

# Functional gastrointestinal disorders: cognitive-behaviour treatment

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## Purpose of review

The present paper reviews recent cognitive-behaviour treatment trials in functional gastrointestinal disorders. One striking finding is that research activities in this field have been very limited in the past few years. For that reason, the focus of this review was extended to the period 1998 to May 2002, and the reasons for insufficient research into functional gastrointestinal disorder treatments are discussed.

## Recent findings

Findings suggest good efficacy for various intervention strategies, e.g. relaxation techniques, stress management, contingency management and cognitive-behaviour therapy, in combination with medical treatment. However, the empirical basis is very limited because of small sample sizes, a small overall number of psychological treatment trials, and the non-standardized measurement of gastrointestinal symptoms. Deficits may partly be associated with special characteristics of the concept of functional gastrointestinal disorders, according to the revised Rome criteria.

## Summary

Different types of cognitive-behaviour treatments seem to be effective in functional gastrointestinal disorders. However, further empirical trials, standardized and comparable outcome measures, and specific interventions for functional gastrointestinal disorders are required to obtain more exact knowledge on the efficacy of cognitive-behaviour therapy and treatment mechanisms.

## Keywords

competing diagnostic concepts, indistinct boundaries of functional syndromes, insufficient research, lack of standardized instruments

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## Abbreviations

<b>BSSS</b>	Bowel Symptom Severity Scale
<b>CBT</b>	cognitive-behaviour treatment
<b>DSM-IV</b>	Diagnostic and Statistical Manual of Mental Disorders IV
<b>FGD</b>	functional gastrointestinal disorder
<b>FGS</b>	functional gastrointestinal symptom
<b>IBS</b>	irritable bowel syndrome
<b>ICD-10</b>	International Classification of Disease 10
<b>SFD</b>	somatoform disorder

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## Introduction

Functional gastrointestinal disorders (FGDs) are very common, and represent a major challenge to clinical research and health services. Up to 70% of the general population suffer from persistent gastrointestinal symptoms without structural or biochemical explanation [1]. The economic consequences for the general healthcare system are enormous. Medical standard therapies such as drug or diet treatments are widely ineffective in the long run [2,3]. The absence of effective medical treatments has stimulated trials on psychological therapies [cognitive-behaviour treatment (CBT) and psychodynamics], in particular for irritable bowel syndrome (IBS), over the past two decades. Although these were reported to be effective, they have been criticized repeatedly for methodological shortcomings, and advanced study designs have been demanded [4,5].

## Cognitive-behaviourally oriented treatment trials since 1998

During the past few years, only a handful of CBT trials were published for FGDs. Fernandez *et al.* [6] compared the effects of stress and contingency management in a sample of 90 outpatients who had not responded to previous medical treatment. The sample was subdivided into two experimental (stress management, contingency management) and two control conditions (medical standard treatment, symptom monitoring). Subjects underwent 12 individual sessions specific for each condition. Stress management consisted of progressive muscle relaxation, problem-solving, self-instructions, and coping with experiences related to the onset or worsening of the symptomatology, whereas contingency management was aimed at changing problematical behaviour using self-observation, shaping, and stimulus control techniques. The treatment outcome was measured by behavioural interviews and symptom diaries. Subjects in both experimental conditions experienced substantial improvements of characteristic gastrointestinal symptoms at the end of treatment and 12-month follow-up, whereas the changes of the control conditions were only small and insignificant. Contingency management was distinctly superior to stress management.

Vollmer and Blanchard [7] compared 32 patients with IBS assigned to three different conditions: individual cognitive therapy, cognitive therapy in small groups, and symptom monitoring waiting-list control. Both cognitive treatments were significantly superior to the control

condition regarding functional gastrointestinal symptoms (FGSs) reduction, and effects were maintained in responders at the 3-month follow-up, whereas no difference was found between the small group and individual therapy conditions.

Heymann-Mönnickes *et al.* [8] combined medical treatment and multicomponent CBT. Twenty-four outpatients of a tertiary referral centre were assigned to either standard medical treatment or the combination therapy. Cognitive-behavioural interventions consisted of information on normal gastrointestinal functioning and FGDs, shaping of illness model, progressive muscle relaxation, cognitive coping strategies, problem-solving, and social skills training. The gastrointestinal symptom outcome was investigated by symptom diaries and physiological measures. Depression, anxiety, irrational beliefs, health-related locus-of-control, subjective overall well-being, and quality of life were evaluated as concomitant aspects of FGDs. Symptom reductions were significantly greater in the experimental than in the control condition, and remained stable during 6 months of follow-up, whereas no changes of rectovisceral perception were detected. Regarding further psychological characteristics, significant improvements in quality of life, subjective overall well-being, and internal locus-of-control were found only for the experimental group but not for the controls.

In a recent minor treatment trial, Keefer and Blanchard [9<sup>\*</sup>] investigated the effects of relaxation therapy ('relaxation response meditation') in a sample of 16 primary care patients. Subjects were subdivided into a treatment and a waiting-list group treated afterwards, which served as the control condition. Treatment consisted of six 30-min weekly group sessions. Between the sessions, patients had to practice twice daily. Symptoms were recorded in symptom diaries and rated by the patients on a 0 to 4 scale with respect to severity. In addition to that, axis-I disorders according to the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) [10] were investigated, and changes in bodily symptoms and general well-being were determined by additional self-rated items. The treatment condition was superior to the waiting list group, and significant improvements in four gastrointestinal symptoms (belching, flatulence, bloating, and diarrhoea) were observed at the 3-month follow-up.

Boyce *et al.* [11] conducted a pilot study investigating the effects of eight sessions of cognitive-behaviour therapy in eight subjects. Bowel symptoms were measured using a new self-rating instrument not evaluated at present, the Bowel Symptom Severity Scale (BSSS). In this instrument, each bowel symptom is rated on three separate dimensions: frequency, distress and disability. Significant improvements in bowel symptoms were

found for distress and disability ratings, but not for symptom frequency.

### Preliminary conclusions

Altogether the number of studies published during the past 20 years is very small and even seems to have decreased in the past few years. Conclusions are limited by small sample sizes and methodological concerns [4,5]. Convergent findings suggest that various cognitive-behavioural interventions and therapies are effective in FGD treatment. Furthermore, the outcome for CBT conditions was mostly reported to be stable at follow-up assessment and superior to control conditions. The recent studies from the period reviewed mainly confirm these findings, but new aspects are very limited. Moreover, some psychodynamically oriented controlled trials of comparable treatment duration and intensity, as well as hypnotherapy, were reported also to be effective [12,13]. It is not known whether CBT is superior to other forms of treatment in FGDs.

Certain salient questions have been insufficiently addressed until now: First, most treatments investigated seem to be effective, but the dimensions and psychological mechanisms of the changes remain unclear. Second, co-existing treatment forms (e.g. psychodynamic-interpersonal versus cognitive-behavioural), methods (e.g. stress management versus cognitive-behavioural therapy), and settings (e.g. individual versus group treatment) have been insufficiently compared for differential effects, and distinct findings such as those of Fernandez *et al.* [6] remain very rare.

Third, the Rome-II classification [14,15] differentiates between more than 20 FGDs, but CBT trials have focused mainly on the principal category IBS, without considering additional FGSs and FGDs. Furthermore, associations with co-morbid functional or somatoform symptoms located in other parts of the body have been widely neglected until now.

### Problems for cognitive-behaviour treatment evaluations

Regarding concepts and research on FGDs in general, several reasons may be responsible for limitations and shortcomings in CBT research.

#### Changes in classification systems

The revised version of the Rome criteria (Rome-II) was not created until 1999. Studies conducted before that date were based either on the Manning criteria [16] or the first version of the Rome criteria, both containing indistinct symptom definitions and thresholds for FGDs. This may have prevented more intense research and may be of concern for the validity of studies published formerly.

### Classification concept

The Rome classification is based on the Manning criteria, which were originally developed to separate functional from organic symptoms. Although additional medical examination is considered to be indispensable to exclude organic disease, the Rome classification has remained a medical approach mainly oriented at diagnostic requirements of internal medicine. For psychological research, two basic characteristics of the Rome approach may be of concern. First, they are very differentiated regarding disorder categories, although different FGDs do not indicate distinct entities characterized by specific aetiologies or prognoses. On the other hand, additional dimensional aspects are neglected by the categorical approach. FGDs can either be present or not, but the number, frequency, or severity of gastrointestinal symptoms beyond the diagnostic cut-off are rarely considered. However, diagnoses should indicate patients to whom the same specific interventions and treatment conditions apply. For the purpose of psychological treatment, more inclusive diagnostic categories considering dimensional aspects would be useful.

### Competing classification models

Physically unexplained gastrointestinal symptoms can be diagnosed as somatoform autonomic dysfunction, undifferentiated somatoform disorder (SFD), or as part of an SFD according to DSM-IV and the International Classification of Disease 10 (ICD-10) [10,17] just as well. SFD and Rome classification concepts co-exist but are incompatible. As differentiating criteria are not available, the diagnostic concept applied depends on the professional background of the research groups. As SFDs are explicitly defined as mental and behavioural disorders by DSM-IV and ICD-10, this concept might be preferred in psychological and psychosomatic research. Most trials on SFDs include patients who are partly or even primarily suffering from gastrointestinal symptoms. As a consequence, research on treatment strategies for medically unexplained gastrointestinal symptoms is represented not only in FGD trials but also in SFD treatment evaluations. One advantage of the SFD definition according to DSM-IV and ICD-10 is that it considers not only physical symptoms but also concomitant psychological aspects such as psychosocial disability, illness behaviour, distress and health beliefs. However, standard symptom lists of SFDs are incomplete with respect to gastrointestinal complaints. Furthermore, a distinct category for monosymptomatic gastrointestinal disorder comparable to pain disorder or conversion disorder, e.g. 'somatoform gastrointestinal disorder', does not exist.

### Insufficient boundaries between functional syndromes

Various functional syndromes, such as IBS, chronic fatigue syndrome, fibromyalgia and others, have been

conceptualized and investigated separately for the past decade. However, the boundaries between them are very indistinct [18]. Nimnuan *et al.* [19\*\*] investigated symptoms of 13 different functional somatic syndromes including IBS in a sample of 550 individuals. On the basis of factor-analytic dimensions they were not able to identify independent entities of functional syndromes. Hiller *et al.* [20\*\*] searched for a gastrointestinal subgroup within the SFDs characterized by distinct clinical and associated features. As such, a subgroup could not be identified, and the authors [20\*\*] concluded that general mechanisms of somatization are predominant in gastrointestinal disorders. Furthermore, specific intervention strategies for FGD have not been developed until now. FGD treatment in most CBT trials is very similar to other somatoform, functional and psychophysiological disorders (e.g. pain disorder, tinnitus, hypochondriasis). It is a very fundamental question, whether FGDs require specific CBT strategies or should be treated as SFDs, which in most cases include gastrointestinal symptoms. At present, distinct characteristics of FGDs justifying differential treatment indication are questionable. For that reason, a common concept of functional/somatoform symptoms would be useful.

### Lack of standardized instruments

Standardized instruments for dimensional measurement of the total spectrum of FGSs are not available. However, such instruments (based either on self-ratings or expert ratings) are a common standard and basic requirement for evaluation studies in mental disorders, including SFDs and many functional syndromes. In most FGD treatment trials, symptom diaries were used instead and were even suggested as the 'gold standard' [21]. In their pilot study, Boyce *et al.* [11] presented a new instrument not evaluated at present, the BSSS, which may basically match the problem of standardized dimensional assessment. Symptoms are rated by frequency, distress and severity and are independent from diagnostic categories. As a certain restriction, the BSSS is limited to bowel symptoms instead of covering the total spectrum of FGSs.

### Conclusion

The small number of CBT evaluations available until now can be explained by problems partly inherent in the concept of the Rome criteria and shortcomings in the psychological methods and intervention strategies for FGDs. Basic requirements for fruitful future CBT trials are the development of standardized dimensional assessments, the extension of the narrow FGD focus, and the identification of further specific pathophysiological mechanisms that may serve as a basis for specific intervention strategies. Evaluation studies conducted during the past 5 years indicate that structured CBT programmes might be a very effective treatment for

FGDs. However, evidence is still very incomplete as a result of the limitations discussed and needs to be improved significantly to establish CBT as a standard treatment for FGDs.

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