand the patient[22]. A strong and positive doctor-patient interaction is likely to be required in such cases. Indeed, recent findings suggest that a positive doctor-patient interaction may be related to a positive longterm outcome of IBS. Owens et al followed up 112 consecutive IBS-patients for a median of 29 years[75]. They found that the quality of doctor-patient interaction was inversely related to the number of return visits for IBS-related symptoms. This study did, however, only indirectly measure the quality of doctor-patient interaction through notations in patient's medical record. Besides, the advice of strengthening the doctor-patient interaction is not very specific. In encountering patients with persistent dysfunctional cognitions and behaviours, specialists' interventions probably need to be more explicit in order to be successful. However, patients may not always present their ideas and fears in an explicit way.

Patients' presentations of complaint-related cognitions and emotions In a recent descriptive study in non-IBS patients, it was examined how patients presented their fear of cancer and how they expressed their need for information regarding the causes of complaints during gynaecological consultations[76,77]. Results indicated that the fifteen female patients in this study always covertly expressed their concerns regarding malignancy. Only rarely an expression by the patient was followed by an exploration of patient's fears by the doctor. When the doctor did respond to patient's concerns by further exploration, such a response appeared to result in more overt expressions of patient's concerns, followed by reassurances by the doctor. Causal attributions were also often addressed indirectly, and as a consequence, the implied request for information regarding the cause of the complaints was not attended to specifically. Similar results were found by Gill who investigated how fifteen patients at an out-patient clinic for general internal medicine told doctors what was causing their health

problems and how doctors responded to patients' causal explanations[78]. Of the 82 phrases expressing such an attribution, more than 90% were presented either implicitly, indirectly (by reference to third parties), speculative or mitigated. These implicit presentations did not appear to receive the doctor's attention and were often ignored. Even when doctors did elicit what patients felt and experienced, they appeared to avoid the issue of whether patients' attributions were correct or not. These findings suggest that patients' expression of complaint-related cognitions and emotions does not necessarily mean that doctors will recognize their presentations.

Doctors' recognition of patients' cognitions do appear to have relevance for patient health outcome. Recently, we examined doctors' ability of perceiving complaint-related cognitions and emotions in IBS-patients, together with the influence of doctors' correct perceptions on patients' cognitions, their satisfaction with the out-patient consultations, complaint improvement at six months, and medical consumption[19,25,26,79]. The basic assumption in our study was that reassurance by a doctor in order to be successful must take into account the meaning of the complaint for the patient. So, doctors had to recognize patients' complaint-related cognitions and emotions to be able to assist patients in correcting dysfunctional beliefs and fears by providing clear and well-founded information. Our results showed that doctors perceived the somatic factors in their patients more often correctly than patients' complaint-related cognitions and emotions[19]. When during the medical consultations doctors perceived patients' cognitions correctly, dysfunctional somatic attributions were found to decrease and functional psychological attributions were found to increase[25]. In addition, positive changes in patients' cognitions appeared to be related to a better outcome in terms of improvement of the complaints six months later and to a reduction in the use of medical health services in primary care[26,79].

Before going more deeply into the practical implications of the above mentioned findings, the factors which identify the subgroup of IBS-patients eligible for referral to psychological treatment are considered.

PHASE 3

Which factors contribute to the referral of IBS-patients to psychological treatment?

Camilleri and Prather reported that as a fairly large proportion of IBS-patients

continues to experience symptoms despite doctors' reassurance, sometimes more elaborate psychological treatment is required for these patients[80]. Drossman and Thompson estimated that five percent of IBS-patients referred to secondary care are in need of extensive psychological treatment[24]. According to Creed even fifteen percent of the IBS-patients should be considered for psychological treatment[27]. Studies evaluating psychotherapy for IBS-patients showed that the patients eligible for psychological treatment are those with refractory complaints, i.e. patients with complaints lasting for more than one year[81] and not responding to conventional treatment[82-85], or reassurance[86-88]. Apparently, a strong adherence to unhelpful cognitions prevents patients from feeling reassured by the visits to the specialist. Consequently, treating IBS-patients psychologically requires special attention to patients' complaint-related cognitions and emotions. In fact, cognitive therapy has shown to be effective in the treatment of IBS-patients[88-90]. In these psychotherapeutic treatments, attention is primarily focused at identifying and modifying distorted and maladaptive complaint-related cognitions and behaviours and the subsequent acquisition of 'new', more adaptive and helpful cognitions and coping strategies.

Obviously, refractory IBS-patients will benefit from a referral to psychological treatment. However, the majority of IBS-patients will still need to be managed more effectively in secondary care: figure 1 shows that as 33% of referred IBS-patients feel reassured after having visited the specialist and another 15% is referred for psychological treatment, approximately 50% of secondary care patients either feel not reassured by specialist's conventional treatment or are not eligible for psychotherapeutic treatment. As, compared to primary care patients, secondary care patients appear to be less inclined to alter their somatic attributions even when somatic abnormalities have been ruled out by the negative findings of diagnostic tests and investigations, the question arises how medical specialists should actually handle these patients adequately. Previous findings on this subject have not been very explicit. The next section will sort the aspects required to facilitate specialist's intervention.

TOWARDS EFFECTIVE REASSURANCE

The foregoing has comprehensively demonstrated the role of complaint-related cognitions and emotions of IBS-patients in every phase of health care. Moreover, the significance of complaint-related behaviour and environmental factors has been shown as well.

This concluding section will sort previous findings with the aim of listing the implications they have for medical practice in general and for effective reassurance of IBS-patients in particular.

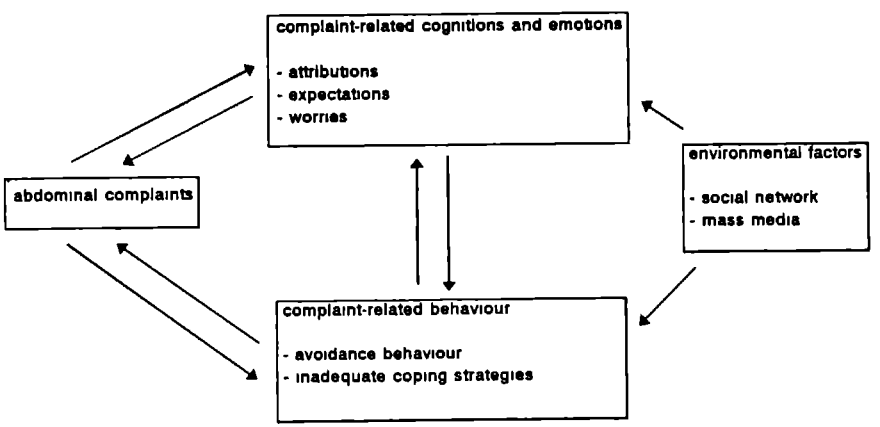
1. *Patient-centred attitude*

Undoubtedly, complaint-related cognitions, emotions and behaviours as well as environmental factors need to be attended to during medical consultations. For this purpose, doctors need to acquire a patient-centred attitude, i.e. they must be convinced of the importance of allowing patients to express all their reasons for attending, including symptoms, expectations, thoughts and feelings. This means that doctors must be willing to listen to patients, to explore patients' ideas by encouraging and reflecting, and to use patients' ideas for an adequate management of the complaints. Although a patient-centred attitude is considered to be important, it is not sufficient, as it does not explicitly refer to the content of doctor's attention, i.e. different complaint-related factors.

2. *Doctor's active exploration of patient's complaint-related cognitions*

Patient-centred interviewing is considered to be the basis for a thorough, individually tailored complaint analysis, i.e. an active exploration of the different interrelated dimensions of patient's complaint[91]: the cognitive, emotional, behavioural and environmental dimensions (Figure 2). The significance of the different complaint-related dimensions has, to a higher or lesser degree, been shown in every phase of health care.

Figure 2 Complaint-analysis



In patient's health-care-seeking behaviour (Phase 0), the most prominent factors appeared to be complaint-related attributions, expectations and worries. Besides, patient's social network and the mass media also appeared to contribute to the decision to consult a doctor. Complaint-related behaviour did, however, not appear to be an important contributing factor.

The importance of attending to patient's complaint-related cognitions and emotions appeared to be acknowledged in general practice (Phase 1). GPs appeared to be less confident with attending to behavioural and environmental factors. Moreover, patient's and GP's cognitions appeared to have relevance for GP's referral decision. Yet, GP's and specialist's cognitions have not been the subject of much research up till now.

In secondary care (Phase 2), doctors were advised to explore patients' attributions, expectations and concerns as well as their avoidance behaviour and inadequate coping strategies. Practical guidelines were, however, not very explicit.

Finally, during psychological treatment (Phase 3), attention was directed at correcting dysfunctional cognitions and coping strategies. No explicit attention appeared to be given to environmental factors.

Complaint-related factors, especially somatic attributions, catastrophizing cognitions, fear of cancer, avoidance behaviour, and environmental factors, do appear to relate to the course of IBS-symptoms, i.e. these factors negatively influence the outcome of the complaints in terms of complaint improvement, patient satisfaction, and the use of medical health care services[16,79,92]. So, handling these factors during medical consultations will probably lead to an improvement of the complaints[6,31]. In general, environmental factors appeared to have received the least attention in doctor's consulting room.

3. *Effective reassurance*

The ultimate aim of the medical consultation in patients with IBS is to reassure these patients effectively[93]. This is likely to be reflected in a reduction of patients' dysfunctional complaint-related cognitions, emotions and behaviours, and consequently in an improvement of complaint outcome and a decrease in medical consumption[25,26,79]. Our research findings in referred IBS-patients have shown that strong somatic attributions, catastrophizing cognitions, and fear of cancer can change positively during a series of out-patient consultations[25]. Presumably, such changes can also be achieved in primary care IBS-patients as well as in patients with other complaints. In order to accomplish these positive changes, doctors need to handle dysfunctional cognitions and emotions

explicitly. Presumably, this can only be achieved by an active exploration and subsequent discussion of patient's and also doctor's thoughts and feelings during medical consultations. In the same interactive way, patient's complaint-related behaviours need to be handled as well. Both patient and doctor can be held responsible for this. On the one hand, patients should learn to present their beliefs and fears more explicitly. On the other hand, doctors should realize that patients' presentations are often implicit and indirect and learn to attend to patients' cognitions and emotions more specifically.

Yet, doctors may feel overwhelmed by such an arduous, non-somatic, anamnestic task and may wonder how they should handle dysfunctional complaint-related cognitions, emotions and behaviours. Therefore, doctors have to learn a patient-centred interactive approach. This may require a change in the medical curriculum, which until now is primarily focused at making somatic diagnoses. Recently, in our University Hospital, a Course in Interactive Consulting (CIC) has been developed and given to residents not only in internal medicine but also in other fields. This course is mainly based on the concept of the above-mentioned patient-centred and interactive complaint analysis and has relevance for functional and somatically explained complaints. The primarily somatically educated medical specialists may find it hard to acquire these 'new' interviewing strategies and may fear that it is very time-consuming. Even GPs reported that exploring and discussing avoidance behaviour and the influence of family and friends were new elements for them[48]. In addition, Stewart and others have argued that when a doctor has mastered a patient-centred attitude, consultations will no longer take more time[94]. Eventually, patients will feel more effectively reassured when, at an early stage, all their complaint-related cognitions, emotions, and behaviours, and environmental factors are more explicitly and specifically explored and discussed with the doctor.

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chapter 9

SUMMARY

Doctors are frequently confronted with patients with abdominal complaints. In the majority of such cases, no somatic explanation can be found. These complaints are known as functional abdominal complaints or broadly defined irritable bowel syndrome (IBS). For these, often refractory complaints, there is no effective medical treatment. Besides, the health-care-seeking behaviour of IBS-patients is not related to the severity of the complaints, but much more to psychological factors, such as complaint-related cognitions, emotions and behaviours, like attributing the complaints to somatic abnormalities and fear of cancer. These latter complaint dimensions do not only have relevance for IBS; patients with somatically explained abdominal complaints often report such cognitions and emotions as well. In addition, these non-somatic complaint dimensions are related to the course of the abdominal complaints. Complaints improve less the more patients worry about their complaint, the more they have catastrophizing thoughts about the complaints, and the more they attribute their complaints to somatic abnormalities.
The study described in this thesis addressed the role of these psychological factors in the contact between IBS-patients and their doctor at an out-patient clinic for internal medicine, and, furthermore, examined whether doctors can bring about behaviour modification and thereby complaint improvement in their patients (chapter 1).

Chapter 2 of this thesis explored whether doctors at an out-patient clinic for internal medicine are able to perceive the complaint-related cognitions and emotions in IBS-patients correctly or not. In addition, this chapter examined whether doctors over- or underestimated the presence of patients' cognitions. Besides, it was examined whether doctors' correct perceptions were related to characteristics of the patient (sex, age, education), the doctor (sex), the complaint (duration), or the consultation (sex-symmetry or -asymmetry). For this purpose, 120 patients with irritable bowel syndrome completed questionnaires about their complaints and complaint-related cognitions and emotions before the first out-patient consultation and after each return consultation. After each consultation, doctors completed a similar questionnaire in the way that they thought the patients had completed it, thereby indicating their perception of the presence of complaints and complaint-related cognitions in their patients. The comparison between patients' and doctors' answers showed that, in general, doctors correctly perceived details of the abdominal complaints. Yet, patients' attributions, expectations, pain cognitions and anxiety were perceived less

correctly. Moreover, doctors underestimated the presence of patients' expectations with regard to the help the doctor could offer and they overestimated the presence of attributions, catastrophizing and self-efficacy cognitions. The frequently occurring and prognostically unfavourable somatic attributions were perceived more correctly by female than by male doctors.

Chapter 3 examined whether the complaint-related cognitions and emotions of IBS-patients changed during a series of consecutive out-patient consultations. Furthermore, it was examined whether changes in complaint-related cognitions were related to the correctness of doctors' perceptions of patients' cognitions. One hundred and ten of the 120 referred IBS-patients completed questionnaires after each return visit to the out-patient clinic. Their answers showed that their state anxiety, fear of cancer, somatic attributions and catastrophizing cognitions diminished during the consulting period. When doctors perceived the presence of somatic attributions in their patients correctly, these attributions diminished; when doctors perceived the presence of psychological attributions in their patients correctly, these attributions increased. Presumably, the attention by the doctor stimulates the patient to reconsider the meaning of the complaints. An additional finding was that patients' catastrophizing cognitions reduced more and patients, furthermore, were more satisfied with the visits to the out-patient clinic when they had visited the same doctor throughout the consultations. The number of diagnostic tests and investigations was not related to changes in cognitions and anxiety during the consulting period. It was argued that when a doctor would consider patients' cognitions and emotions more specifically and explicitly, the patient could possibly benefit more.

Chapter 4 described a follow-up study. All 110 patients who had completed a questionnaire after each out-patient consultation, received a similar questionnaire at follow-up, i.e. six months after their first out-patient visit. One hundred and five (95%) of these patients returned a completed follow-up questionnaire. Their answers revealed that in 43% of the patients, the complaints had improved. Between the last out-patient visit and the follow-up, patients attributed their complaints more to psychological factors. No other cognitions changed during that period. Besides, scores on cognitions at the end of the consulting period were related to the course of the complaints; the higher patients' level of state anxiety, fear of cancer, catastrophizing cognitions and somatic attributions at the end of the consulting period, the less their complaints

were improved at follow-up. The complaints improved more as patients were more satisfied with the out-patient visits and also in patients who had visited the same doctor throughout the consultations. So, the positive changes in complaint-related cognitions initiated during the consulting period at the out-patient clinic persisted during the follow-up period. This could indicate that medical consultations can bring about long-lasting positive changes in dysfunctional complaint-related cognitions.

Chapter 5 compared data from our out-patient clinic population with data from 109 general practice patients with IBS. Findings revealed that, compared with general practice patients, out-patients attributed their complaints more to somatic abnormalities and less to psychological explanations. Moreover, it was found that female patients, who had been referred to the out-patient clinic, reported more severe complaints than female general practice patients. Comparable differences were not found in male patients. As the out-patient clinic population had relatively more male patients than the general practice population, this could indicate that general practitioners more readily refer male patients with IBS-complaints than female patient with similar complaints.

In chapter 6 it was examined whether patients' persistent dysfunctional cognitions at the end of the out-patient consulting period were related to their subsequent health-care-seeking behaviour in primary care. Besides, it was examined whether the general referral behaviour of the general practitioners had influenced the cognitions and anxiety of the IBS-patients they had referred. In order to examine patients' health-care-seeking behaviour, general practitioners were asked at follow-up how often the patients had visited them for abdominal or other complaints in the preceding three months and whether they had prescibed any medication for the abdominal complaints during that period. Besides, at two points, namely before the first out-patient visit and at follow-up, patients were asked how often they had visited their general practitioner for abdominal or other complaints in the preceding three months and whether they used any medication for their complaints or not. During the out-patient consulting period, the number of visits to the general practitioner for abdominal complaints was decreased. Yet, the number of visits for other complaints was increased. Besides, it was found that referred IBS-patients made more subsequent use of medical health services in primary care when they adhered to somatic attributions at the end of the out-patient consulting period. Moreover,

patients from general practitioners who generally referred many patients to internal medicine, tended to attribute their abdominal complaints more to a somatic abnormality. Again, these results stress the importance of attending to patients' cognitions and emotions during medical consultations.

At the end of the out-patient consulting period, a number of patients still adhered to dysfunctional complaint-related cognitions, such as attributing complaints to somatic abnormalities even after such abnormalities had been ruled out through extensive physical examination. For these patients, referral to a behaviour therapist was thought to be indicated. Chapter 7 compared the effectiveness of a cognitive-behavioural group therapy for patients with refractory IBS with a 'waiting-list control' condition in alleviating abdominal complaints. Furthermore, the long-term effectiveness of cognitive-behavioural group therapy was evaluated. The results showed that the daily intensity as well as the daily duration of the abdominal complaints of the 25 patients who underwent treatment improved significantly more than the complaints of the 20 patients awaiting treatment. Moreover, the number of adequate coping strategies increased more and the patients' avoidance behaviour decreased more as a result of treatment. These positive changes persisted during the follow-up period. Apparently, for patients with severe and chronic IBS, cognitive-behavioural group therapy is effective.

Finally, chapter 8 systematically explored the role of complaint-related cognitions, emotions and behaviours, as well as environmental factors in patients with IBS in every phase of the health care process, i.e. in patient's health-care-seeking behaviour, in primary and secondary care consultations and in psychological treatment by means of a literature survey. The demonstrated importance of complaint-related cognitions and emotions implies that attention by the doctor to these factors is necessary. It was argued that doctors, by means of a patient-centred attitude, should systematically and interactively explore and handle the different dimensions of patients' complaints. Such a thorough individually tailored complaint-analysis would be a prerequisite for patient's effective reassurance, reflected in positive changes in dysfunctional cognitions, emotions and behaviours.

chapter 10

SAMENVATTING

Artsen worden in hun spreekkamer veelvuldig geconfronteerd met patiënten met buikklachten. In de meeste gevallen kan voor dergelijke klachten geen afdoende lichamelijke verklaring gevonden worden. Men spreekt dan van functionele buikklachten die eveneens, volgens de ruime definitie van Thompson, Irritable Bowel Syndrome (IBS) worden genoemd. Voor deze klachten, die doorgaans erg hardnekkig zijn, bestaat geen effectieve medische behandeling. Bovendien wordt het hulpzoekgedrag van IBS-patiënten niet zozeer bepaald door de ernst van de klachten, maar veel meer door psychologische factoren, zoals klachtgerelateerde cognities, emoties en gedragingen waaronder het toeschrijven van de klachten aan lichamelijke stoornissen en angst voor kanker. Deze klacht-aspecten zijn niet uniek voor IBS; ook patiënten met wèl lichamelijk te verklaren buikklachten rapporteren veelvuldig dergelijke cognities en emoties. Bovendien blijken niet-lichamelijke aspecten van de klacht gerelateerd te zijn aan het beloop van de buikklachten; de klachten verbeteren minder naarmate patiënten zich meer zorgen maken over hun klachten, meer catastroferende gedachten hebben over de klachten en hun klachten meer toeschrijven aan lichamelijke aandoeningen.
Het onderzoek dat in dit proefschrift beschreven is, hield zich bezig met de rol die deze psychologische factoren spelen in het contact tussen patiënten met IBS en hun arts op een polikliniek interne geneeskunde, en bovenal met de vraag of artsen gedragsveranderingen en daarmee klachtverbetering bij de patiënten kunnen bewerkstelligen (Hoofdstuk 1).

Hoofdstuk 2 van dit proefschrift richtte zich op de vraag of artsen op een polikliniek interne geneeskunde in staat zijn om de klachtgerelateerde cognities en emoties van patiënten met IBS correct waar te nemen. Bovendien werd in dit hoofdstuk onderzocht of artsen ten onrechte vaker (overschattingen) of minder vaak (onderschattingen) aangaven dat bij de patiënt bepaalde cognities aanwezig zijn. Daarnaast werd onderzocht of het correct inschatten van de cognities door de arts samenhing met bepaalde kenmerken van de patiënt (geslacht, leeftijd, opleiding), van de arts (geslacht), van de klacht (klachtenduur) of van het consult (sexe-symmetrie- of asymmetrie). Hiertoe vulden 120 IBS-patiënten, voorafgaand aan het eerste bezoek aan de arts op de polikliniek en na afloop van elk volgend bezoek, vragenlijsten in omtrent hun klachten en klachtgerelateerde cognities en emoties. Na elk consult vulde de arts een soortgelijke vragenlijst in op de manier waarop hij dacht dat de patiënt de vragenlijst had ingevuld. Op deze wijze kon worden nagegaan hoe de arts de aanwezigheid van klachten en klachtgerelateerde cognities bij de patiënt

inschatte. Vergelijking van de antwoorden van de patiënt en de arts liet zien dat de arts over het algemeen de buikklachten en details van deze klachten correct waarnam. Attributies, verwachtingen, pijncognities en angst werden door de arts daarentegen minder correct ingeschat. De arts onderschatte de aanwezigheid van verwachtingen van de patiënt ten aanzien van de hulp die de arts zou kunnen bieden en overschatte de aanwezigheid van attributies, catastroferende en self-efficacy cognities. De veelvoorkomende en prognostisch ongunstige somatische attributies werden door vrouwelijke artsen beter waargenomen dan door hun mannelijke collega's.

In hoofdstuk 3 ging het om de vraag of de klachtgerelateerde cognities en emoties van IBS-patiënten zouden veranderen gedurende een serie opeenvolgende poliklinische consulten. Bovendien werd onderzocht of er meer veranderingen in klachtgerelateerde cognities optraden wanneer de arts de aanwezigheid van die cognities bij de patiënt correct had ingeschat. Honderdtien van de 120 verwezen IBS-patiënten vulden vragenlijsten in na elk volgend bezoek aan de polikliniek. Vergelijking van de antwoorden op deze vragenlijsten liet zien dat de toestandsangst, angst voor kanker, somatische attributies en catastroferende cognities van de patiënt gedurende de consultperiode significant afnamen. Bovendien werd gevonden dat als de arts de aanwezigheid van somatische attributies correct had ingeschat, deze attributies meer afnamen. Als de arts de aanwezigheid van psychologische attributies had opgemerkt, namen deze attributies meer toe. Als verklaring voor deze samenhang werd verondersteld dat de aandacht van de arts de patiënt stimuleert om anders over de klachten te gaan denken. Een bijkomende bevinding was dat patiënten minder catastroferende cognities kregen en zich bovendien meer tevreden voelden over de bezoeken aan de polikliniek wanneer zij op de polikliniek steeds dezelfde arts hadden gezien. Het aantal diagnostische tests en onderzoeken was niet gerelateerd aan veranderingen in cognities en angst gedurende de consultperiode. Verondersteld werd dat wanneer een arts meer specifiek en expliciet aandacht zou besteden aan de cognities en emoties van de patiënt, de patiënt daar waarschijnlijk nog meer van zou kunnen profiteren.

In hoofdstuk 4 werd een follow-up onderzoek beschreven. Alle 110 patiënten die na elk polikliniekbezoek een vragenlijst hadden ingevuld kregen zes maanden na het eerste polikliniekbezoek (follow-up) een soortgelijke vragenlijst toegestuurd. Honderdvijf (95%) van deze patiënten stuurden deze follow-up

vragenlijst ingevuld terug. Uit de antwoorden op de vragenlijst bleek dat bij 43% van de patiënten de klachten verbeterd waren. Tussen het laatste polikliniekbezoek en de follow-up meting was de patiënt zijn klachten meer aan psychologische factoren gaan toeschrijven. Andere cognities veranderden in die periode niet. Bovendien hingen de scores op bepaalde cognities op het eind van de consultperiode samen met het beloop van de klachten: hoe meer toestandsangst, angst voor kanker, catastroferende gedachten en somatische attributies de patiënt op dat moment had, hoe minder diens klachten bij follow-up verbeterd waren. De klachten waren meer verbeterd bij patiënten die tevreden waren over de bezoeken aan de polikliniek en eveneens bij patiënten die op de polikliniek steeds dezelfde arts hadden bezocht. De positieve veranderingen in de klachtgerelateerde cognities die gedurende de consultperiode op de polikliniek begonnen waren bleven gedurende de follow-up periode gehandhaafd. Hieruit kan geconcludeerd worden dat medische consulten langdurende positieve veranderingen in dysfunctionele klachtgerelateerde cognities kunnen bewerkstelligen.

In hoofdstuk 5 werden gegevens van de poliklinische populatie vergeleken met gegevens van 109 huisartspatiënten met IBS. Resultaten lieten zien dat, vergeleken met patiënten uit de huisartspraktijk, poliklinische patiënten hun klachten vaker toeschreven aan somatische afwijkingen en minder vaak aan psychologische verklaringen. Er werd bovendien gevonden dat vrouwelijke patiënten die verwezen waren naar de polikliniek ernstiger klachten ervoeren dan vrouwelijke patiënten in de huisartspraktijk. Bij mannelijke patiënten werd een dergelijk verschil niet gevonden. Omdat bovendien de polikliniek-populatie verhoudingsgewijs meer mannen bevatte dan de huisartspraktijk-populatie, zou dit er op kunnen wijzen dat huisartsen mannelijke patiënten met IBS-klachten eerder verwijzen dan vrouwelijke patiënten met dezelfde klachten.

In hoofdstuk 6 werd onderzocht of de persisterende dysfunctionele cognities van de patiënt op het einde van de consultperiode gevolgen hadden voor het hulpzoekgedrag van de patiënt in de eerste lijn, zes maanden na afloop van de consultperiode op de polikliniek. Bovendien werd onderzocht of het verwijsgedrag van de huisartsen de cognities en angst van de door hen verwezen IBS-patiënten beïnvloed hadden. Om het hulpzoekgedrag van patiënten te onderzoeken werd bij follow-up aan de huisarts gevraagd hoe vaak hij in de voorafgaande drie maanden door de eerder door hem verwezen patiënt

was bezocht voor buik- of andere klachten en of hij de patiënt medicijnen voor de buikklachten had voorgeschreven in die periode. Bovendien werd op twee momenten, namelijk vóór het eerste polikliniekbezoek en bij follow-up, aan patiënten gevraagd hoe vaak zij naar eigen zeggen hun huisarts voor buik- of andere klachten hadden bezocht in de drie maanden ervoor en of zij in diezelfde periode wel of geen medicijnen voor hun buikklachten hadden gebruikt. Gedurende de consultperiode op de polikliniek was het aantal bezoeken aan de huisarts voor buikklachten afgenomen, het aantal bezoeken voor andere klachten was daarentegen toegenomen. Er werd bovendien gevonden dat verwezen patiënten meer gebruik maakten van gezondheidszorgvoorzieningen als zij op het eind van de consultperiode op de polikliniek nog steeds dachten dat ze een lichamelijke afwijking hadden. Bovendien waren patiënten van huisartsen die in het algemeen veel patiënten naar interne geneeskunde verwijzen meer geneigd hun buikklachten toe te schrijven aan een somatische afwijking. Deze resultaten wijzen wederom op het belang van het betrekken van de cognities en emoties van de patiënt in het medisch consult.

Na afloop van de consultperiode op de polikliniek had een aantal patiënten nog steeds dysfunctionele cognities, zoals het toeschrijven van de buikklachten aan somatische afwijkingen, ook al waren dergelijke afwijkingen door middel van uitgebreid lichamelijk onderzoek uitgesloten. Voor deze patiënten was verwijzing naar een gedragstherapeut geïndiceerd. In hoofdstuk 7 werd de effectiviteit van een cognitieve gedragstherapie op groepsbasis voor patiënten met hardnekkige IBS-klachten vergeleken met een 'wachtlijstcontrole-conditie' in termen van verbetering van de buikklachten. Bovendien werd geëvalueerd wat het resultaat van deze vorm van groepsbehandeling op de lange termijn was. De resultaten lieten zien dat zowel de dagelijkse intensiteit als de dagelijkse duur van de buikklachten van de 25 patiënten die de behandeling hadden ondergaan meer waren afgenomen dan de klachten van de 20 patiënten uit de controlegroep. Ook was het aantal adequate copingstrategieën als gevolg van de behandeling toegenomen en het vermijdingsgedrag van de patiënten afgenomen. Deze positieve veranderingen handhaafden zich gedurende de follow-up periode. Voor patiënten met ernstige en chronische IBS-klachten lijkt cognitieve gedragstherapie op groepsbasis effectief te zijn.

Tenslotte werd in hoofdstuk 8 de rol van klachtgerelateerde cognities, emoties en gedragingen alsmede die van omgevingsfactoren bij IBS-patiënten in elke fase

van de gezondheidszorg, d.w.z. bij hulpzoekgedrag, gedurende medische consulten in de 1° en de 2° lijn en gedurende psychologische behandeling, systematisch geëxploreerd door middel van literatuuronderzoek. Er werd beargumenteerd dat het belang van klachtgerelateerde cognities en emoties aandacht van de arts voor deze factoren noodzakelijk maakt. Bovendien werd beargumenteerd dat artsen m.b.v. een patiënt-gecentreerde attitude systematisch op een interactieve wijze de verschillende dimensies van de klachten van de patiënt zouden moeten exploreren. Zo'n diepgaande individuele klacht-analyse zou een voorwaarde zijn voor het effectief geruststellen van de patiënt zich uitend in positieve veranderingen in dysfunctionele cognities, emoties en gedragingen.

Sandra van Dulmen werd geboren op 6 mei 1961 in 's-Hertogenbosch. Tijdens haar lagere schooljaren had zij regelmatig last van buikklachten waarvoor haar huisarts geen afdoende verklaring kon vinden. In 1981 behaalde zij, desondanks, het diploma Atheneum-B aan het van der Puttlyceum te Eindhoven. In datzelfde jaar ging zij psychologie studeren aan de Katholieke Universiteit Nijmegen. In september 1987 studeerde zij *cum laude* af binnen de studierichting klinische psychologie. Haar afstudeerscriptie had betrekking op 'sexeverschillen in communicatie, toegespitst op het medisch consult'.

Begin 1988 werkte zij enkele maanden op de vakgroep klinische psychologie aan de ontwikkeling van een computer-ondersteund onderwijsprogramma. In april van dat jaar ging zij op de vakgroep huisartsgeneeskunde werken aan een onderwijsprogramma over 'de begeleiding van de patiënt met kanker' bestemd voor de beroepsopleiding tot huisarts. Na afloop van dit project werd haar oudste dochter Lies geboren. In 1991 begon zij aan het onderzoek naar de rol van cognities bij patiënten met functionele buikklachten. In datzelfde jaar werd haar jongste dochter Lot geboren. Het onderzoek resulteerde uiteindelijk in het thans voor u liggende proefschrift. Momenteel is zij werkzaam bij het NIVEL, Nederlands instituut voor onderzoek van de gezondheidszorg, in Utrecht, alwaar zij onderzoek doet naar de communicatie tussen specialisten en patiënten.