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Chapter 5

Non-Pharmacological Approach to Irritable Bowel Syndrome

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Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/66373

Abstract

Irritable bowel syndrome (IBS) is a commonly diagnosed gastrointestinal condition. It represents a significant healthcare burden and still remains a real challenge. Over the years, IBS has been described as a strict illness of the gastrointestinal tract (medical model) or as a more complex multi-symptomatic disorder of the brain-gut axis (bio-psychosocial or psychosomatic model). The reason why IBS has been such a challenge and is so difficult to handle might be related to different approaches. These differences in the view of the syndrome have affected the assessment, treatment and handling of the IBS patient. Patients with IBS, where the symptoms from the gastrointestinal tract are one part of a multi-symptom palette sometimes hidden in the body or mind, need a more holistic outlook. The key to an effective treatment approach is a gastroenterological examination to exclude other diseases along with an assessment of the whole body and its awareness by a body-mind therapist. This chapter discusses the view of the patient together with patient evaluations and body-mind treatment from a practical point of view.

Keywords: irritable bowel syndrome, body awareness therapy, body-mind evaluation, treatment

1. Introduction

Irritable bowel syndrome (IBS) is one of the most commonly diagnosed gastrointestinal conditions and generates a significant healthcare burden with huge economic costs [1]. In Sweden, 10–20% of the inhabitants suffer from some kind of disturbed bowel function [2]. Many are on long-term sick leave and there are studies showing that about 46% of all sick leaves are due to these patient categories and thus generating high costs for the society [3]. About 30–40% of the

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patients, consulting healthcare for acute abdominal troubles, are not diagnosed, and hence there might be IBS patients hidden among this group of patients. Increased economic consequences are also incurred as a result of unnecessary surgery. IBS is a common disease with symptoms, including abdominal pain, cramping or bloating. It may also include alteration in bowel habits like faecal urgency or obstipation. Patients may find relief of pain and other discomfort upon defecation. The prevalence of IBS may vary with different definitions and more severe cases can be underestimated. IBS is more prevalent among women. IBS patients can be subdivided in relation to symptoms. The three subtypes are a constipation predominant group (C-IBS), a diarrhoea predominant group (D-IBS) and a group with alternating type (A-IBS) where stool fluctuates between diarrhoea and constipation. In some cases, the symptoms may be so severe that a risk for suicide might occur. A final diagnosis of IBS should be based on clinical symptoms together with exclusion of various somatic diseases [1].

IBS patients often have various other symptoms, beside their gastrointestinal problems. They may have pain in other parts of the body, they may score high psychological symptoms as well as low quality of life. We have also found that they show deviations in body parameters such as body tensions, bodily stress patterns, low body awareness and biochemical stress parameters. Many IBS patients have been subjected to traumatic events and may suffer from a low self-esteem, difficulties setting limits and hypersensitivity. They are often co-diagnosed with fibromyalgia, "burn-out" depression and/or panic disorder. Patients may consult a number of different specialists within gastroenterology (abdominal problems), psychiatry (panic attacks and depression), rheumatology (arthritis), dermatology (eczema and itch) or primary healthcare (chronic fatigue syndrome, fibromyalgia and myalgia). The diagnosis given to a patient with one of these conditions often depends on the characteristic symptoms and the expertise of the treating clinician [1, 2, 4–6].

IBS patients have been reported to have higher levels of stress and more traumatic experiences than patients without gastrointestinal disturbances. Rats, experimentally induced with chronic stress, showed gastrointestinal symptoms (GIS) comparable to IBS. Different parts of the autonomic nervous system (ANS) have been shown to vary in activity when patients display diarrhoea or constipation as pre-dominant symptom of their IBS. When the state of stress continues it may lead to dysfunction of the ANS, that is, an autonomic dysfunction, sometimes called a comprehensive health disturbance. The syndromes in patients with overlapping diagnoses and multi-symptoms have also been called functional somatic syndromes, medically unexplained symptoms, somatoform disorders, unexplained clinical conditions or bodily distress syndrome. It has been suggested that these conditions actually should be gathered under one common name [1–4, 7, 8].

1.1. IBS over the years

The year 1948, Collins defined the syndrome of irritable colon as a "hyperirritable, neuromuscular imbalance of the colon sufficiently severe to cause abdominal pain or distress." He continued that it was "due to functional as well as somatic causes and it is important to emphasise physiologic, local irritative and psychosomatic factors" [9]. In 1956, Bargen wrote "The so called irritable colon is primarily the result of an emotional disturbance, a tension

http://dx.doi.org/10.5772/66373

state, abuse of laxative agents or a dietary indiscretion." Bargen continued "Measures should include particular attention to their emotional disturbances, their situation in respect to stress, and particularly their dietary problems" [10]. IBS was later on (during the 1960s), defined as a disease of the gastrointestinal region with mainly pharmacological treatment. Wessely et al. [11] wrote in 1999 an article entitled "Functional somatic syndromes: one or many?" leading to that several physicians expressed their frustration about the treatment of IBS. Enck and Martens [12] wrote in 2008, "The next consensus for the syndrome of the irritable bowel has to be interdisciplinary." In the late 1970s, the authors started to use the word "biopsychosocial" and up to now about 100 articles have been published according to PubMed using this term in relation to IBS. Throughout the literature, two views emerge, including the medical view of IBS as a strict disease of the gastrointestinal tract, as well as a psychosomatic/biopsychosocial view in which IBS is seen as a complex multi-symptomatic disorder [1].

2. Non-pharmacological treatments

Most research concludes that the management of the complex syndrome IBS should rely on a combination of non-pharmacological and pharmacological therapies with dietary and lifestyle modifications. Some authors claim that treatments involving body and mind are the most effective and powerful treatment strategies in IBS/body distress patients [13–15]. Different non-pharmacological regimens have been used for the treatment of IBS. Body-mind therapies such as gut-directed hypnotherapy, mindfulness therapy, functional relaxation and body awareness therapy have been used with promising results both during treatment and at follow-up. Over the years, treatments have progressed from mostly individual to more group sessions; and there is also a trend towards prolonged sessions. The treatment modalities have also gone from focusing either on the body or the mind to now focusing on both [1].

Hypnotherapy has been used to treat IBS patients with good results since Whorwell et al. introduced it in 1984 [16]. Hypnotherapy means to induce a state of relaxation or trance in response to verbal or other stimuli, with suggestions for improvement made. The patient is taught relaxation, ego strengthening and coping skills. Tailoring the therapy to the patient's symptomatology is essential and the importance of practice is vital and should ideally take place on a daily basis. Hypnotherapy is mostly used with individually tailored technique and 12 sessions of treatment are provided to gain maximum benefit. It has been mostly used with gut-directed therapy; however Carolusson [17] includes both gut-oriented hypnotherapy and hypnoanalysis either separately or in combination. She concludes that hypnosis treatment has to be designed depending on patients' personality and possible mental defence-functions in relation to the symptoms as well as the mental and social resources. This technique is exceptionally operator-dependent; and not suitable for everyone [18]. Whorwell suggests that "hypnotherapy incorporated into a programme with a contingency plan for dealing with individuals who do not respond to this particular form of treatment is the best form of treatment" [19].

To apply *mindfulness* is to practise awareness of internal sensations and to have a non-judgemental approach to all experiences, impressions, thoughts and feelings that comes into awareness and to be fully present in the activities. Gaylord et al. adapted this practice to an IBS

population by encouraging the patients to apply this approach on IBS-related symptoms and perceptions. Participants were instructed to notice any sensations in the abdominal area and try to distinguish those sensations from thoughts about the sensations [1, 20].

Functional relaxation is assumed to be a treatment of autonomic dysfunction with proprioception and a part of body awareness. During relaxed expiration, very subtle movements of the small joints are performed, when at the same time, the patient, focus and explore the perceived body sensations which are triggered by the movements. This takes unconscious body-mind experiences into account and, due to rediscovery and development of basic motivational systems, previously forgotten forms of bodily self-awareness can be re-experienced [1, 21].

Body awareness therapy (BAT™) is structured movements based on human anatomical and physiological requirements to achieve optimal dynamics. The BAT™ alludes to help the body find its natural posture. Then the body systems (circular, muscular, nerves and breathing) facilitate to recover their natural function. By doing so, unconscious body and mind experiences can come into awareness. Practising body awareness includes presence, reflection and acceptance. BAT™ was developed in Sweden by physiotherapists in the early 1970s. Nowadays it is used for treatment of various stress and pain-related conditions in all Nordic countries, as well as in Estonia, Austria, Scotland, Switzerland, the Netherlands, Spain and Turkey [1, 22].

One common point of these methods is training on how to be in the here and now; to be aware of the present. Body-mind training affects the level of muscular tension, the posture, the breathing, together with the function and mobility of the inner organs. The bodily experiences always exist in the present, and the awareness of emotions is inseparable from the consciousness of their bodily expressions. Altogether, these express how a person feels mentally and physically. In this way, these therapies, embracing body and mind, are assumed to work through a physiological transformation accomplished via the ANS [21, 23]. Although the methods differ slightly in how they are addressed, either through the mind (hypnotherapy or mindfulness) or through the body (body awareness therapy or functional relaxation), the treatment results are similar [1].

3. The Studies of Functional Bowel Syndrome and Treatment (SOFT) project

A project was started in 2000 with the purpose of examining patients with functional bowel disorders and compare them with healthy volunteers (without bowel disorders), and further to evaluate the effects of body awareness therapy on the patients symptoms. Since 2004, the authors (KA, gestalt therapist/BSc in chemistry/biomedicine and EE, physiotherapist/PhD in biochemistry/physiology, both trained and certified in BAT) have worked together and treated approximately 340 patients. Patients are referred from both primary and special care units (medicine and surgery), about 30% from each. Due to IBS being such a complex syndrome and our diversified backgrounds, we were interested in evaluating as many symptoms

http://dx.doi.org/10.5772/66373

as possible reported by the patients. In a smaller study of IBS patients, vitamins, fatty acids and minerals were followed. We have also tried to characterise the IBS subtypes according to the data measured. In an epidemiologic study including a random population sample from the general population in Gothenburg, Sweden, we studied the correlation of gastrointestinal symptoms to other symptomatology in the same population. The SOFT studies and their results are described on the following sections. For practical reasons, the IBS patient is referred to as a women (she) in the following text.

3.1. The examination procedure in the SOFT study

After a thorough interview including medical history and their narrated experience, the patients are examined with two physical examinations: a resource-oriented body examination (ROBE) and a moving test body awareness scale-health (BAS-H) (**Table 1**). The ROBE examination evaluates body posture, function, respiration, passive mobility, balance and muscular degree of palpation. BAS-H evaluates grounding, midline, respiration and ability to set limits. The BAS-H test is based upon observations made by a physiotherapist of defined items on basic movements (BASobs) as well as standardised questions concerning their body awareness (BASself). From these two examinations one can get a picture of, to what degree the patient herself is aware of her body and its tensions. Patients in the project complete self-assessment questionnaires concerning psychological and psychosocial symptoms, pain, bodily symptoms and also a questionnaire regarding gastrointestinal symp-

Anamnesis	
Psychosomatic physiotherapeutic examinations	
	Resource-oriented body examination (ROBE)
	Body awareness scale examination (BAS-H)
Blood and saliva samples	
	Cortisol, prolactin, C-peptide, TG (triglycerides), minerals
	Vitamins
Questionnaires	
	GIS (Gastro Intestinal Scale, gastrointestinal symptoms)
	SCL90 (Symptom Check List 90, general symptoms, rating how much)
	CS (Complaint scale, general symptoms, rating how often)
	SOC (sense of coherence, health concepts related to quality of life)
	PRS (psychosocial rating scale)
Pain body map	Women/man
Food diary	4 days (including Saturday and Sunday)

Table 1. Examinations of the patients in the SOFT project.

toms. The CS scale measures autonomic dysfunction and can be divided into a vegetative, muscular and psychological part. Stress parameters in blood and saliva are also measured [1, 4–6].

In our study, the patients are evaluated at the unit two to three times during a total time of approximately 3 h, before starting treatment. After these examinations and meetings, we can form an opinion of each patient and what she may need to reduce symptoms and improve quality of life. These procedures also give us a hint of to what extent the patient is able to comply with our group treatment, and if we need to strengthen and support her regarding this before the start of treatment. Individual dialogues are held and questionnaires are completed at four times, one before treatment, one after 12 and 24 weeks, respectively, and also 6 months after the end of treatment.

3.2. The subtype study

Eighty IBS patients (30 D-IBS, 16 C-IBS and 34 A-IBS) underwent physiotherapeutic examinations (for dysfunctions in body movements/awareness) and were compared to an apparently healthy control group. Both IBS patients and controls answered questionnaires regarding psychological (SCL90) and gastrointestinal symptoms. Biochemical variables were analysed in blood. The subtypes were compared with each other and the control group [6].

3.3. The mineral, vitamin and fatty acids study

In a sub-study, 30 IBS patients were analysed for whole blood or serum levels of vitamins (B6, B12, E, Q10 and folic acid), minerals (Na, K, Ca, Mg, Cu, Fe, P, PB, Li, Zn and Selenium) and fatty acids (saturated, mono-unsaturated, Ω3 and Ω6). Questionnaires for gastrointestinal symptoms (GIS) and psychological symptoms (SCL90) were completed and correlated. Results from questionnaires versus minerals were calculated. The patients were grouped according to reference ranges established by the laboratory (Lab. für spektralanalytische und biologische Untersuchungen, Stuttgart, Germany) [24].

3.4. The epidemiologic study

The study of "Men born 1913" started in Gothenburg in 1963. In 2003, women born 1953 were included for the first time and a total of 668 women of 50 years old were randomly selected from the general population. We focused on gastrointestinal symptoms such as "have you during the last three months suffered from diarrhoea and/or constipation." The women were extensively screened with examinations such as descriptive data (body weight, height, BMI, waist hip, circumference, smoking and alcohol), somatic data (blood pressure, cholesterol, triglycerides, glucose and diseases) and vegetative data such as (dizziness, perspiration, breathlessness, indisposition and chilliness). Additionally, questions regarding stress were included (experience of stress, burnout and absence from work due to stress), psychological expression (lack of sleep, nervous symptom and easily moved to tears), psychosocial symptoms (situation of work, home, economics, health, memory and

energy), grade of occupation (work, sick list and early pension) and medication were registered [25, 26].

4. Results

4.1. Before treatment evaluation of IBS patients in the SOFT study

Before treatment, evaluations show that IBS patients have deviated movement patterns, for example, grounding, midline, centration, setting up limits and awareness of respiration (BAS-H). Further they may have an impact on posture, body function (flexibility, spontaneous movement and passive activity), respiration and the muscular system (ROBE). Stress-parameters in blood and saliva can be affected and some patients also have mineral and vitamin deficiencies. Furthermore, they often present a low quality of life, and in many cases have experienced traumatic events (such as bullying in school, parental premature death, sexual abuse, war experiences or violations by the healthcare). They may also have psychological symptoms and autonomic dysfunction. The IBS patient thus shows many signs of being in a chronic condition of strain. In other words – they have an internal stress. Patients may have difficulties with trusting healthcare providers. Several patients have been adversely affected by previous visits. Often they have been told: "This is stress you will have to live with"; "With positive thinking it will be better." They often feel wrecked and angry, and tell that they have lost their self-confidence and self-esteem [1, 3–6].

When assessed before treatment, the patients in our study showed mostly deviated patterns in the results from the gastrointestinal survey, the body-oriented examinations and the pain drawings, in contrast to the psychological and biochemical data which were within normal limits or deviated (**Table 2**). From our experience to date, none of the patient from more than 300 patients have expressed only gastrointestinal symptoms [1, 3].

4.2. Results subtype study

The IBS patients as a whole group, as well as divided into subtypes, show higher triglyceride values compared to controls. When the material is divided into subtypes, the D-IBS group differ from the other two subtypes with significantly higher C-peptide values and lower prolactin values. This group score an almost normal degree in the questionnaire of sense of coherence (SOC) and thus showed a good quality of life. This was also reflected from the

Parts	Comments
Body oriented (ROBE, BAS-H)	Deviating in most cases
Pain (bodymap)	Deviating in most cases
Psychological (questionnaires)	Deviating or normal
Biochemical (blood, saliva)	Deviating or normal

Table 2. General results from examinations of IBS-patients.

D-IBS patients in a less distorted psychosocial rating scale in comparison with the other two subtypes. However, they express a high pain score similar to the other subtypes. The D-IBS group shows a disturbed body movement pattern on BASobs of the same magnitude as that of the C-IBS and the A-IBS group. However, on self-estimation (BASself) they rate themselves as having less dysfunction (not in conformity with the rating of the physiotherapist) reflecting a lower sense of body awareness. Compared to C-IBS and A-IBS, the D-IBS has the same amount of gastrointestinal symptoms but less psychological symptoms.

The C-IBS patients have higher prolactin values both compared to the controls and the D-IBS subtype. To some extent, similar pattern is seen in the C-IBS and the A-IBS group. On BASself examination both C-IBS and A-IBS rate themselves at the same level as did the physiotherapist. Both these subtypes suffer from more psychological and gastrointestinal symptoms, than was seen among controls. And the C-IBS patients have more psychological symptoms than the A-IBS group. Both groups display a lower quality of life outlined in the psychosocial rating scale and in the sense of coherence scale. Besides, they are afflicted with higher pain scores compared to the controls.

4.3. Results mineral study

IBS patients show considerable deficiencies of predominant minerals in whole blood. The study shows that only a small number of the tested IBS patients have levels within reference ranges (**Figure 1**). Values, both above and below the reference range (outliers), correlate to both gastrointestinal and psychological symptoms. Mineral values within reference ranges correspond to less gastrointestinal symptoms, both totally (Mg**, Cu* and Ca*) and for the sub-items gastrointestinal pain (Mg**), nausea (Ca*) and motility (Mg* and Ca*), see example for Ca (**Figure 2**). Mineral values within reference ranges correspond to less psychological symptoms as seen for Zink (**Figure 3**). These mineral shortages can contribute to the symptom map of the IBS patient. For the other substances measured more individual patterns are seen.

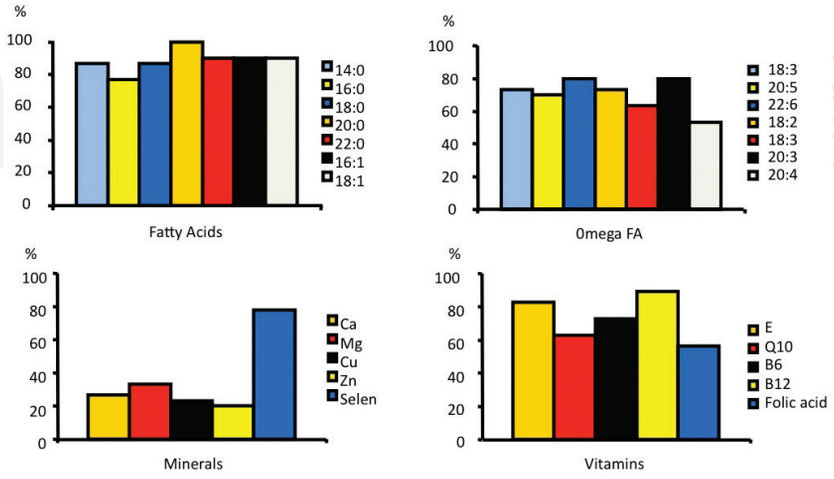


Figure 1. Percentage within reference ranges* for vitamins, minerals and fatty acids. *Lab. für spektralanalytische und biologische untersuchungen, Stuttgart, Germany.

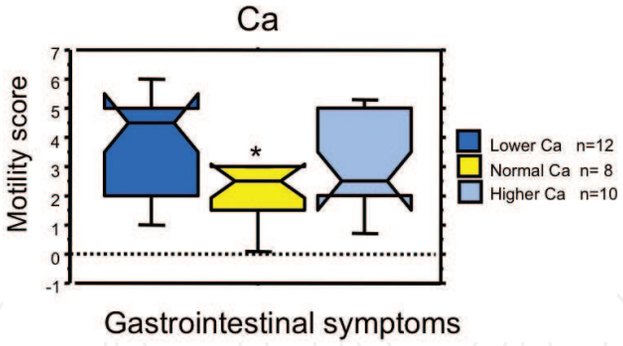


Figure 2. IBS patients with Ca levels within reference ranges express less gastro-intestinal symptoms, here illustrated as motility score. "Motility" = sensation of incomplete evacuation, sensation of urge to defecate. The higher score the more symptoms.

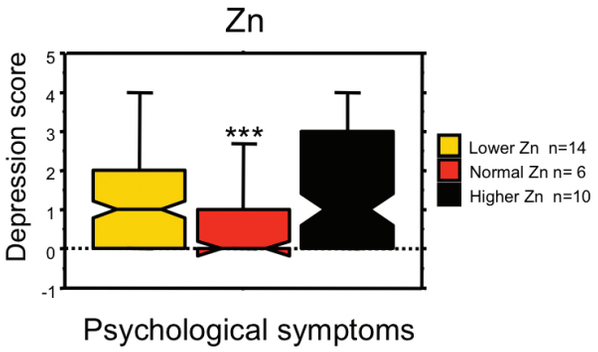


Figure 3. IBS patients with Zn levels within reference ranges express less psychological symptoms, here illustrated as depressive score. "Depression"—feelings of energy loss, suicidal ideation, easily crying and feeling—captured, lonely, depressed, anxious, hopeless or worthless. The higher score the more symptoms.

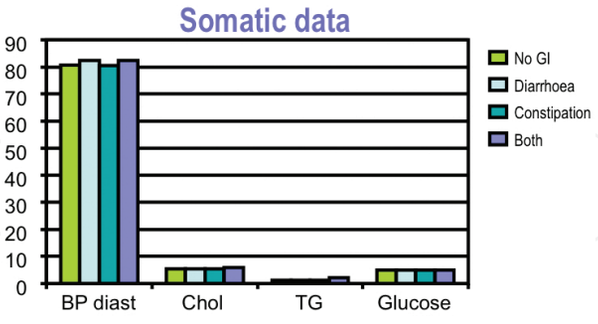


Figure 4. Score for some somatic data for the control group and the GI groups (diarrhoea, constipation and both).

4.4. Results epidemiologic study

Totally 668 of 994 invited 50-year-old women participated in the study. Of these 668 examined women, 492 (73.7%) had no gastrointestinal symptom. A total of 64 women (9.6%) reported diarrhoea, 85 (12.7%) stated constipation and 27 (4%) reported a mixture of diarrhoea and

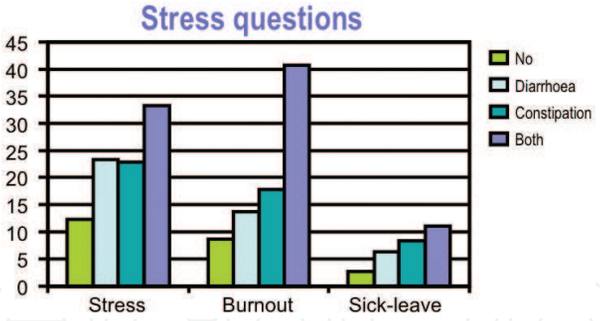


Figure 5. Score for stress, burnout and sick leave for the control group and the GI groups (diarrhoea, constipation and both).

constipation. No significant differences were seen between the controls (*no gastrointestinal problems*) and those women with gastrointestinal symptoms regarding *any of* the descriptive or somatic data (**Figure 4**). On the other hand, women reporting gastrointestinal symptoms showed significantly *more* vegetative and psychological symptoms, felt *more* stressed, had a *worse* psychosocial situation and were *more* on sick leave together with maintaining sickness pension in a *higher proportion* than did women without gastrointestinal symptoms (**Figure 5**). Our study shows that gastrointestinal symptoms are rather related to stress and psychosomatics, than to somatic parameters. The gastrointestinal symptoms contribute to an increased degree of sick leave and early retirement pension. These data underline the importance of considering *a more* psychosomatic attitude when treating patients with gastrointestinal symptoms.

5. The treatment procedure in the SOFT study

Process-oriented treatment is given in the form of body awareness practice in groups (8–12 individuals), 2 h per time on 24 occasions. Each occasion consists of bodily practice, theory and reflection. Psychosomatics, stress, anxiety, trauma, posture, allergy, IBS, food, body awareness, self-image, ANS and guilt and shame are theoretical themes that are addressed during each course. The structure of the treatment was inspired by Torrestad et al. [27], who developed a physiotherapeutic treatment model for awareness and relaxation. The bodily exercises derived mainly from basic body awareness (Institute for Basic Body awareness IBK™) [22].

5.1. The structure

Generally, the treatment is divided into three phases. The first phase is all about the body, its needs and body awareness. In the second phase, focus lies on changing the bodily behaviour. During the third part the training is aimed to integrate new insights and changes in everyday life. The same basic exercises are used each time; they are carried out easily from the beginning and are gradually expanded. Other exercises are included, if necessary. The focus lies on practicing body awareness, that is, to be aware of what is happening in the body. The order between lying, sitting, standing and walking exercises is varied in accordance with the group process. Most of the exercises can be performed in ways that are more stabilising or opening, and depending on the reaction of the patients, the exercises can be individually adjusted by

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the therapists. Every meeting begins and ends with a reflective discussion, in which each participant says her name and possibly something about how the past week has been, and how the body is feeling and at the end of the meeting, what has been noticed in the body during today's class.

5.2. The role of the leaders

Before each class the leaders outline a programme for the day which is adapted to the group process, focusing on the resources of the patients. Leaders keep diary on how the exercises are working and about themes that are expressed in the discussions. These notes created together with the leaders' own reflections, a basis for planning and the next training session. The purpose is to mediate the knowledge, both practical and theoretical, that each individual need in her process towards a better health. This purpose is reflected in the leaders' approach to the patients' questions and comments, as well as in planning the exercises and the theory.

6. The treatment results in the SOFT study

In conclusion, the studies in the SOFT project show that as the patients' gastrointestinal symptoms decrease, their pain decreases, they feel better and experience less anxiety and depression. They develop better relations to their own body and to the life around them. Patients change from having a feeling of being controlled by their gut and their symptoms to feeling safer and to be able to handle different situations in life, both physically and mentally. This treatment affects the patients' body, their feelings, thoughts and actions (**Table 3**).

6.1. Body examinations

ROBE shows that patients improve the variable function during treatment. They are also more relaxed and develop a higher degree of body awareness and a more normalised tension pattern at muscle palpation. In the BAS-H (the movement part of BAS-H), the IBS patients showed improvements. IBS patients also expressed awareness (the interview part of BAS-H) of their improvements, particularly in relation to the ground and in centring of the movements but also to breathing, and to the ability to set limits [3–5].

6.2. Surveys, SCL90, CS and SOC

Psychological symptoms at baseline scored with SCL90 were significantly more common in the IBS group than in the healthy control group. IBS patients score lower levels of psychological symptoms such as depression, obsession, paranoid ideation, anxiety, phobic anxiety and psychoticism after treatment, as measured by SCL90. The items of depression and somatisation were positively correlated. Patients show improvements in the vegetative part of the CS scale early in the treatment period (at the 12 weeks assessment) which then continued. The IBS patients showed a lower sense of coherence than the controls

I have noticed:	
"Body"	*how I am sitting, standing and walking, and if I am anxious or relaxed*
	that feelings quickly transmit to the stomach
"Mind"	*that I am better in expressing my needs, and how I want to do things without bullying others and when I am assertive, I get positive response and people listen to me*
I have started thinking about:	
"Body"	*to recognise when the stress in the body speeds up (to stop in time),*
	I respect more than previously how the body is feeling
	myself, I feel safe to listen to my body
"Mind"	*my past and how it has affected me*
	to take it easy, to cool down
	to not care so much about what other people think about me
I have started to change	
"Body"	*I have great use of the exercises that I learned at our meetings; I practice them daily and have now only minor phases of pain from the diverticulums*
	I feel more vitality and joy in my body.
"Mind"	*my ideas of achievement/performance, I don't have to do everything so much better than everyone else anymore*
	my way of interacting with others, I stand up for myself and my needs and I am, at the same time, more sensitive for the need of the other

Table 3. Patients' comments after 24 weeks of treatment.

before treatment. There were also differences in the items of comprehensibility, manageability and meaningfulness. Their sense of coherence or coping ability shows improvement during the treatment period in total and for each subtype. Before treatment, some patients scored themselves very low, comparable to levels reported from patients who had tried to commit suicide.

6.3. Pain drawings

At baseline, pain drawing gives higher scores for IBS patients than for healthy controls. In addition to pain in the stomach, IBS patients also have other bodily pain of different qualities, for example, in shoulders, arms, back, breast, head, leg and foot. No difference is seen between the subtypes (D-IBS, C-IBS and A-IBS) in this respect and the pain gradually decreased with treatment [3–5].

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6.4. Saliva cortisol

Measurements of saliva cortisol indicate that IBS patients can be classified into two groups according to how cortisol levels are reflected in the saliva during the day (diurnal cortisol). One group showed increased diurnal slope and another group lower diurnal slope, which may be interpreted as "overstressed" and "burnt out," respectively. Diurnal cortisol went towards normalisation after treatment with BAT, irrespective of the starting levels. Somatic symptoms correlated with biochemical symptoms. There was a correlation between the most normal score of muscle palpation and a more optimal slope of saliva cortisol [6].

6.5. Observations during treatment

In our study, we as leaders have recurrently noted indications that patients become more grounded and more relaxed during treatment. We observe, for example, better balance in movements and decreased facial tension. The patients develop a better relationship with their own bodies, which, for example, is noticeable when they find it easier to relate to their own body and express more positive opinions about it. They also score lower levels of psychological symptoms after treatment. As the patients become more aware of their symptoms, they improve their body awareness and their symptoms decrease. In the group situation, the changes are also reflected. For example, patients who are very silent when treatment starts will gradually become more confident and start talking more in the group, and those who early on, do not take part in pair exercises will later on join these exercises. Other patients reported that they no longer are dwelling on injustices in the past, and now could let them go and move on forward in their lives [3–5].

7. Working relationship between patient and therapist

Many authors emphasise the importance of a good working treatment relationship between the patient and the therapist/clinician. In order to get an optimal treatment, the therapists need to explore how to create practicable channels of contact. A person with a cognitive orientation wants to obtain a theoretically plausible explanation of her problems in order to feel safe and secure. A person with alexithymia, who cannot express and do not have words for her emotions, needs to increase her body awareness, in order to become comfortable with her body. A person with a vivid and colourful imagination is probably receptive to exercises that include mental visualisation. An optimal treatment plan should comprise all of these components [1].

7.1. Aspects of performing body-mind therapies

When treating IBS patients, who has tendency to dissociate, the therapist must be careful not to re-victimise the patient and thus risk the patient dropping out. By noticing early warning signs for dissociation and with careful guidance, the patients can learn how to build a trusting relationship with themselves and others, in order to maintain both a psychological and

a physical integrity (setting up limits) and also to facilitate for the patients to find words to describe the body-signals and sensations. With increasing body awareness, the patients will learn how to stabilise themselves when emotional systems are aroused. In order to first perceive the body and then to connect the sensations in the body with a certain sense or emotion is crucial for the treatment to be effective. The patient may express after several treatment sessions: "Before I just had a stomach ache, but now it is like that just before I get pain, I feel angry" [1, 3].

7.2. Duration of body-mind treatment

The length of treatment can be crucial [1]. Short treatment duration is not always sufficient for all patients; some can be left behind as they display more symptoms. In our studies we have found different patient treatment processes. IBS patients grade themselves on different symptom questionnaires, and both body and biochemical parameters are evaluated; the process can be determined by such parameters. For example, one patient can estimate high levels of symptoms before treatment that are reduced after treatment. Another patient might start by estimating low levels before treatment and score higher at 12 weeks and then lower again after 24 weeks. Such a patient probably need more time to become aware of her bodily sensations, and thus "underestimated" the levels of her symptoms/sensations before the treatment start. A third patient can score increasing symptoms throughout the entire treatment period. This example shows a patient who started out with having a substantially low body awareness, whose experiences have been out of reach/hidden in the body and then slowly arouse into awareness during the treatment process. Hence, treatment of this patient should not be concluded until the patient's symptoms decrease [1, 3–6].

8. Discussion

Many authors, including Collins et al. [9], Bargen [10] and Enck et al. [12], have stressed that IBS is a complicated condition with both physiological and psychological factors involved in the pathogenesis [1]. Moser points out that in practice, functional gastrointestinal disorders are the most frequent disorder seen and suggest that integrated psychosomatic care should be provided [28]. This is in line with the results from our SOFT project with physical, psychological and biochemical examinations and treatment of the "whole person" using body awareness therapy.

The SOFT study has shown that as the patients' gastrointestinal symptoms decreases, the pain decreases, they feel better and experience less depression and anxiety. The patients express a greater awareness of their own potential to affect their symptoms and are more able to control their lives. They change from feeling controlled by their gut and their symptoms to feel safer and able to handle different situations in life, both physically and mentally. Other studies confirm that patients' gastrointestinal symptoms and the extra-intestinal manifestations improve along with increased body awareness [1, 3].

Levels of anxiety and depression are significantly higher among patients with IBS in comparison with apparently healthy persons without IBS [7, 9, 10]. Something that may contrib-

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ute to the reduction in health-related quality of life in patients with IBS is the ability to cope with stressful circumstances in life. Antonovsky [29] says that a person needs a strong sense of coherence (SOC) to be able to cope with significant life stressor. Patients having alternating constipation and diarrhoea may be a great problem of daily life that could be considered highly stressful. Thus, a strong SOC might lessen the impact of various stressors on well-being or the stressors themselves can weaken SOC. Motzer et al. [30] have searched for therapeutic ways to increase SOC and quality of life and thus ease the psychological distress associated with IBS. Sperber et al. [31] questioned whether SOC represent a predictor of treatment success or is an outcome variable (which is changeable). We believe that SOC can act both as a predictor and an outcome variable. A low SOC may be a predictor at baseline reflecting the severity of IBS, and thus could prolong the duration of treatment (predictor). However, in the end of the study patients altered their sense of coherence (outcome variable) towards normality values as a result of the therapy [5].

Saliva cortisol in healthy persons has straight downward slopes during daytime. A more negative stress response is reflected by a lower saliva cortisol slope and is an indicator of accumulated physiological and psychosocial stress [32]. A lower slope associated with too high or too low muscle palpation grade was seen in our study. An increased slope of saliva cortisol belonged for the most part to the group with a somewhat increased muscle palpation grade. An increased slope may represent the first phase of the body trying to compensate for stress while a lower slope represents chronic stress and/or exhaustion [33]. Saliva cortisol in the IBS patients changed during treatment; both the lower and the increased slope approached the slope of the controls.

From the SOFT subtype study, it seems the D-IBS patients differ from the other subtypes. D-IBS patients, with a higher proportion of men, scored less psychological symptoms, less body awareness, but scored a better sense of coherence and showed higher C-peptide values in blood. They were not aware of their lack of body awareness and did not realise entirely their depreciated state of health. Overall, they showed themselves to be ambitious persons, and there were more men compared to the other subtypes. Also, many of them were in the middle of their professional careers. The higher C-peptide and triglyceride levels may be parts of a metabolic syndrome, which is known to correlate with psychosocial stress possibly indicating an adrenergic onset that could represent an unconscious mental stress. When studying predominant symptoms in IBS and correlation with autonomic nervous system deviations it was found that the D-IBS subgroup was associated with adrenergic nervous system malfunctions. Prolactin may be important in the process of coping with stress and traumatic experience and it has been reported that active soldiers have lower prolactin values. A strong correlation has been shown between prolactin and alexithymia especially the item "difficulty to identifying feelings." The D-IBS group in our study had both lower prolactin values and lower body awareness [6].

The C-IBS and A-IBS patients are characterised by their psychological symptoms, with more depression and anxiety and with impaired sense of coherence. They express higher degree of body awareness compared to the D-IBS group. Emotional strain and an increased vagal tone

are correlated to increased levels of prolactin which could be one reason for the measured prolactin increase in the C-IBS group [6]. Although the sample size of the present study of subtypes is fairly modest, all subjects were recruited from patients with rather advanced IBS disease with several years' history of symptoms. Since they were referred from various doctors from different clinics they could represent a general population of IBS patients.

According to Gonsalkorale et al. [34], IBS has gained the reputation of being somewhat unrewarding to treat. As a consequence, many physicians although performing thorough examinations ensure their patients that there are nothing seriously wrong but offer no remedy to treat the condition. Many patients, especially those who have had their troublesome symptoms for a long time have lost their confidence and feel like "failures" with no hope when they enter our study [1]. Dysregulation of the autonomic nervous system and the emotional system can involve reactions in which the distress inside the body is not recognised because of location or due to low body awareness. This may be one explanation why patients have difficulty identifying their symptoms and can contribute to the fact that there might be misunderstandings between the IBS patients and healthcare providers [1, 3–6]. Another possible explanation could be the two different views of IBS, as mentioned earlier; when the treating doctor views IBS as a strict gastrointestinal disease he will be more apt to a reassuring approach. On the other hand, the doctor who embraces the view that IBS is a more complex disorder will refer the patient to a competent body-mind therapist or a multi-professional team offering a more psychosomatic therapy.

As IBS patients express a great deal of symptoms, they often find themselves somewhat lost within the normal healthcare system with its specialisation. For example, within the field of gastroenterology, some hospitals have various departments for the upper and lower gastrointestinal tract. This involves a great risk that the patients with multiple symptoms and multiple diagnoses are inadequately treated since their cases fall in between different categories [1, 3]. When practising a team approach to management with a graduated treatment programme, extremely high levels of satisfaction in patients and in staff can be achieved [34]. As we saw in the epidemiologic study of 50-year-old women, gastrointestinal symptoms were common in that population and showed a strong correlation to psychosomatic symptoms. Therefore, a more psychosomatic attitude in diagnosis and treatment of these women might have great impact on their well-being.

Many authors stress the importance of a thorough examination of IBS patients with their many symptoms after having excluded important somatic diseases. In the SOFT project, the comprehensive body examination gave us a hint about the treatment duration needed for the patient to improve. When IBS patients are receiving too short treatment duration, the patient may experience relief from some symptoms, but with the underlying distress still present, they will remain untreated and symptoms can be replaced by other symptoms (known as a symptom shift). In these cases, there is a risk that the patients will continue to seek treatment elsewhere and thus get caught between specialities and might never come to understand their internal body mind communication [17]. Patients who need longer treatment periods could be patients that can be defined as non-responders, males with D-IBS, fibromyalgia patients or those who have severe social stress; all factors are likely to cause detraction from the efficacy of the treatment.

http://dx.doi.org/10.5772/66373

Hypnotherapy, mindfulness treatment and body awareness therapy will almost certainly improve the patients' coping skills in various life situations. These methods involve the body by normalising tension, and they also emphasise the importance of being present in the moment. It is only in the present time that you can access and influence the experience and behaviour patterns, which are established in the nervous system [35]. A plausible consequence of this is that consciousness of the "here and now" is very substantial for changing the processes and should be the focus of therapy from the beginning. The habits of non-optimal movement and tension patterns, whether due to chronic stress or other mechanisms, can become so established in the body that you are incapable of changing them on your own. These habits are integrated as part of the self-perception and can be unconsciously hidden together with other suppressed feelings and tensions. To deal with ingrained muscular pattern, the patients must be re-educated and trained until the new patterns feel at least equally familiar as the old ones [36]. Paradoxically, patients need body awareness training to be aware of their tensed bodies before they can start to change and in a deeper sense learn to apply the body awareness therapy [1, 3]. The body awareness technique can thus be used to take control of unwanted symptoms and to reduce psychological distress and improve coping skills [1, 3].

9. Conclusion

From the SOFT project it can be concluded that IBS patients, in comparison with healthy controls have higher degree of body tension and gastrointestinal and psychological symptoms and also biochemical stress markers compared to healthy controls. Our treatment with body awareness therapy reduced these parameters and helped these multi-symptomatic patients feel better. This treatment can be practised for all types of IBS, and since it is performed in groups it is therefore suitable for treating quite a large number of patients at the same time. Our structure of treatment in the SOFT study, combining bodily exercises with theoretical reflections and including time for reflexions in the group, has proven to be beneficial for our patients.

The future health problems are generally considered to be of psychosomatic or psychosocial nature. This should cause us great concern, and we need a new approach for these multi-symptomatic patients and not least the IBS patients. Good teamwork is important during this new approach to treat multi-symptom patients. Therapists/physicians should talk to each other about IBS cases and/or work in a team to ensure that any real or potential problem that may arise can be promptly resolved. When planning effective treatment strategies it is of utmost importance to understand the diversity of this syndrome. Thus, treatment should be aimed at body-mind intervention after having performed a good evaluation survey of each patient both by a gastroenterologist and a body-mind therapist. The duration of treatment should be individually adjusted. Following the same patients systematically, before, during and after treatment seems to be the best method of choice at present. These patients need a psychosomatic approach which is emphasised from our epidemiologic study. Applying a more psychosomatic attitude when diagnosing and treating these patients will give a more optimal caring and in the long run lowered medical healthcare costs.

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