

# Patients with irritable bowel syndrome: health status and use of health care services

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## SUMMARY

**Background.** The reason for consulting a physician is more related to illness behaviour than to the severity of complaints. Yet, little is known about the course of complaints, the health care seeking behaviour, and psychosocial factors influencing these items in patients with irritable bowel syndrome (IBS) attending the general practitioner (GP).

**Aim.** To study health status, lifestyle, and use of health care services of patients with IBS in order to indicate problem areas accessible for intervention strategies.

**Method.** Structured interviews of 53 patients with IBS aged 15 years and older compared with a general population of 12 975 in the same age range, all drawn from the Dutch National survey of Morbidity and Intervention in General Practice.

**Results.** Patients with IBS revealed a lower grade of education ( $P < 0.001$ ), poorer health ( $P < 0.001$ ), a higher mean complaint score (8.3 versus 4.0,  $P < 0.001$ ), a higher score on the General Health Questionnaire ( $P < 0.001$ ), a higher score on the biographic problem list (BIOPRO, 2.3 versus 1.4,  $P < 0.001$ ), and more absence from work (32% versus 18% in two months,  $P < 0.01$ ). Patients with IBS consulted the family physician (1.6 versus 0.8 in three months,  $P < 0.001$ ), the physical therapist (30% versus 15% in one year,  $P < 0.001$ ), and the alternative therapist (32% versus 15% in five years,  $P < 0.001$ ) more often than those without.

**Conclusions.** The study shows an excess of comorbidity, psychosocial problems, use of health care services, and absence owing to disease in patients with IBS. Special guidelines and training of GPs to apply a more integral approach may reduce the cost of health care and may lead to a more favourable course in patients with IBS.

**Keywords:** irritable bowel syndrome; psychosocial; health status; lifestyle; use of health care services; absence from work.

## Introduction

ACCORDING to the definition developed by an international working panel, 'irritable bowel syndrome' (IBS) is a 'functional gastrointestinal disorder attributed to the intestines, and associated symptoms of pain and disturbed defecation and/or symptoms of bloatedness and distension'.<sup>1,2</sup> The incidence of IBS, as reported in general practice, is 16.8 per 1000 per year, and the estimated prevalence in the general population is 14% to 25%.<sup>3-7</sup> On average, a Dutch general practitioner (GP) sees one

or two patients with IBS per week.<sup>1</sup> It is, therefore, a common problem in the population presented frequently in general practice, although only a minority of patients decides to consult their GP for these complaints.<sup>5,6</sup>

Only 3% to 15% of patients in general practice were referred to a specialist depending on the time of follow-up.<sup>3,8</sup> A study in IBS has shown that concern about the possible seriousness of symptoms is a major determinant of consultation behaviour.<sup>9</sup> The reason for consulting a physician is often more related to illness behaviour than to the severity of the complaints.<sup>10</sup> Yet, little is known about the course of the complaints, the health care seeking behaviour, and psychosocial factors influencing these items in patients attending the GP. The present study aims at assessing these aspects in patients with IBS in order to indicate problem areas accessible for possible intervention strategies.

The study aimed to answer the following questions: To what extent is the experienced health, health behaviour, and use of health care services of patients consulting the GP with IBS different from the general population?

## Method

### Design

Data from the Dutch National Survey of Morbidity and Intervention in General Practice were used for this study. This survey was performed in 1987/1988 with a random sample of 161 Dutch GPs serving a practice population of about 335 000 patients.<sup>11-13</sup> Multi-stage, random sampling included stratification on distance to the hospital, region, and degree of urbanization. Over 99.9% of the Dutch population are registered at a general practice. Part of the National Survey was an extensive health interview during the same period (1987/1988) with a random sample of approximately 100 patients per practice registered in the participating practices. The interview was designed for use in a broad field and did not contain a direct question on IBS. Patients with IBS were identified by means of a contact registration in the participating general practices with the help of the International Classification of Primary Care (ICPC-code D93).<sup>14,15</sup> Participating GPs received special training in ICPC-coding before the study started. Because a link could be made between contact registration and health interview, the patients with IBS who were interviewed could be identified. A total number of 1593 patients with IBS were identified in the participating practices. Interviews took place with 56 out of 78 patients with IBS (response rate of 71.8%) who were included in the random selection of the national survey.

### Measurement and measures

A number of questions in the patients' questionnaire did concern health indicators. The following indicators of experienced health were selected:

- A question about experienced health, categorized as good, moderate, or poor.
- The score on the General Health Questionnaire (GHQ), a psychiatric screening questionnaire (30-item version), for tracing persons with possible psychiatric problems.<sup>16</sup> A score of five and higher, but especially of 10 and higher, is

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considered as being at risk for psychiatric problems.<sup>16</sup> Both critical cut-off points were used.

- The number of complaints during the two weeks preceding the interview. The average complaint score was analysed from a total list of 42 possible complaints. Gastrointestinal and psychological complaints included in this list were analysed and presented separately.
- The score on the biographic problem list (BIOPRO); a well validated list of 22 questions measuring social problems.<sup>17</sup> Differences in mean score and specific questions from the BIOPRO anticipated to be possibly related to IBS were analysed separately.

The following health behaviour indicators were analysed: use of alcohol, smoking, active sports engagement, and sickness absence. Sickness absence was reported over the two months prior to the interview. Sickness absence included absence from work or school, or inability to perform homework owing to health reasons.

As indicators for use of health care, the following parameters were selected: number of consultations with the GP and the practice assistant (during three months), consultation with the physical therapist (during one year), with the medical specialist (during two years), and with the alternative therapist (during five years). The consultation frequency of the GP was determined by the interview items (two months) and by contact registration in general practice (three months). Consultation with the GP and the practice assistant were analysed separately with data from the contact registration in general practice.

### Analysis

The data were analysed with SPSS.<sup>18</sup> Data of IBS patients were compared to data from the general population (all 17 047 responders on the interview survey). When comparing differences between patients with IBS and the general population, data were adjusted for age differences. The age distribution of responders in the Population Survey was used as a standard for adjustment in three groups (15 to 24 years, 25 to 64 years, and 65 years and over). Analyses were stratified by sex and, if relevant, presented for both sexes separately. The Mantel-Haenszel Summary chi-squared test was used as a statistical test for linear associations after age adjustment; *t*-tests were used for comparing mean complaint score, BIOPRO, consultation frequency of the family physician, and of the family physician's assistant between patients with IBS and the general population.<sup>19</sup>

## Results

### Patient characteristics

The total interview population included 17 047 responders (3.9% of all registered patients). The response percentage for the total random sample was 76.7%, and for the group aged 15 years and older was 80.2%.<sup>20</sup> The total number of responders of 15 years and older was 10 787. A total number of 1593 patients with IBS were identified in the participating practices. Interviews took place with 56 out of 78 patients with IBS (response rate of 71.8%) who were included in the random selection of the national survey. The 22 non-responders did not differ in age and sex distribution from the 56 responders. Questionnaires of 53 patients with IBS aged 15 years and older were analysed. Three responders were aged below 15 years of age. These were excluded from further analyses. Thirty-seven (70%) patients with IBS were female compared with 51% of all responders (Table 1,  $P<0.01$ ). When participants aged 15 years of age and older were analysed, IBS appeared to be diagnosed least frequently (13%) in

the group aged 15 to 24 years.

The majority of patients with IBS have only completed elementary school and some years of lower grade professional education. The average education level is lower compared with the general population (Table 1,  $P<0.001$ ).

### Experienced health

Although the majority (57%) of interviewed patients with IBS experience good health, the group with moderate (38%) or poor (5%) health is considerably larger compared with the general population (Table 1,  $P<0.001$ ).

Patients with IBS had a higher score on the GHQ ( $P<0.001$ ): excess in the moderate risk category of 5 to 9 (18% versus 7%) and in the high risk category of  $\geq 10$  (18% versus 5%, Table 1).

Out of a list of 42 possible complaints, the average score in patients with IBS was 8.3 after age/sex adjustment compared with 4.0 in the general population ( $P<0.001$ , *t*-test). Besides abdominal complaints like abdominal pain, constipation, stomachache, nausea, heartburn, and diarrhoea, patients with IBS presented considerable comorbidity in the interviews; tiredness (57%), headache (55%), backache (43%), anxiety (43%), sleep disturbance (38%), excitability (36%), apathy (34%), dizziness (32%), excessive transpiration (25%), aggressive feelings (21%), and eating disorders (13%) scored especially high on the list of complaints in comparison with the general population (Table 2).

The average score on the BIOPRO was 2.3 in patients with IBS versus 1.4 in the general population ( $P<0.01$ , Table 3). When analysing the questions in the BIOPRO separately, patients with IBS appeared to have the highest score on the question 'Do you have concern about the future?' (25%), followed by problems with self-confidence (21%) and with personal development (19%). Patients with IBS also had more problems with contacts in general (15%), with partners (12%), their parents (12%), their children (14%), with others (15%), and more loneliness problems (12%). They also had more alcohol and drug problems (12%,  $P<0.001$ ) when compared with the general population (3%). When stratified by sex, men with IBS especially appeared to show more alcohol and drug problems compared with men in the general population (25% versus 3%,  $P<0.001$ ). When stratified by sex, no differences between subgroups were seen either.

### Health behaviour

Differences in alcohol consumption and cigarette smoking were not statistically significant. One-third of patients with IBS was engaged in active sports, comparable with the general population (Table 1). When stratified by sex, no differences by subgroup were seen either. Patients with IBS did report more absence owing to illness in the two months prior to the interview (32% versus 18%,  $P<0.01$ , Table 1).

### Use of health care services

The family physician was consulted by 83% of patients with IBS in the two months preceding the interview, and the mean number of visits during three months of contact registration in general practice was considerably higher when compared with the general population (3.8 versus 2.4,  $P<0.001$ , Table 1). Differences in contacting the family physician's assistant were not statistically significant (1.1 versus 0.8). The physical therapist was visited twice as often by patients with IBS compared with the general population in the year prior to the survey (30% versus 15%,  $P<0.001$ ). A relatively large part (25%) of patients with IBS consulted a specialist in the two months prior to the survey. In five years, 32% of patients with IBS consulted an alternative therapist compared with 15% in the general population ( $P<0.001$ , Table 1).

**Table 1.** Results of questionnaire (adjusted for age and sex) with 95% confidence intervals (CI) of patients 15 years of age and older with irritable bowel syndrome (IBS) (n = 53) compared with the general population (n = 10 787).

	IBS patients (n = 53 <sup>a</sup> )		Population (n = 10 787)		P-value
	%	(95% CI)	%	(95% CI)	
Sex (female)	70		51		<0.01
Age					
	15 to 24 years	13	33		
	25 to 64 years	68	56		
	≥65 years	19	11		
Completed education					
	Lower level	71 (52–95)	56 (55–57)		<0.001
	Medium level	21 (11–35)	27 (26–28)		
	Higher level	8 (3–19)	17 (16–18)		
Experienced health					
	Good	57 (41–77)	84 (82–85)		<0.001
	Moderate	38 (25–55)	14 (13–15)		
	Poor	5 (2–15)	2 (2–3)		
GHQ score					
	0 to 4	64 (47–86)	88 (86–89)		<0.001
	5 to 9	18 (9–31)	7 (7–7)		
	≥10	18 (9–31)	5 (5–6)		
Health behaviour					
Alcohol consumption					
	None	30 (19–46)	25 (24–26)		
	Sporadic	23 (13–37)	22 (21–23)		
	Weekly	34 (22–50)	30 (29–31)		
	Daily	13 (6–25)	23 (22–24)		
Smoking					
Active Sports					
		30 (19–46)	41 (40–42)		
		36 (24–53)	37 (36–38)		
Absence owing to illness (2 months)		32 (20–48)	18 (17–19)		<0.01
Consult family physician (2 months)		83 (64–100)	38 (37–39)		<0.001
Consult family physician — mean (3 months)		3.8 (3.0–4.6)	2.4 (1.8–3.0)		<0.001
Consult family physician's assistant — mean		1.1 (0.6–1.6)	0.8 (0.7–0.8)		
Consult physical therapist (1 year)		30 (19–46)	15 (14–15)		<0.001
Consult specialist (2 months)		25 (15–39)	16 (15–17)		
Consult alternative therapist (5 years)		32 (20–48)	15 (14–16)		<0.001

Mantel–Haenszel Summary chi-squared test, t-test. <sup>a</sup>Adjusted for sex and age. Numbers without decimals refer to percentages; numbers with decimals refer to means.

**Table 2.** Most frequently reported complaints by questionnaire (adjusted for age and sex) with 95% confidence intervals (CI) of patients 15 years of age and older with irritable bowel syndrome (IBS) (n = 53) compared with the general population (n = 10 787).

Items	IBS patients (n = 53, adjusted for age and sex)		Population (n = 10 787)		P-value
	%	(95% CI)	%	(95% CI)	
Complaint score average	8.3	(6.6–10.0)	4.0	(3.9–4.0)	<0.001
Abdominal complaints					
Abdominal pain	43	(30–62)	7	(7–9)	<0.001
Constipation	42	(28–59)	7	(7–9)	<0.001
Stomachache	30	(19–46)	5	(5–6)	<0.001
Nausea	25	(15–39)	6	(6–7)	<0.001
Heartburn	22	(13–37)	7	(7–7)	<0.001
Diarrhoea	21	(12–35)	5	(4–5)	<0.001
Painful menstrual period	15	(8–27)	5	(5–6)	<0.01
Vomiting	8	(3–17)	3	(3–3)	
Other complaints					
Tiredness	57	(41–77)	31	(30–32)	<0.001
Headache	55	(39–74)	32	(31–33)	<0.001
Backache	43	(30–62)	19	(18–19)	<0.001
Anxiety	43	(30–62)	19	(19–20)	<0.001
Sleep disturbance	38	(25–55)	16	(16–17)	<0.001
Excitability	36	(24–53)	15	(15–16)	<0.001
Apathy	34	(22–50)	12	(11–12)	<0.001
Dizziness	32	(20–48)	11	(11–12)	<0.001
Excessive transpiration	25	(15–39)	11	(11–12)	<0.01
Aggressive feelings	21	(12–35)	7	(7–8)	<0.001
Anorexia/bulimia	13	(6–25)	2	(2–2)	<0.001

Mantel–Haenszel Summary chi-squared test, t-test. Numbers without decimals refer to percentages; numbers with decimals refer to means.

**Table 3.** Most frequently occurring social problems as measured by the biological problem list (BIOPRO) (adjusted for age and sex) with 95% confidence intervals (CI) of patients 15 years of age and older with irritable bowel syndrome (IBS) (n = 53) compared with the general population (n = 10 787).

Items	IBS patients (n = 53, adjusted for age and sex)		Population (n = 10 787)		P
	%	(95% CI)	%	(95% CI)	
BIOPRO average	2.3	(1.5–3.1)	1.4	(1.4–1.4)	<0.01
Concern about future	25	(15–39)	16	(16–17)	
Problems with self-confidence	21	(12–35)	12	(12–13)	
Problems with personal development	19	(10–32)	11	(11–12)	
Problems with contacts	15	(8–27)	7	(7–7)	<0.05
Problems with others	15	(8–27)	6	(6–6)	<0.01
Problems with children	14	(6–29)	4	(4–5)	<0.01
Loneliness problems	12	(5–24)	5	(5–6)	<0.05
Problems in relationships with parents	12	(5–26)	5	(5–6)	
Alcohol/drug problems	12	(5–23)	3	(3–4)	<0.001
Financial problems	12	(5–23)	8	(7–8)	
Problems with religion	11	(5–24)	7	(6–7)	
Problems in relationship with partner	11	(5–24)	4	(3–4)	<0.05
Problems with ageing	11	(5–22)	5	(5–6)	

Mantel–Haenszel Summary chi-squared test, t-test. Numbers without decimals refer to percentages; numbers with decimals refer to means.

## Discussion

Structured interviews in 53 patients aged 15 years and older with IBS revealed a lower grade of education, poorer experienced health, a higher mean complaint score, a higher score on General Health Questionnaire, an excess of social problems, more tiredness, dizziness, excitedness, and more use of health care services (including alternative medicine) when compared with the general population. Our finding that patients with IBS show a high rate of non-abdominal complaints in general practice is consistent with other studies, which showed a high prevalence of ‘non-

colonic symptoms’ in patients with IBS.<sup>1,21–23</sup> The study is also consistent with other studies that confirmed the influence of psychosocial factors on the course of complaints and on the health care-seeking behaviour of patients with IBS.<sup>24–26</sup> The question of whether the excess of psychosocial problems in patients with IBS are a cause or a result of IBS cannot be answered from the present study. Nevertheless, the physician’s correct perception of a patient’s anxiety and the meaning of the complaint to the patient is a first step in successful treatment, as shown by Dulmen *et al* in an outpatient study.<sup>27</sup> They also showed the

importance of continuity in the doctor-patient relationship. Catastrophizing cognitions diminished and patient satisfaction increased when patients saw the same doctor throughout consecutive consultations.<sup>27</sup> In the absence of effective treatment so far, training of physicians to explore and influence systematically the meaning of the complaints to the patient could lead to a more favourable course in patients with IBS. Use of such behavioural interventions may be supported by antidepressants, as some studies in patients with IBS especially reported clinical benefit of tricyclic antidepressants and fluoxetine.<sup>24,28,29</sup> When the results of the outpatient study could be transferred to a general practice population, special guidelines and training of GPs into this direction may have the greatest impact, as GPs do treat most patients with IBS themselves without referring them.<sup>3,8</sup> The finding of van der Horst *et al*, that outpatients with IBS showed as many non-colonic symptoms as patients with IBS in general practice, supports the idea of training GPs in this area.<sup>30</sup>

This study reported an excess of absence owing to illness and a high rate of use of health care services in patients with IBS. Patients with IBS contacted general practice, medical specialists, and alternative healers more frequently than the general population. A higher rate of consulting general practice was to be expected as patients were selected on having visited general practice at least once in order to have a GP-confirmed diagnosis of IBS. The literature has shown that GPs are capable of diagnosing IBS correctly.<sup>31</sup> The excess use of alternative medicine in patients with IBS has been reported in the literature and suggests the failure of regular medicine to meet patients' needs.<sup>24,32,33</sup> The high rate of consulting medical specialists and alternative healers poses a burden on the health care budget and on patients' budgets too, as visits to alternative healers are often not reimbursed by insurance companies. In addition, patients are at greater risk of unnecessary investigations and/or harmful treatment. These findings also stress the value of further research in applying possibly more effective approaches in treating patients with IBS in general practice. Van der Horst *et al* showed, in a single-blinded trial, that guidelines for GPs on the management of IBS resulted in a reduction of the use of health care services in the intervention group during a two-year follow-up period.<sup>1</sup> Van Dulmen *et al* showed that doctors' correct perceptions of patients' complaint-related cognition resulted in a reduction in patients' use of medical health services in primary care.<sup>34</sup> A special training into this direction to acquire specific communicative skills could be quite cost-effective.

The relatively small sample of patients with IBS may be seen as a limitation of the study. However, the random sample of patients with IBS has been drawn from a large population and may be seen as a representative feasibility study to indicate problem areas worthwhile to be studied on a larger scale. The response percentage among patients with IBS of over 70% is considered adequate. Another limitation is that the data collection took place 10 years ago, although the data were never used for analyses to answer questions specific to IBS. A comparison with more recent studies does not show systematic differences however, which could have to be attributed to temporal trends, and the results supplement information from existing studies.

The study, like other studies, confirmed that the majority of patients with IBS are women.<sup>35</sup> The study also showed that the symptomatology differed somewhat by sex. Male patients with IBS are at greater risk of alcohol and drug problems. This despite the fact that the study also showed that the overall use of alcohol in patients with IBS is not higher when compared with the general population. The finding of low educational status in patients with IBS is not found in other studies and deserves further exploration. Do patients with higher education communicate their

complaints differently? Is it easier for them to adapt to a certain lifestyle or to solve contributing problems?

We conclude that the study showed an excess of comorbidity and psychosocial problems, a below-average education status, and an excess in sickness absence and use of health care services. Special guidelines and training of GPs to apply a more integral approach may reduce the cost of health care and may lead to a more favourable course in patients with IBS. More research in general practice to develop effective approaches in treatment of this group of patients is needed.

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