



Research Article

Might a Systematic Reading of the Thickest GP Patient Medical Records Improve our Understanding of Functional Disorders

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Rec date: Jan 07, 2015 Acc date: March 30, 2015 Pub date: April 06, 2015

Abstract

Background: A large proportion of General Practitioners' (GPs) patients experience health problems for which there are no objective findings indicating a clear diagnosis or an appropriate treatment.

Objective: In this study, we examine the medical records of one GP relating to all his patients diagnosed with irritable bowel syndrome (IBS). Our aim was to deepen our insight into the concept of 'functional disorder' as it presents in general practice.

Design: From the patient list of a male, Norwegian GP, 99 patients diagnosed with IBS from 1991 through 2008 were identified. From among these, the 20 patients whose medical records were most voluminous were selected and catalogued according to patient age and gender, other gastrointestinal diagnoses as well as all other diagnoses. The records of the remaining 79 were catalogued according to the thickness of their medical records, as well as by patient age and gender, and any record of malignant gastrointestinal (GI) disease.

Results: Of the total of 1190 patients on the GP's list, 8.4% had been diagnosed with IBS. A high number of disorders was noted involving a variety of organ systems, the most frequent being diagnoses involving the musculoskeletal system. During the period of the study, the 20 patients selected had undergone a total of 52 endoscopies, none of which revealed GI system malignancies.

Conclusions: Many of Norwegian GPs' patients fulfill the criteria for IBS. The complex health problems they present may be seen as a continuing history of pain involving various organ systems over time.

Key words:

General practice, Patient medical records, Functional disorder, Irritable bowel syndrome, Chronic pain

Introduction

Both GPs and hospital specialists experience that many patients suffer from ill health characterized by symptoms that impair function but which cannot be precisely diagnosed using objective measures. Such conditions are typically termed 'functional disorders' within somatic medicine and 'somatoform diseases' within psychiatry.

In a 1999 Danish study, such conditions accounted for approximately 20% of all initial general practice encounters [1]. The author of a 2003 American study claims that at least 33% of somatic symptoms presenting in primary care are without medical explanation, and that approximately 25% of these are chronic [2].

Another study has demonstrated that up to 40% of GP consultations are related to such health issues [3]. In addition, many of these patients report not having been taken seriously by their doctors [4] while their doctors report feeling that they themselves had fallen short [5]. Recently, the abbreviation MUPS – Medically Unexplained Physical Symptoms – has come into use within Anglo-American literature. Irritable Bowel Syndrome (IBS) may be regarded as a MUPS as can Fibromyalgia Syndrome (FMS), Chronic Fatigue Syndrome (CFS), as well as several other symptom patterns involving chronic bodily pain, anxiety and depression. There is also a striking tendency for the same patient to be diagnosed with more than one of these patterns of symptoms [6-10], a finding supported by a Norwegian study of patients with IBS [11]. 'Overlapping symptoms' and 'overlapping disorders' are terms used in the international literature to indicate this phenomenon [6,12-14].

Difficult and painful life experiences have been shown to be related to functional disorders, especially in cases of IBS [14-17], FMS [9,18], CFS [19], Chronic Pelvic Pain (CPP) and other chronic pain conditions [21].

Though health issues similar to IBS were described as early as the 1800's, the first definition of diagnostic criteria wasn't established until 1978 (Manning Criteria), which later became the Rome Criteria, last revised in 2006 [14]. Both the history and the criteria for IBS were reviewed recently in the Journal of the Norwegian Medical Association [22], and in a Norwegian General Practice textbook [23].

Given that patients diagnosed with IBS have often received other diagnoses as well, we anticipated that their higher frequency of GP consultations would result in thicker and more extensive medical records. We also presumed that such documentation accumulated over time might contain information that could help improve our understanding of IBS, and thus the phenomenon of functional disorders. In this study, we have explored how the health complaints of patients diagnosed with IBS have been documented by their GP over time.

As is mandatory within Norwegian general practice, the GP generating the material studied here followed the International Classification of Primary Care (ICPC) system. This coding system facilitates classifying the reason for each encounter, in addition to diseases occurring, according to organ systems involved. Each letter from B to Y denotes an organ system. Letter A is the code for general and unspecified complaints while letter Z stands for social problems.

This study was approved by the Regional Committee for Ethics in Medical Research (no. 4. 2008.2637).

Materials and Methods

Our study is based on the patient records provided by a GP who had the same clinical practice for 28 years, until January 2009. Beginning in 1991, he utilized an electronic medical record system. When diagnosing IBS throughout those years, he adhered consistently to the most current and authoritative diagnostic criteria (Rome I-III).

At the time of the most recent registration of the materials used in this study (January, 2009), the GP's patient list included 1190 people. The GP identified a total of 99 records of current patients which involved IBS, utilizing a statistical program built into the medical record system. He selected the 20 records with the highest number of pages, anonymized and printed them, and turned them over to the first author (LTN) for further investigation. LTN analyzed these 20 records to identify the diagnoses for each patient as entered in connection with all in-person and telephone consultations. These were tallied and differentiated according to organ code. The total number of diagnoses connected with the five most frequently encoded organ systems will be presented here.

In addition to age, gender, observation time, and the length of the medical record, the following GI examinations were registered: gastroscopy, colonoscopy, x-ray of the colon, ultrasound of the

abdomen, and computerized tomography (CT) of the abdomen. Salient life events were registered, such as conflicts at the workplace, severed relationships, a serious disease or death of a partner or child.

The GP himself registered the age, gender and length of the medical records of the remaining 79 patients, in addition to the duration of their doctor-patient relationship and any diagnosed GI system malignancies. After anonymizing this information, he presented it to the first author.

Results

A total of 8.4% of the patients had been diagnosed with IBS. Figure 1 presents the findings regarding the 20 patients with the longest records. Observation time was on mean 17.7 years (min 14, max 18). For these 20 patients, between 79 and 277 diagnoses had been given (mean 143) from 1991 – when electronic medical record system were introduced – until 2008. In addition to GI-system related diagnoses (3-47), the most frequently occurring diagnoses were those relating to the musculoskeletal system (4-103), the cardiovascular system (1-77), the respiratory system (0-88), and those denoting mental health problems (0-33).

Age	ICPC**	44	47	56	59	60	66	67	67	70	71	74	74	78	78	78	80	80	81	81	84
Sex		F	F	F	F	M	F	F	M	F	F	M	F	F	F	F	M	F	M	F	M
OT* (in years)		18	18	18	18	18	18	18	18	18	18	14	18	18	18	18	18	18	16	18	18
Diagnoses																					
Total		124	125	194	157	79	123	204	130	117	195	93	107	213	89	122	277	131	79	167	142
Gastrointestinal system	D	13	6	28	17	3	15	22	6	27	12	15	15	10	18	24	39	22	47	12	28
Musculoskeletal system	L	23	63	78	103	27	10	46	17	58	20	22	22	46	21	32	54	42	4	32	4
Cardiovascular system	K	1	1	15	11	11	22	10	2	2	52	12	3	60	23	2	81	7	4	3	77
Respiratory system	R	4	2	20	0	2	6	11	22	8	9	12	18	5	1	7	1	19	9	88	6
Mental system	P	33	23	15	0	1	17	30	17	0	2	3	3	0	2	6	28	7	0	3	1
Gastroscopy		4	1	4	2	1	3	2	1	3	0	1	1	0	1	3	5	1	0	1	3
Colonoscopy		0	0	2	0	1	0	2	0	1	3	2	1	0	1	0	0	3	3	0	3
X-ray colon		0	0	1	0	1	2	0	1	1	1	0	1	1	1	0	0	0	1	2	1
Abdominal ultrasound		1	0	3	2	0	3	1	1	2	1	0	0	0	2	3	2	2	3	1	4
CT abdomen		1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0

Figure 1: Age (years), sex (M= male, F=female), observation time in years (OT)*, diagnose-chapter in ICPC**, and specialist examinations for the 20 patients with Irritable bowel syndrome (IBS) who had the longest patient records in one specific general practice *OT after introduction of electronic medical record in 1991, paper records from 1980-1990 were not available **International Classification of Primary Care

Of the 14 women and six men among the 20 patients included, the mean age was 70 years. The length of their medical records ranged from 26 to 64 pages (mean 39).

During the registered period, these 20 patients underwent a total of 102 specialist examinations (gastroscopy, colonoscopy, colon x-ray, ultrasound abdomen, and CT abdomen), 52 of which were endoscopies. Though all but one of the patients had undergone at least one endoscopy, no GI tract malignancies were found. The GP had registered salient life events as denoted above having been experienced by 18 of the 20 patients.

Of the 29 women and 50 men among the 79 patients with less voluminous medical records the mean age was 45 years (9-84). The mean length of their medical records was nine pages (2-26). One of these patients was diagnosed with a GI-system malignancy.

Discussion

Twenty patients diagnosed with IBS according to the prevailing criteria had been given an average of 143 diagnoses in a period of 18 years in one specific GP's practice. This corresponds to 8 diagnoses annually per patient in a group dominated by women. Their mean age increased from 52 to 70 years in this period. These twenty patients had

a mean of five examinations performed by specialists in gastroenterology or medical imaging in the same period, without disclosure of malignancy in any of the patients. The corresponding numbers for the 79 patients with thinner records have not been studied and the number of consultations has not been counted in either group.

In Norway, each GP consultation must conclude with the recording of at least one diagnosis for the social security system to authorize payment. Thus, the thickness of these patients' medical records and the large number of diagnoses assigned to them may primarily reflect the high frequency with which they consulted their GP. The fact that women consult their GP more often than men is well known. In the present study this was the case for the selected group of 20. Men dominated the group of 79 patients diagnosed with IBS and were, on average, younger than the women. Thus, as could be expected, they had shorter records.

We chose to carefully examine patients' records from only one GP who is acknowledged for having a special interest and a particular competence in the fields of gastroenterology in primary care. This decision allowed us to study a best possible scenario. Any less experienced and dedicated GP may most probably have a higher rate of referrals to specialist examinations.

A careful study of the 20 records revealed that not all health problems presented resulted in a diagnosis. Thus, given the health problems mentioned in each consultation note, the number of diagnoses assigned could well have been even higher.

In this specific general practice, 8.4 % of the patients had been diagnosed with IBS, which corresponds to the prevalence noted in a Norwegian population study [11]. This would seem to indicate that the GP followed diagnostic criteria consistently in his practice, in accordance with clinical guidelines. It would also indicate that the statistical program built into the medical record system had accurately identified those patient records that contained the diagnosis IBS.

Diagnosis and treatment of IBS

The fact that an experienced GP in a stable clinical practice during the 18 years study period found it appropriate to refer 20 patients for a total of 102 specialist examinations in order to rule out possible malignancies or other organic disease, demonstrates just how demanding it can be to implement a criteria-based approach to IBS in general practice. When patients learn of a potential disease risk, they often request technical interventions. In order to be able to assure the patient that 'nothing serious has been found', the GP must then requisition these examinations, for his own safety as well as the patient's. The number of such GI system examinations undergone by members of the group of 79 patients with IBS was not registered, but it is safe to assume that the implicit challenge for the GP was similar.

Documentation of effectively medicating IBS is weak. A 2008 BMJ editorial [24] commented on a systematic review [25] as follows: "The disorder is difficult to treat, hence the wide range of treatment used: dietary exclusion, fiber supplements, and probiotics; antispasmodic drugs; antidiarrhoeal agents, and laxatives; antidepressants, hypnotherapy, and cognitive behavioral therapy. This unusual spectrum of drug and non-drug treatments also highlights our ignorance about the cause of the condition" [24].

Comorbidities and 'overlapping' pain

Our study, based on one specific GP's practice, documents that patients diagnosed with IBS also experience pain in other organs and/or parts of the body. This finding was also demonstrated in the population-based Norwegian study referred to above [11], as well as in numerous international studies [6-10,12,13,21,26-30]. We are not aware, however, that particularly voluminous general practice patient medical records have been singled out and examined with the aim of exploring the overlapping of pain or of how the experience of pain seems to locate in a variety of organs and/or body parts in the same patient over time.

The diagnostic codes we encountered most frequently in our study denoted the musculoskeletal system, with an average of 30 recorded and varying diagnoses per patient during the study period, a finding which is compatible with the documentation of a consistent and highly frequent overlapping of IBS with other chronic pain syndromes [6-8,10,12,29,31]. For example, a recent Norwegian study involving 817 persons infected with *Guardia Lamblia* documented this infection being associated with both IBS and CFS three years after the disease was diagnosed [32].

The diagnosis IBS was recorded in most of the consultations for one particular patient while it appeared only sporadically for the majority of the 20 patients with the thickest medical records. This finding is supported by studies demonstrating that the diagnosis of IBS and other diagnoses including pain are recorded both simultaneously and sequentially during a patient's lifetime. In the literature [6-8,18,27,29], women are seen to dominate both these constellations.

Only specialist examinations relating to the GI system were registered in the present study, though comparable examinations of other organs systems had most likely been performed whenever other symptoms called for them.

Functional disorder or dysfunctional medical theory?

These health problems, differentiated initially by organ, organ system or the body part apparently involved and then delegated to the respective medical specialties, have proven difficult both to explain and to treat. Over the years, such acronyms as Central Sensitivity Syndromes (CCS) [13] and Bodily Distress Disorder (BDD) [30] have been introduced. The definition of the latter was later reevaluated since those authors claimed that the criteria for BDD cover ten diagnoses for functional disorders completely. However, such 'meta-naming', the grouping of so-called functional complaints, does not help to explain the origin of this kind of suffering nor does it add to our understanding of it [34]. We dare state that the extensive activity displayed in biomedical research in order to firstly come to grips with these phenomena, and, secondly, find constructive solutions for the inherent problematic, has failed. We even claim that the prevailing conceptualization of so-called functional disorders indicates profound errors on theoretical level since the presented health problems not only remain prevalent and uncured but rather maintained and chronified. These facts call for a re-conceptualization.

If, however, the symptoms were examined using, for example, the model of 'allostatic load' – developed and elaborated by neuro-endocrinologists and immunologists working within modern stress research in order to understand the effects of chronic strain – meaningful connections can be identified [35]. This model recognizes that highly demanding experiences of long duration evoke a constant

hyperactivity of the body's stress responses. The resulting overload taxes such vital functions as the immune system, the hormonal system and the central nervous system. This then leads to long-lasting and even permanent physiological malfunctioning, resulting potentially in increased perception of pain, recurring infections, chronic systemic inflammation, as well as anxiety, depression and sleeping problems [35,36]. While being detrimental to global health, chronic stress is, according to the concept 'allostatic overload', not to be understood as a cause but rather as a mediator, transforming personally overwhelming adversities into a destructive over-taxation of the body's vital resources.

We, the authors, are fully aware of the latest years' accumulated evidence of the detrimental impact on health from adverse childhood experiences (ACE). However, the patients' records in our material did not provide us sufficiently detailed information to allow for a correct ACE-score to be established for all participants [37]. We, the researcher, had no opportunity to address the participants in person with regard to these topics.

Conclusion

Our review of the most voluminous patient records within a single general practice revealed that patients diagnosed with IBS undergo a high number of annual consultations, many involving symptoms related to a variety of organs. They are assigned a variety of diagnoses and referred to specialists for a high number of examinations, particularly of the GI system but also, most likely, of other organ systems and body parts.

Thus, our findings indicate that the issue investigated as 'IBS' represents a great challenge for the consulting doctor, and also consumes a high amount of health care resources – without, however, leading to appropriate and specific treatment or succeeding in interrupting the disorder's chronicity.

Apparently, such chronic and complex health problems remain difficult both to understand and to adequately confront within the prevailing biomedical frame of reference. Such alternatives as the model of allostatic load might offer more productive ways of conceptualizing these health problems.

While an alternative to the prevailing biomedical approach to clinical practice is needed, no 'new' or 'alternative' approach could simply be envisioned and, subsequently, applied as long as the arena for its application – the health care system – remains deeply rooted in an 'old' theory or paradigm. The task of formulating such a fundamentally different framework, based on a more adequate theoretical underpinning, clearly exceeds the scope of the present study and paper. It is a project for the entire discipline of medicine to explore.

Acknowledgement

The first author received a short-term fellowship from the Norwegian College of General Practitioners. We, the authors, want to thank Susan Schwartz Senstad for carefully editing our manuscript

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