

Review article

Mind–body therapies for functional bowel disorders—A review of recent clinical trials[☆]

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Abstract

Introduction: Functional bowel disorders (FBDs) significantly affect a person's daily life; however, because their diagnosis is mostly based on symptom presentation, time to diagnosis is long. This delay in diagnosis remains true even when other methods, such as biochemical parameters, immunogenic and inflammatory markers, are used to differentiate the type of disorder. As treatment approaches are mainly symptom-based and often result in suboptimal outcomes, mind–body therapies may offer benefits either used alone or in combination with pharmacological treatments.

Methodology: Thus, the purposes of this article are to: (1) describe the scientific knowledge based on currently available clinical trials of mind–body therapies for FBDs, (2) examine potential benefits of using such therapies and, (3) provide recommendations regarding their clinical application in the treatment of FBDs. The literature search covered the last decade from June 2002 to June 2012 and resulted in a total of 19 original research articles that met the inclusion criteria. The four common mind–body therapies, which include yoga, hypnotherapy, cognitive behavioral therapy, and biofeedback, were examined in this article.

Conclusion: The heterogeneity of clinical study designs as well as the wide disparity in defining primary outcome variables often limits the comparison of studies on the same mind–body therapy. Overall findings of these studies were promising, but not conclusive, and further recommendations for the research direction of mind–body therapies are proposed.

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Keywords: CAM; Functional bowel disorders; Hypnotherapy; Mind–body therapies; Yoga

Introduction

Functional bowel disorders (FBDs) represent a significant portion of gastrointestinal disorders with a high prevalence estimated in the range of 15–35% of adults [1,2]. The classification and diagnosis of FBDs is based on symptom representation and has been classified by the Rome foundation into irritable bowel syndrome (IBS), functional bloating, functional constipation, functional diarrhea, and unclassified FBDs [1]. The most

recent Rome III criteria define FBDs as a subgroup of functional gastrointestinal disorders with onset of symptoms at least 6 months prior to diagnosis and other diagnostic criteria active for 3 months [3]. In spite of differential diagnosis and classification, treatment for FBDs is primarily based on patient-specific symptoms because of their unclear pathophysiology as well as significant overlap in symptoms among the different types.

While previous classifications were based on the presence of symptoms, the new classification indicates that pathophysiological parameters such as morphological, biochemical, and immunogenic changes can be evaluated for the diagnosis of FBDs [4]. For instance, there is significant indication that serotonin transmission and receptors, which are located in the intestinal tract and central nervous system, as well as immunogenic responses, inflammatory markers, and preexisting conditions, contribute to the development of IBS [5–7]. In addition, the development of functional constipation and diarrhea—hallmarks of IBS—may result from an imbalance of

Abbreviations: FBD, functional bowel disorder; IBS, irritable bowel syndrome; 5-HT, serotonin; CAM, complementary and alternative medicine; CBT, cognitive behavioral therapy; GI, gastrointestinal.

[☆] Editor's Choice.

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cholinergic and serotonergic nerve transmission and receptor dysfunction in the enteric system [8]. Although more research is needed, new ways of identifying and classifying symptoms have led to more frequent and accurate diagnoses of IBS in the US [9].

More frequent diagnoses, however, do not correlate to better pharmacological treatment approaches, which have demonstrated limited success due to the pain sensitivity that often accompanies other symptoms. For example, laxatives and the off-label use of a serotonin 5-HT₄ receptor agonist, tegaserod, are predominantly used for constipation [10] while opioid agonists such as loperamide and diphenoxylate and a serotonin 5-HT₃ antagonist (i.e., alosetron), may be used for managing diarrhea [5]. The reduction of bloating and gas formation—other frequent symptoms of FBDs—can be achieved with surfactants and changes in lifestyle and diet restrictions [9]. Smooth muscle relaxants, tricyclic antidepressants, and selective serotonin reuptake inhibitors can also be used for general symptom relief [5]. In sum, despite the many pharmacological approaches that are available and because of the variety of often conflicting symptoms, there is no silver bullet to alleviate conditions associated with FBDs.

Because pathophysiological as well as psychosocial components affect symptom severity of FBDs [1], one of the solutions may be the use of mind–body therapies, which are defined as “focusing on the interactions among the brain, mind, body, and behavior, with the intent to use the mind to affect physical functioning and promote health” [11]. Under this definition, yoga, Tai chi, meditation, hypnotherapy, deep-breathing exercises, progressive relaxation, and acupuncture, are mind–body therapies as they serve to raise awareness of body sensations and engage in self-regulation of body processes in order to alleviate symptoms [12,13]. One study pointed out that women with FBDs have significantly lower expectations of success and benefits from psychological interventions such as cognitive behavioral therapy or yoga than from taking oral medications although psychosocial factors predominantly determined improvement [14].

Although historically these therapies have not been popular, recent years have shown an increase in interest and use: indeed, the 2007 National Health Interview Survey results showed that nearly 4 out of 10 US adults use some form of complementary and alternative medicine (CAM) with a rise in mind–body therapies, specifically deep-breathing exercises (12.7%), meditation (9.4%), and yoga (6.1%) [15]. Despite the rise in general popularity, CAM was only used by 1.2% of US adults for stomach and gastrointestinal disorders [15], indicating that there is an opportunity for CAM to play an increased role in the treatment of FBDs, particularly if patients are as receptive to using it as recent surveys have shown. When Harris and Roberts asked 256 patients with IBS about the acceptability of certain treatments, they found that tablets were most acceptable (84%) followed by life-style changes (82%), yoga (77%), stomach cream (68%), homeopathy (65%), heat pad (64%) and hypnotherapy (64%) [16]. Another study revealed that 50% of IBS patients are turning to CAM because of low satisfaction levels with conventional treatment, and that hypnotherapy and cognitive behavior therapy (CBT) were the most clinically effective, CAM treatment

approaches [17]. However, because these approaches have limitations that mind body therapies lack (e.g. hypnotherapy depends upon the “hypnotizability” of a patient, while CBT depends upon availability and patient preference) the latter represents a powerful treatment for patients with FBDs. Thus, the purposes of this article are to: (1) describe the scientific knowledge based on currently available clinical trials of mind–body therapies for FBDs, (2) examine potential benefits of using such therapies, and (3) provide recommendations regarding their clinical application in the treatment of FBDs.

Methodology

Complementary and alternative medicine (CAM) can be categorized into five areas according to the National Center for Complementary and Alternative Medicine (NCCAM), National Institute of Health (NIH). These are (1) Alternative Medical Systems, (2) Biological Based Therapies, (3) Mind/Body Therapies, (4) Manipulative and Body Based Therapies, and (5) Energy Therapies. This article will review current research regarding the most commonly used mind–body therapies for FBDs in the US, which are yoga, hypnotherapy, cognitive behavioral therapy, and biofeedback [18]. Acupuncture and massage therapy were excluded because the former is categorized as an “alternative medical system” and the latter within “manipulative and body based therapies”.

Inclusion criteria of the literature search were (1) English language only, (2) articles published between June 2002 and June 2012, (3) Medline, PsycINFO, EBSCO, Alt-Health Watch, CINAHL, and PubMed databases, and (4) the search terms “mind–body therapies”, “yoga”, “hypnotherapy”, “cognitive behavioral therapy”, or “biofeedback”, in combination with “functional bowel disorders”, “irritable bowel syndrome”, “constipation”, “functional abdominal pain”, or “diarrhea”. This resulted in retrieval of a total of 518 references. Of those, review articles, protocols, case reports, duplicated publications, and studies with less than 20 patients were excluded for review. Finally, 19 original research articles met the review criteria (Fig. 1). The 19 original research articles for review included randomized and non-randomized as well as non-blinded and single-blinded studies because the nature of mind–body interventions often do not allow for blinding (Table 1).

Results

Yoga

Yoga is a mind–body therapy with roots in ancient Indian philosophy that combines physical postures (asanas), breathing techniques (pranayama), and relaxation or meditation in order to balance the mind and body [19]. It has shown benefits for a variety of acute and chronic disorders [20–23] and because of this, is presently being used by 10% of IBS patients for symptom management [18].

Although clinical studies involving yoga and patients with IBS are few, there is some evidence to suggest a positive influence of yoga on both pain and anxiety. For example, one study

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