



Acceptance and commitment therapy for the treatment of irritable bowel syndrome and inflammatory bowel disease: a narrative review

Sara H. Marchese^{1#^}, Jessica P. Naftaly^{2#^}, John Pandolfino^{1^}

¹Division of Gastroenterology & Hepatology, Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, IL, USA;

²Division of Gastroenterology and Hepatology, Department of Internal Medicine, University of Michigan, Ann Arbor, MI, USA

Contributions: (I) Conception and design: All authors; (II) Administrative support: None; (III) Provision of study materials or patients: SH Marchese, JP Naftaly; (IV) Collection and assembly of data: SH Marchese, JP Naftaly; (V) Data analysis and interpretation: SH Marchese, JP Naftaly; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

[#]These authors contributed equally to this work as co-first authors.

Correspondence to: Sara H. Marchese, PhD. Division of Gastroenterology & Hepatology, Department of Medicine, Northwestern University Feinberg School of Medicine, 676 N. St. Clair St., Suite 1400, Chicago, IL 60611, USA. Email: sara.hoffman@nm.org.

Background and Objective: Cognitive behavioral therapy (CBT) is a common treatment modality for patients with irritable bowel syndrome (IBS) and inflammatory bowel disease (IBD). CBT may not be a good fit for all patients and some may instead benefit from an acceptance and commitment therapy (ACT) approach. This narrative review presents evidence for the use of ACT in adult patients with IBS or IBD. The authors also suggest instances in which patients with IBS or IBD may benefit from ACT and discuss future directions of research.

Methods: Between August 2023 and January 2024, databases such as Google Scholar, institutional libraries, and PubMed were used to review the literature on ACT in patients with IBS and IBD. A variety of search terms were included. Non-English, pediatric, and studies that did not employ a full ACT protocol were excluded.

Key Content and Findings: ACT for IBS studies typically utilized a self-help book or a one-day workshop intervention, with results indicating reductions in IBS and mood symptoms and improvements in quality of life. Within IBD, three randomized controlled trials (RCTs) tested the impact of ACT, two of which found reductions in stress, depression, and anxiety symptoms.

Conclusions: Despite the limited number of studies testing a full ACT protocol in patient populations with IBS or IBD, results indicate potential efficacy in managing not only symptoms, but also facets of quality of life. Future studies should utilize robust experimental designs and comprehensively test the effectiveness of ACT in IBS and IBD patient populations with both process and outcome measures.

Keywords: Acceptance and commitment therapy (ACT); irritable bowel syndrome (IBS); inflammatory bowel disease (IBD); psychogastroenterology

Received: 23 January 2024; Accepted: 07 May 2024; Published online: 24 June 2024.

doi: 10.21037/tgh-24-10

View this article at: <https://dx.doi.org/10.21037/tgh-24-10>

[^] ORCID: Sara H. Marchese, 0000-0002-2753-7989; Jessica P. Naftaly, 0000-0003-2642-9035; John Pandolfino, 0000-0002-4993-9559.

Introduction

Irritable bowel syndrome (IBS) and inflammatory bowel disease (IBD)

IBS is a disorder of brain-gut interaction (1,2) that involves frequent abdominal pain related to either bowel movements themselves or is associated with alterations in the consistency of stool or frequency of bowel movements (2,3). Prevalence of IBS is estimated to be about 5% in the United States (3-5). IBD consists of Crohn's disease (CD) and ulcerative colitis (UC) and is characterized by inflammation of various parts of the gastrointestinal (GI) tract typically in recurrent flares (6). IBD is an organic disease and affects approximately 0.3% of western countries with increasing prevalence (6,7). IBS and IBD commonly co-occur, with about 37% of patients diagnosed with quiescent CD (8) and nearly a third of patients with UC in remission also reporting symptoms of IBS (8,9).

Despite their diagnostic differences, both conditions can significantly impact a patient's quality of life (QOL), including their social and emotional well-being. For example, about 23–33% of patients with IBD also report diagnoses of anxiety and/or depression, with the prevalence of sub-clinical anxiety and depressive symptoms being even higher among these patients (10,11). Ongoing symptoms of anxiety and depression in patients with IBS and IBD can significantly impact GI symptoms and treatment course (5,12). The American Gastroenterological Association also recently published information about tangible current barriers to patients receiving appropriate IBD-related care; some of these barriers include the high out-of-pocket costs of biologic drugs that can treat IBD, gaps in insurance coverage for disease management, and general inaccessibility of care with regard to finding gastroenterologists that specialize in the management of IBD long-term (13). These barriers influence disease activity, potential remission, and patient QOL (13). IBS also poses a high societal cost, both in terms of overall yearly costs to the healthcare system (estimated as high as \$7,547 per patient in the United States in some studies), and with regard to work absences due to IBS symptoms (14).

Given the immense physical and psychological impact of both IBS and IBD, patients may be referred to a GI Psychologist for behavioral health treatment to help manage GI symptoms and the psychosocial impact of the GI condition. Historically, cognitive behavioral therapy (CBT) has been a popular behavioral health treatment modality for

patients with IBS (15-17) and IBD (18-20). More recently, third-wave behavioral therapies like acceptance and commitment therapy (ACT) are also being studied in these patient populations.

Purpose of narrative review

The goal of the current narrative review is to discuss the concept of ACT and the use of ACT in adult patients with IBS and IBD. In doing so, we also briefly provide an overview of CBT for IBS and IBD as there are more empirical studies on the use of CBT for IBS and IBD (17,20) compared to ACT. This paper examines the evidence supporting the use of ACT for IBS and IBD, when patients may benefit from ACT, and gaps in the literature on the use of ACT for this patient population.

Overview of CBT

CBT, developed by Aaron Beck, involves examining the relationship between one's thoughts, feelings, and behaviors (21). Two common CBT techniques are cognitive restructuring and behavioral experiments. Cognitive restructuring is an exercise in which patients attempt to challenge or change their thoughts based on the evidence that supports or refutes the thoughts they have about a situation (21). The goal of cognitive restructuring is to arrive at a re-structured thought that is more balanced and flexible based on factual evidence. Behavioral experiments involve testing one's thoughts through behaviors (21). Challenging automatic thoughts and the use of behavioral experiments may change one's emotions or emotional intensity, which can further help with coping (21). CBT is effective for a variety of mental health conditions (i.e., depression and anxiety) and can be helpful for physical health conditions such as chronic pain (21).

For GI conditions such as IBS, multiple randomized controlled trials (RCTs) and systematic reviews support the use of CBT for reducing GI symptoms and improving QOL (15,22,23). CBT can help with reducing IBS symptoms, decreasing avoidance, and illness specific cognitions (22,24,25). Though there is more evidence for CBT helping to decrease IBS symptoms, it is possible that CBT could also help with improving IBD symptoms, coping (18,19), health-related QOL [HRQoL; (26,27)], symptoms of depression or anxiety (18,26), catastrophizing (26), and visceral sensitivity (26). Given an overlap between patients with IBD also meeting

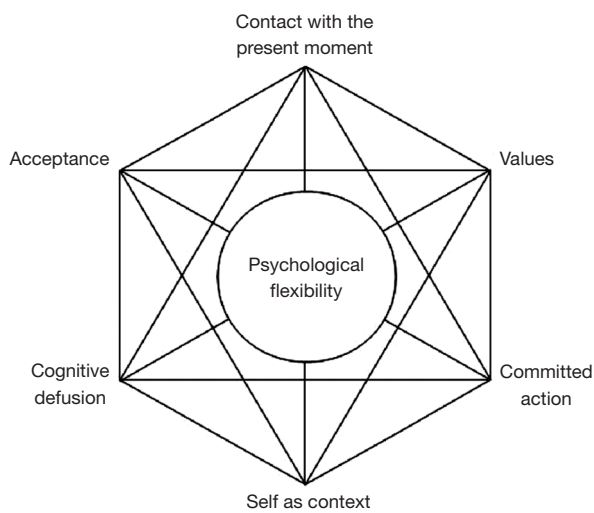


Figure 1 ACT hexaflex. Copyright Steven C. Hayes. Used by permission. ACT, acceptance and commitment therapy.

criteria for IBS, it is plausible that symptoms in these patients could also improve with CBT (28).

CBT for GI conditions (IBS and IBD) works by changing disease specific negative automatic thoughts and disease specific avoidance which may reduce physical GI symptoms and enhance one's QOL (17). Patients with GI conditions often present with hypervigilance of physical GI symptoms which can contribute to a fear of GI symptoms and behavioral avoidance (17). Patients may worry about having access to a bathroom, which then becomes a stressor, further increasing negative cognitions and emotions, sympathetic nervous system activation, and avoidance (17). While CBT for non-GI conditions may focus on general cognitions and behaviors, research suggests that CBT for IBS is most effective when there is a focus on GI specific cognitions and anxiety (25). CBT for IBS and IBD is structured similarly to CBT for anxiety and depression, which includes psychoeducation, relaxation strategies, cognitive restructuring, behavioral experiments, and problem solving (17,26). Though there are more empirical studies on the use of CBT for patients with IBS or IBD in decreasing GI symptoms and enhancing coping, like most treatment strategies, not all treatment strategies will work for every patient. ACT is another behavioral health treatment that may be a good option for patients.

What is ACT?

ACT is a third-wave behavioral therapy based on relational

frame theory and was first developed in the 1980s by Steve Hayes (29,30). ACT operates via a series of interdependent principles called a hexaflex (29-31) (see *Figure 1*), which center around the construct of psychological flexibility, or the ability to endure and adapt to changes in circumstances and move toward valued actions while remaining focused on the present moment (32). Psychological flexibility is essential for patients to achieve all aspects of the hexaflex within ACT (31). Acceptance is also a central piece of ACT. Importantly, ACT postulates that “acceptance” does not mean condonement of difficult circumstances, but rather acknowledgement and openness toward the full range of human thoughts and emotions (30). Other components of the ACT hexaflex also include contact with the present moment (i.e., mindfulness), cognitive defusion, self-as-context, taking committed action, and values (33).

In ACT, patients are encouraged to become “unstuck” from thoughts via cognitive defusion, with the goal of reducing the power that negative thoughts and/or emotions can hold which contribute broadly to increased suffering (29,33). Cognitive defusion typically seeks to create space between an individual and their thoughts or emotions, recognizing that thoughts and emotions are states of being or thinking, rather than indisputable facts (29,33). This may involve aspects of visualization, by which a patient will visually create space between themselves and a thought by ascribing attributes to it (e.g., color, size, saturation, shape), or by metaphorically placing the thought on a leaf on a flowing stream in their mind as a way to dilute the perceived power of a thought (29,33).

Values identification is also a central aspect of ACT. Early in treatment, patients are typically asked to identify values for various life domains (e.g., health, family, work). In conjunction with their mental health provider, patients are asked to illustrate gaps between current behaviors and whether they are living in accordance with their identified values (29). Patients are then encouraged to use values to guide behavior and decision-making (29). Patients are also taught mindfulness, which involves connecting with the present moment without judgement (34). As patients learn mindfulness and cognitive defusion, they are encouraged to take “committed actions” that allows them to live a life in accordance with these established values (33).

Differences between ACT and CBT

Though ACT builds off principles of CBT, mindfulness, and behaviorism, there are key differences between ACT

Table 1 Search strategy summary

| Items | Specification |
|----------------------------|---|
| Date of search | August 2023 to January 2024 |
| Databases/sources searched | Google Scholar, University of Michigan Library Database, Northwestern University Library Database, PubMed |
| Search terms used | Acceptance and commitment therapy and irritable bowel syndrome ACT and IBS “Acceptance and Commitment Therapy” and Disorders of Brain-Gut Interaction ACT and IBD Acceptance and commitment therapy and inflammatory bowel disease “Acceptance and Commitment Therapy” and “Crohn’s”/“Crohn’s Disease” “ACT” and “Crohn’s”/“Crohn’s Disease” “Acceptance and Commitment Therapy” and “Ulcerative”/“Ulcerative Colitis” “ACT” and “Ulcerative”/“Ulcerative Colitis” “ACT vs CBT in patients with IBS” |
| Timeframe | Up to January 2024 |
| Exclusion criteria | Studies not originally published in English, sole focus on mindfulness or “acceptance” without utilizing the full ACT protocol/hexaflex, pediatric studies |
| Selection process | J.P.N. and S.H.M. both independently searched all search terms above and added manuscripts that met inclusion criteria to review list. Any disagreements in selection were discussed and mutually resolved among the authors |

ACT, acceptance and commitment therapy. IBS, irritable bowel syndrome; IBD, inflammatory bowel disease; CBT, cognitive behavioral therapy.

and CBT. As previously mentioned, CBT focuses on challenging and changing thoughts and behaviors, while the purpose of ACT is to expand upon psychological flexibility (21,29). Unlike CBT, ACT does not focus on questioning and challenging the nature of thoughts (29). Instead, ACT emphasizes that being a human is difficult and that one’s responses to the full range of thoughts and emotions including the desire to control and avoid emotional experience can keep patients feeling “stuck” (29). ACT proposes that “experiential avoidance,” or a person’s tendency to limit unwanted experiences (e.g., emotions, thoughts, body sensations), explains much of human suffering due to its capacity to counterproductively increase distress (29,35). Though decreases in distress occur with ACT, the goal of ACT is not necessarily to decrease distress and suffering, but instead to create flexibility in one’s life and assist patients in living the life they want to live (29).

Methods of narrative review

The current review centers on the effectiveness of ACT in

adult patients with IBS and IBD, operationalized as either a reduction in GI symptoms, improvements in QOL, improvements in mood/anxiety, or process outcomes (e.g., increases in measured psychological flexibility). Of note, all studies identified in this review examined IBS and IBD diagnoses separately; that is, no co-occurring disorders were explicitly examined in the studies outlined below. Please see *Table 1* for the search strategy summary. We present this article in accordance with the Narrative Review reporting checklist (available at <https://tgh.amegroups.com/article/view/10.21037/tgh-24-10/rc>).

Results

ACT for IBS

As of 2020, ACT was rated as having level IV evidence for GI conditions (36). There are a few studies that have looked at the use of ACT for patients with IBS, most of which appear to have been conducted by Dr. Nuno Ferreira’s research group or studies that used aspects of their ACT for

IBS protocol (37). The main study by Dr. Ferreira's group included 56 patients who had IBS symptoms for the past 12 months without significant improvement in symptoms (38). The study assessed for IBS symptoms via the IBS Symptom Severity Scale (IBS-SSS), acceptance of IBS symptoms via the IBS Acceptance and Action Questionnaire (IBS-AAQ), QOL via the IBS Impact on QOL Scale (IBS36S), avoidant coping via the IBS Behavioral Responses Questionnaire (IBS-BRQ), and anxiety/hypervigilance via the Visceral Sensitivity Index (VSI) at the start of the study, pre-treatment, post-treatment, and at a 6 month follow up (38). The ACT for IBS treatment protocol included a one-day six-hour ACT intervention workshop lead by a clinical psychologist and participants used a self-help manual for two months after completing the workshop (37,38). Both the workshop and book covered similar topics including psychoeducation on IBS, mindfulness, and ACT based skills/interventions including mindfulness, defusion, creative hopelessness, values-identification, and values-based action (38). The self-help manual used was called "Better Living with IBS" and is currently published as a book (37). Metaphors and experiential exercises were used in both intervention formats and participants were given an audio recording of ACT exercises to assist with practicing ACT skills. Two follow up phone calls were made to participants by a clinical psychologist to assist participants with the self-help manual (38). The study found increases in acceptance of IBS, QOL, and decreases in IBS symptoms, avoidance, and health anxiety, all of which held at the six-month follow up (38). Approximately 20% of patients with IBS did not meet criteria for IBS at the end of the study and about 35% of patients with IBS reported a change in symptom severity (38), further suggesting that ACT may benefit patients with IBS.

In another study, Gillanders and colleagues gave the same ACT book and audio recordings (38) to 45 patients with IBS, though no workshop was included in this study (39). They used the same outcomes measures at the start of the study as Ferreira and colleagues with additional assessments at two months and six months (38,39). Participants were instructed to complete the self-help manual at their own pace but were encouraged to complete the manual within two months (39). Follow up phone calls were made during the first and second month by a research assistant to encourage completion of the book and provide clarification as needed (39). Gillanders and colleagues found a significant improvement in IBS severity, health anxiety, and IBS

acceptance (39) but no changes in avoidance behaviors and QOL. The researchers did not assess the number of exercises or the percentage of the self-help manual that was completed, though they hypothesized that participant engagement may have impacted the lack of changes seen in avoidance behaviors and QOL (39).

The only RCT on ACT and IBS that could be found assessed IBS symptoms in non-IBS patients, meaning that the patients were not formally diagnosed with IBS but scored high on the IBS Severity Index (Japanese Version) (40). Twenty-six participants were randomized to either the waitlist or the intervention ACT group. Similar domains were assessed compared to previous studies, with avoidance being measured by the AAQ-II, QOL via the Japanese version of the IBS-QOL, HRQoL being measured by the SF-36, depression symptoms were measured by the Beck Depression Inventory-II, anxiety symptoms were measured by the State-Trait Anxiety Inventory, cognitive fusion was measured by the Cognitive Fusion Questionnaire, and mindfulness was assessed through the Japanese version of the Five Facet Mindfulness Questionnaire (40). Assessment measures were completed pre-intervention, post-intervention, and at the two month follow up. The authors used a similar procedure as Ferreira and colleagues [2018] (38) with a 1-day ACT workshop and the use of an ACT self-help manual, though in the current study, they used a different ACT book due to "Better Living with IBS" not being available in Japanese (40). Participants completed 6 adherence quizzes regarding content in the self-help ACT book (40). The study found significant improvements in depression symptoms in the ACT group compared to the waitlist group, but no significant differences were noted in symptom severity and the outcomes of interest (40). The study had low power and the authors noted concerns with internal consistency (40). Similar to Gillanders and colleagues, Ita and Muto hypothesized that participant completion of the ACT manual was not sufficient to see changes in avoidance behaviors and QOL and that participants may have needed additional practice on the behavioral implementation of ACT skills (39,40).

The mechanism by which ACT may help patients with IBS may be due to acceptance of symptoms. Bowers and colleagues (41) conducted a secondary data analysis of Gillanders and colleagues (39) and Ferreira and colleagues (38) studies and concluded that IBS acceptance may mediate and moderate IBS QOL. The authors hypothesize that participants with IBS who have more IBS

acceptance engage in less avoidant behaviors (i.e., more values-based behavior) and thus see less of an impact on their QOL (41). IBS acceptance may be protective even if symptom severity is high, which is consistent with literature on ACT in other chronic health conditions (41).

ACT for IBD

Few studies examine the utility of ACT interventions within IBD patients. To our knowledge, only three RCTs have tested an ACT protocol compared to a control condition (e.g., treatment as usual). Wynne and colleagues (42) compared an eight-week group-based ACT intervention to a treatment as usual group by recruiting individuals with high levels of distress with quiescent or “mildly active” IBD. The intervention group, which was led by a psychologist, completed 90-minute sessions on ACT related topics. The results showed that stress, perceived stress, and depression scores decreased more significantly in the ACT group at both post-intervention and three-month follow ups as compared to the treatment as usual group (42). Stress reductions were also observed via cortisol in hair samples (42). In this RCT, no changes in disease activity were observed.

The ACTforIBD program, developed by Romano and colleagues (43), also tested an eight-week ACT intervention for patients with IBD. ACTforIBD was unique in that it specifically recruited patients with high levels of reported distress, involved a combination of therapist-led and self-guided sessions (44), and was developed in conjunction with patient stakeholders (45). The intervention included eight online modules; the first three modules were led by a therapist, the following four were self-guided, and the last session was therapist-led (43,44). The module content included the following topics: Commitment to therapy and assessment, Creative hopelessness, Personal values, Mindfulness, Fusion and defusion, Acceptance, Values and goals, and Commitment and overcoming barriers moving forward (43). Post-intervention results indicated high levels of feasibility and acceptability of the intervention. At treatment completion, participants in the treatment group had lower levels of anxiety and higher rates of psychological flexibility symptoms in comparison to the control group (43). A larger trial with three-month follow-up is currently in progress and results are not yet available (43).

A third RCT, the Living with Intention, Fullness, and Engagement with Inflammatory Bowel Disease (LIFEwithIBD) trial, aimed to test the impact of an ACT

intervention with compassion-based constructs (e.g., reductions in shame), as compared to treatment as usual (46,47). The group-based intervention included nine weekly two-hour sessions with a focus on ACT topics (e.g., values clarification, cognitive defusion). Participants were assigned daily home practices such as mindfulness exercises (47). The primary outcome of the study was psychological distress and was measured by depression, anxiety, and stress, with proposed mediators of self-compassion and psychological flexibility. Secondary outcomes were symptom perception, symptom severity, functional impairment, QOL, illness shame, and various biomarkers. The results for the LIFEwithIBD RCT have not been published at the time of this writing.

Other non-RCT interventional studies on the use of ACT in IBD have also been conducted, though these have either been shorter in duration or have not exclusively tested patients with IBD. Lavelle and colleagues (48) conducted a series of single-case designs on participants with IBD. One study examined a two-hour face-to-face ACT intervention targeting stress and experiential avoidance. They found that most participants did not experience reductions in these constructs and concluded that the ACT intervention was too brief to impact study outcomes (48). The second study examined a two-session virtual ACT intervention and its influence on stress and psychological flexibility. During each intervention session, participants met for two hours via Zoom and were asked to use an ACT workbook developed for the study as homework that helped participants to clarify and expand upon topics discussed in the virtual sessions; they were also provided with one follow-up phone call with the study interventionist. Meta-analytic results of this study revealed that about 40–58% of participants benefitted in some way from this intervention (e.g., increases in valued action, reductions in stress levels), though generalizability is limited given the small sample and methodology (48). Similarly, Hou and colleagues (49) asked participants with IBD to participate in a one-day (five hour) ACT program. The study found a significant decrease in anxiety symptoms with this one-day ACT program, though no changes in IBD symptoms were noted (49).

A comparative effectiveness study by Carvalho and colleagues (50) tested the impact of a virtual four-week ACT intervention in comparison to a compassion focused intervention (CFT). Of the 47 total participants across both intervention groups, 20 had CD or UC. Participants in the ACT intervention completed 20-minute online modules on different ACT constructs (e.g., willingness, mindfulness)

and were asked to practice meditation between sessions. The primary outcomes were depression and anxiety symptoms, with secondary outcomes including shame, cognitive fusion, ACT process measures (e.g., psychological flexibility), and self-compassion (50). No significant changes in primary or secondary outcomes were observed for measures of interest, but valued action increased more quickly in the ACT group as compared to the CFT group (50). In this study high levels of attrition (50% of enrolled participants) were observed, though 100% of participants within the ACT intervention indicated acceptability of the intervention.

Clinical application of ACT and CBT

Little research exists on patient factors that may indicate when a patient with IBS or IBD may benefit from ACT compared to CBT, and no studies identified in this review examined these constructs. While we are not empirically comparing ACT to CBT, in clinical practice, there may be instances in which patients may benefit from one treatment modality or an eclectic approach. In clinical practice, patients who are open to the CBT model and changing thoughts and behaviors may benefit from CBT. While CBT for GI conditions can be effective, it may not be effective or be the best fit for all patients (51). For example, patients with IBS or IBD who did not find CBT helpful in the past, do not have cognitive distortions, or have difficulty with cognitive restructuring may further benefit from a different treatment approach like ACT that focuses on value identification. Further, patients whose GI symptoms are more chronic may have difficulty challenging negative automatic thoughts related to their GI symptoms, and may therefore benefit from a different treatment approach like ACT that focuses on defusing from thoughts. For example, patients with IBD may have trouble challenging negative thoughts with CBT if the thoughts are true in any way despite their distorted nature (e.g., thoughts like “My life is never going to be the same” after an IBD diagnosis or significant IBD-related event like placement of an ostomy). Though the use of CBT skills here could help with coping, the patient may have difficulty given the veracity of this thought. Finally, ACT may be a good fit for patients that meta-analyze automatic thoughts or could benefit from expanding psychological flexibility, or who are interested in identifying and engaging value-driven behavior. ACT may be a good option for leaning into emotional and cognitive distress via acknowledgement and acceptance, rather than

trying to change emotional distress with their GI symptoms via altering thoughts (29). GI psychologists may consider an eclectic approach of combining aspects of CBT and ACT into treatment. Though treatment decisions on the use of ACT or CBT are often based on clinician judgement, it may be beneficial to conduct research studies on patient factors (i.e., psychological flexibility, acceptance of symptoms) to tailor treatment decision making.

Discussion and conclusions

This narrative review aimed to highlight research on ACT within the IBS and IBD patient populations. Overall, there is research to support the effectiveness of ACT in patients with IBS including improvements in IBS symptoms, QOL, mood symptoms, and acceptance of IBS symptoms, though operationalization of the “effectiveness” metric of ACT for IBS varies (38-40). While less robust, emerging evidence also suggests that ACT protocols are acceptable for patients with IBD and may be helpful for managing psychological distress (42,43,48,49).

Though the narrative review was informative, there are notable gaps in the literature on the use of ACT for patients with IBS and IBD. First, additional studies are needed to experimentally test ACT as a structured protocol. Within IBS, all reviewed studies utilized an ACT protocol in one of two formats: (I) a self-help book (37) and/or (II) a one-day intervention focused on principles of ACT, with one study using a waitlist RCT which included patients with IBS symptoms but not a formal diagnosis of IBS (40). For IBD, only three studies have tested ACT within an RCT, and one study’s results (LifeForIBD) are not published at the time of this review. Further, existing studies in ACT and IBD are often cited for high risk of bias as they may not test patients with active symptoms of IBD (20), which may further contribute to studies’ results. Promisingly, other studies in IBS and IBD have examined components of ACT, like mindfulness (52-55) and found resulting success in reducing stress, improving HRQoL, or in some cases, reducing GI symptoms in these patient populations. While these studies are outside of the scope of the current review, they suggest that resources should be devoted to expanding and replicating these results using the full ACT hexaflex.

Second, many of the ACT studies identified in this review used self-guided ACT interventions which may have limitations (38-40). While self-guided protocols offer flexibility and convenience for patients, there may also be drawbacks, such as lower adherence, treatment withdrawal,

or dropout (56,57). Further, researchers in some of the ACT for IBS studies hypothesized that participant completion of the self-guided manual was not enough to see treatment effects and that future studies should emphasize implementation of ACT skills in intervention development (39,40). For highly experiential behavioral health treatments like ACT, these drawbacks may be further magnified. As such, more structured, therapist-led ACT protocols where the therapist can provide accountability and guidance with implementation of ACT skills may be needed to establish potential efficacy of ACT for both patient populations.

Third, the primary outcome measures in the ACT studies were inconsistent, which may make it difficult to assess the efficacy of ACT. For instance, some studies examined IBS and IBD symptoms as a dependent variable, while others examined ACT-specific metrics (e.g., psychological flexibility), or looked at improvements in HRQoL, depression or anxiety. This leaves room for improvement in experimental design, particularly as the goal of ACT is not necessarily reduction in symptoms, but rather improvements in psychological flexibility, reductions in avoidance, and improvements in valued living. Future studies employing an ACT protocol should consistently utilize outcome measures (i.e., IBS/IBD symptoms, mood/anxiety symptoms, QOL) alongside ACT-specific process measures (i.e., psychological flexibility and experiential avoidance) which was done in some of the studies examined (38-40,42-44,50). One such process metric to consider for consistency across future ACT interventions in these patient populations is the Acceptance and Action Questionnaire (AAQ-II), which specifically measures psychological flexibility and experiential avoidance (58). The IBS AAQ-II, which has acceptable validity and reliability (59) was used in IBS specific ACT studies (38,39,41,60) and some ACT studies for IBD (42-44,48).

Another point of consideration is that all of the studies in this current review examined the diagnoses IBS and IBD separately, or did not explicitly mention enrolling patients with both conditions. Given the high prevalence of patients with IBD in remission who also report symptoms of IBS (8,9), co-occurrence of these conditions could possibly influence patient factors and treatment outcome with ACT. Researchers should consider examining how these outcomes change (or do not change) for patients actively managing both diagnoses.

The narrative review also discussed the clinical application of ACT and CBT for GI conditions. Given

that the decision to use ACT compared to CBT is based on clinician judgement, more research is needed on patient factors that may indicate when a patient with IBS and IBD would benefit more from ACT compared to CBT or an eclectic approach. Future studies should examine full protocols of CBT versus ACT in patients with IBS and IBD, specifically in a head-to-head trial to elucidate patient factors that could assist clinician treatment decision making. Further, it may be helpful for GI psychologists to have GI specific ACT resources to guide interventions for this patient population. The Rome Foundation GastroPsych group has webinar training entitled “*ACT for Disorders of Brain-Gut Interaction*” that will likely be helpful for GI mental health providers to establish consistent practices around delivery of ACT for patients with IBS or IBD (61). Further, the book *Psychogastroenterology for Adults: A Handbook for Mental Health Professionals*, includes a chapter on ACT that provides mental health professionals guidance on the use of ACT in this patient population (62). The *Better Living with IBS*, which was book used in many of the IBS studies, may also be useful for patients interested in self-guided ACT (37). Overall, more GI specific ACT resources for patients and clinicians are needed.

Acknowledgments

Funding: The work was funded in part by the National Institute of Diabetes and Digestive and Kidney Diseases (R01DK092217, PI: Pandolfino).

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Translational Gastroenterology and Hepatology* for the series “Social and Emotional Impacts of Chronic Digestive Diseases”. The article has undergone external peer review.

Reporting Checklist: The authors have completed the Narrative Review reporting checklist. Available at <https://tgh.amegroups.com/article/view/10.21037/tgh-24-10/rc>

Peer Review File: Available at <https://tgh.amegroups.com/article/view/10.21037/tgh-24-10/prf>

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://tgh.amegroups.com/article/view/10.21037/tgh-24-10/prf>)

amegroups.com/article/view/10.21037/tgh-24-10/coif). The series “Social and Emotional Impacts of Chronic Digestive Diseases” was commissioned by the editorial office without any funding or sponsorship. S.H.M. served as the unpaid Guest Editor for the series and serves on the ROME GastroPsych Membership and Social Media Committees. J.P.N. serves on the ROME GastroPsych Early Career Committee and the Michigan Crohn’s and Colitis Foundation Healthcare Professional Engagement Committee. J.P. reports grants from Medtronic and Diversatek; consulting fees from Medtronic, Ethicon-Torax, Endogastric Solutions, Diversatek; Payment from Medtronic, Ethicon-Torax, Endogastric Solutions, Takeda, Astra Zeneca and serve on Data Safety Monitoring Board or Advisory Board of Medtronic, Ethicon-Torax, Endogastric Solutions, Diversatek, Takeda, Astra Zeneca, Phantom and Nauro gastrx. The authors have no other conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

- Drossman DA, Hasler WL. Rome IV-Functional GI Disorders: Disorders of Gut-Brain Interaction. *Gastroenterology* 2016;150:1257-61.
- Mearin F, Lacy BE, Chang L, et al. Bowel Disorders. *Gastroenterology* 2016;S0016-5085(16)00222-5. doi: 10.1053/j.gastro.2016.02.031.
- Lacy BE, Pimentel M, Brenner DM, et al. ACG Clinical Guideline: Management of Irritable Bowel Syndrome. *Am J Gastroenterol* 2021;116:17-44.
- Palsson OS, Whitehead W, Törnblom H, et al. Prevalence of Rome IV Functional Bowel Disorders Among Adults in the United States, Canada, and the United Kingdom. *Gastroenterology* 2020;158:1262-1273.e3.
- Staudacher HM, Black CJ, Teasdale SB, et al. Irritable bowel syndrome and mental health comorbidity - approach to multidisciplinary management. *Nat Rev Gastroenterol Hepatol* 2023;20:582-96.
- Centers for Disease Control & Prevention. What is inflammatory bowel disease (IBD)? 2022 [updated April 13, 2022]. Available online: <https://www.cdc.gov/ibd/what-is-IBD.htm>.
- Ng SC, Shi HY, Hamidi N, et al. Worldwide incidence and prevalence of inflammatory bowel disease in the 21st century: a systematic review of population-based studies. *Lancet* 2017;390:2769-78.
- Fairbrass KM, Costantino SJ, Gracie DJ, et al. Prevalence of irritable bowel syndrome-type symptoms in patients with inflammatory bowel disease in remission: a systematic review and meta-analysis. *Lancet Gastroenterol Hepatol* 2020;5:1053-62.
- Henriksen M, Høivik ML, Jelsness-Jørgensen LP, et al; IBSEN Study Group. Irritable Bowel-like Symptoms in Ulcerative Colitis are as Common in Patients in Deep Remission as in Inflammation: Results From a Population-based Study [the IBSEN Study]. *J Crohns Colitis* 2018;12:389-93.
- Zamani M, Alizadeh-Tabari S, Zamani V. Systematic review with meta-analysis: the prevalence of anxiety and depression in patients with irritable bowel syndrome. *Aliment Pharmacol Ther* 2019;50:132-43.
- Survey highlights growing need for psychosocial support in IBD care amid high rates of anxiety and depression [press release]. American Gastroenterological Association, March 23, 2023. Available online: <https://medicalxpress.com/news/2023-03-survey-highlights-psychosocial-ibd-high.html>
- Fairbrass KM, Lovatt J, Barberio B, et al. Bidirectional brain-gut axis effects influence mood and prognosis in IBD: a systematic review and meta-analysis. *Gut* 2022;71:1773-80.
- Sofia MA, Feuerstein JD, Narramore L, et al. White Paper: American Gastroenterological Association Position Statement: The Future of IBD Care in the United States-Removing Barriers and Embracing Opportunities. *Clin Gastroenterol Hepatol* 2024;22:944-55.
- Canavan C, West J, Card T. Review article: the economic impact of the irritable bowel syndrome. *Aliment Pharmacol Ther* 2014;40:1023-34.

15. Black CJ, Thakur ER, Houghton LA, et al. Efficacy of psychological therapies for irritable bowel syndrome: systematic review and network meta-analysis. *Gut* 2020;69:1441-51.
16. Radziwon CD, Lackner JM. Cognitive Behavioral Therapy for IBS: How Useful, How Often, and How Does It Work? *Curr Gastroenterol Rep* 2017;19:49.
17. Kinsinger SW. Cognitive-behavioral therapy for patients with irritable bowel syndrome: current insights. *Psychol Res Behav Manag* 2017;10:231-7.
18. Knowles SR, Monshat K, Castle DJ. The efficacy and methodological challenges of psychotherapy for adults with inflammatory bowel disease: a review. *Inflamm Bowel Dis* 2013;19:2704-15.
19. Mikocka-Walus A, Bampton P, Hetzel D, et al. Cognitive-Behavioural Therapy for Inflammatory Bowel Disease: 24-Month Data from a Randomised Controlled Trial. *Int J Behav Med* 2017;24:127-35.
20. Riggott C, Mikocka-Walus A, Gracie DJ, et al. Efficacy of psychological therapies in people with inflammatory bowel disease: a systematic review and meta-analysis. *Lancet Gastroenterol Hepatol* 2023;8:919-31.
21. Beck JS, Beck AT. *Cognitive Behavior Therapy, Second Edition: Basics and Beyond*. 2 ed. New York, USA: Guilford Publications; 2011.
22. Everitt HA, Landau S, O'Reilly G, et al. Cognitive behavioural therapy for irritable bowel syndrome: 24-month follow-up of participants in the ACTIB randomised trial. *Lancet Gastroenterol Hepatol* 2019;4:863-72.
23. Ford AC, Lacy BE, Harris LA, et al. Effect of Antidepressants and Psychological Therapies in Irritable Bowel Syndrome: An Updated Systematic Review and Meta-Analysis. *Am J Gastroenterol* 2019;114:21-39.
24. Keefer L, Ballou SK, Drossman DA, et al. A Rome Working Team Report on Brain-Gut Behavior Therapies for Disorders of Gut-Brain Interaction. *Gastroenterology* 2022;162:300-15.
25. Windgassen S, Moss-Morris R, Goldsmith K, et al. Key mechanisms of cognitive behavioural therapy in irritable bowel syndrome: The importance of gastrointestinal related cognitions, behaviours and general anxiety. *J Psychosom Res* 2019;118:73-82.
26. Hunt MG, Loftus P, Accardo M, et al. Self-help Cognitive Behavioral Therapy Improves Health-Related Quality of Life for Inflammatory Bowel Disease Patients: A Randomized Controlled Effectiveness Trial. *J Clin Psychol Med Settings* 2020;27:467-79.
27. McCombie A, Geary R, Andrews J, et al. Does Computerized Cognitive Behavioral Therapy Help People with Inflammatory Bowel Disease? A Randomized Controlled Trial. *Inflamm Bowel Dis* 2016;22:171-81.
28. Petrik M, Palmer B, Khoruts A, et al. Psychological Features in the Inflammatory Bowel Disease-Irritable Bowel Syndrome Overlap: Developing a Preliminary Understanding of Cognitive and Behavioral Factors. *Crohns Colitis* 2021;3:otab061.
29. Hayes SC. Acceptance and Commitment Therapy, Relational Frame Theory, and the Third Wave of Behavioral and Cognitive Therapies - Republished Article. *Behav Ther* 2016;47:869-85.
30. Hayes SC, Strosahl K, Wilson KG. *Acceptance and commitment therapy: An experiential approach to behavior change*. 1 ed. New York: Guilford Press; 1999.
31. Hayes SC, Levin ME, Plumb-Villardaga J, et al. Acceptance and commitment therapy and contextual behavioral science: examining the progress of a distinctive model of behavioral and cognitive therapy. *Behav Ther* 2013;44:180-98.
32. Kashdan TB, Rottenberg J. Psychological flexibility as a fundamental aspect of health. *Clin Psychol Rev* 2010;30:865-78.
33. Hayes SC, Strosahl K, Wilson KG. *Acceptance and Commitment Therapy—The Process and Practice of Mindful Change*. 2 ed. New York, NY, USA: Guilford Publications; 2011.
34. Kabat Zinn, J. Mindfulness-based interventions in context: Past, present, and future. *Clin Psychol* 2003;10:144-156.
35. Hayes SC, Wilson KG, Gifford EV, et al. Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology* 1996;64:1152-68.
36. Ferreira NB. Emerging approaches Acceptance and commitment therapy (ACT) approaches to gastrointestinal conditions. In: Knowles SR, Keefer L, Mikocka-Walus A, editors. *Psychogastroenterology for Adults: A Handbook for Mental Health Professionals*: Routledge; 2020. p. 254-65.
37. Ferreira NB, Gillanders D. *Better Living With IBS: A step-by-step program to managing your symptoms so you can enjoy life to the full!* Australia: Exisle Publishing; 2012.
38. Ferreira NB, Gillanders D, Morris PG, et al. Pilot study of acceptance and commitment therapy for irritable bowel syndrome: A preliminary analysis of treatment

- outcomes and processes of change. *Clinical Psychologist*. 2018;22:241-50.
39. Gillanders D, Ferreira NB, Angioni E, et al. An implementation trial of ACT-based bibliotherapy for irritable bowel syndrome. *Journal of Contextual Behavioral Science* 2017;6:172-7.
 40. Ito M, Muto T. Effectiveness of acceptance and commitment therapy for irritable bowel syndrome non-patients: A pilot randomized waiting list controlled trial. *Journal of Contextual Behavioral Science* 2020;15:85-91.
 41. Bowers H, Gillanders D, Ferreira NB. Moderating effect of IBS acceptance on psychosocial mediators of irritable bowel syndrome. *Journal of Contextual Behavioral Science* 2020;16:30-6.
 42. Wynne B, McHugh L, Gao W, et al. Acceptance and Commitment Therapy Reduces Psychological Stress in Patients With Inflammatory Bowel Diseases. *Gastroenterology* 2019;156:935-945.e1.
 43. Romano D, Chesterman S, Fuller-Tyszkiewicz M, et al. Feasibility, Acceptability, and Preliminary Efficacy of Acceptance Commitment Therapy for Adults Living With Inflammatory Bowel Disease and Distress. *Inflamm Bowel Dis* 2024;30:911-21.
 44. Evans S, Olive L, Dober M, et al. Acceptance commitment therapy (ACT) for psychological distress associated with inflammatory bowel disease (IBD): protocol for a feasibility trial of the ACTforIBD programme. *BMJ Open* 2022;12:e060272.
 45. Dober M, Mikocka-Walus A, Evans S, et al. Perspectives on an Acceptance and Commitment Therapy (ACT) based program for patients with inflammatory bowel disease and comorbid anxiety and/or depressive symptoms. *Psychother Res* 2021;31:668-81.
 46. Trindade IA, Pereira J, Galhardo A, et al. Corrigendum: The LIFEwithIBD Intervention: Study Protocol for a Randomized Controlled Trial of a Face-to-Face Acceptance and Commitment Therapy and Compassion-Based Intervention Tailored to People With Inflammatory Bowel Disease. *Front Psychiatry* 2022;13:837357.
 47. Trindade IA, Pereira J, Galhardo A, et al. The LIFEwithIBD Intervention: Study Protocol for a Randomized Controlled Trial of a Face-to-Face Acceptance and Commitment Therapy and Compassion-Based Intervention Tailored to People With Inflammatory Bowel Disease. *Front Psychiatry* 2021;12:699367.
 48. Lavelle J, Storan D, Eswara Murthy V, et al. Brief and Telehealth Acceptance and Commitment Therapy (ACT) Interventions for Stress in Inflammatory Bowel Disease (IBD): A Series of Single Case Experimental Design (SCED) Studies. *J Clin Med* 2022;11:2757.
 49. Hou JK, Vanga RR, Thakur E, et al. One-Day Behavioral Intervention for Patients With Inflammatory Bowel Disease and Co-Occurring Psychological Distress. *Clin Gastroenterol Hepatol* 2017;15:1633-4.
 50. Carvalho SA, Skvarc D, Barbosa R, et al. A pilot randomized controlled trial of online acceptance and commitment therapy versus compassion-focused therapy for chronic illness. *Clin Psychol Psychother* 2022;29:524-41.
 51. Lackner JM, Jaccard J; . Factors Associated With Efficacy of Cognitive Behavior Therapy vs Education for Patients With Irritable Bowel Syndrome. *Clin Gastroenterol Hepatol* 2019;17:1500-1508.e3.
 52. Gaylord SA, Palsson OS, Garland EL, et al. Mindfulness training reduces the severity of irritable bowel syndrome in women: results of a randomized controlled trial. *Am J Gastroenterol* 2011;106:1678-88.
 53. Zernicke KA, Campbell TS, Blustein PK, et al. Mindfulness-based stress reduction for the treatment of irritable bowel syndrome symptoms: a randomized wait-list controlled trial. *Int J Behav Med* 2013;20:385-96.
 54. Ewais T, Begun J, Kenny M, et al. A systematic review and meta-analysis of mindfulness based interventions and yoga in inflammatory bowel disease. *J Psychosom Res* 2019;116:44-53.
 55. Naude C, Skvarc D, Knowles S, et al. The effectiveness of mindfulness-based interventions in inflammatory bowel disease: A systematic review & meta-analysis. *J Psychosom Res* 2023;169:111232.
 56. Beatty L, Binnion C. A Systematic Review of Predictors of, and Reasons for, Adherence to Online Psychological Interventions. *Int J Behav Med* 2016;23:776-94.
 57. Meyerowitz-Katz G, Ravi S, Arnolda L, et al. Rates of Attrition and Dropout in App-Based Interventions for Chronic Disease: Systematic Review and Meta-Analysis. *J Med Internet Res* 2020;22:e20283.
 58. Bond FW, Hayes SC, Baer RA, et al. Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: a revised measure of psychological inflexibility and experiential avoidance. *Behav Ther* 2011;42:676-88.
 59. Ferreira NB, Eugenicos MP, Morris PG, et al. Measuring acceptance in irritable bowel syndrome: preliminary validation of an adapted scale and construct utility. *Qual*

- Life Res 2013;22:1761-6.
60. Ong CW, Lee EB, Levin ME, et al. A review of AAQ variants and other context-specific measures of psychological flexibility. *Journal of Contextual Behavioral Science* 2019;12:329-46.
61. ROME Foundation. ACT for Disorders of Brain-Gut Interaction 2023. Available online: <https://cme.theromefoundation.org/courses.php>.
62. Knowles S, Keefer L, Mikocka-Walus A. *Psychogastroenterology for adults: A handbook for mental health professionals*. 1 ed: Routledge; 2020. 328 p.

doi: 10.21037/tgh-24-10

Cite this article as: Marchese SH, Naftaly JP, Pandolfino J. Acceptance and commitment therapy for the treatment of irritable bowel syndrome and inflammatory bowel disease: a narrative review. *Transl Gastroenterol Hepatol* 2024;9:43.