Cognitive behaviour therapy for irritable bowel syndrome

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The UK Department of Health states that there is suggestive, although not conclusive, evidence for the efficacy of cognitive behavioural therapy (CBT) in irritable bowel syndrome (IBS) and that CBT should be considered as a treatment option for the syndrome. This paper provides a general introduction to CBT, the principles which underlie it and how they can be applied to IBS. The components of CBT for IBS are described in some detail. Guidelines for gastroenterologists are provided on how these principles can be used to inform their practice and the existing outcome data are reviewed.

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Introduction to cognitive behavioural therapy

The cognitive behavioural model was developed in the 1960s by the American psychiatrist and psychotherapist Aaron T. Beck, who applied it first to depression and then to anxiety disorders. It describes how events, thoughts, emotions, actions and physiological responses are all interlinked. Thoughts, and particularly interpretations of internal sensations and external events, are of particular importance. Patterns of thoughts are related to underlying assumptions which a person holds about themselves and the world.

This model underpins cognitive behavioural therapy (CBT), which is a short-term intervention oriented towards change, rather than insight for its own sake, and particularly towards the development of new strategies and skills for coping with problems. It aims to identify patterns of thinking and behaviour which maintain problems by leading to negative emotions and hindering progress towards desired goals. The realism and usefulness of thoughts and behaviours is tested out collaboratively through logical discussion and practical experiments. Alternative ways of thinking and acting are considered. When CBT is applied to physical health problems, it also aims to reduce physical symptoms by addressing the behaviour patterns and (psychologically influenced) physiological responses which maintain them.

CBT begins with a detailed assessment, on the basis of which a provisional formulation, or individualized explanation of the problems, is drawn up. Intervention for reasonably straightforward problems typically consists of six sessions, each lasting an hour. Sessions are structured; client and therapist draw up an agenda together. The client completes agreed homework tasks between sessions. This might entail keeping records (to further elucidate relationships between events, symptoms, thoughts, feelings and actions) or trying out changes. There is an emphasis on the development of skills, so that the client is better able to cope with any recurrence of difficulties in the future. CBT can be delivered to individuals or groups.

There is very good evidence for the efficacy of CBT in depression, various anxiety disorders, bulimia nervosa and, in the domain of physical disorders, chronic pain. A publication from the UK Department of Health [1] provides a good general review.

Application of the cognitive behavioural model to irritable bowel syndrome

Irritable bowel syndrome (IBS) can be readily conceptualized within this framework (see, for example, Toner et al. [2]). Interpretation of abdominal discomfort as threatening (e.g., ‘this pain must mean something is seriously wrong’), is likely to lead to actions such as seeking further medical consultations and paying increased attention to bodily sensations, as well as increased physiological arousal and subjective anxiety, which in turn lead to the discomfort being experienced as more noxious and intense. More intense sensations are likely to be experienced as more threatening, so that a vicious cycle is completed. On average, IBS patients report more psychological distress than do comparison groups with organic gastrointestinal disease or general populations [3].

Another example would be the thought ‘I only just made it to the toilet then. I could not have held on for a moment longer’, perhaps accompanied by images of public incontinence and humiliation. These thoughts may lead the patient to restrict their activities in order to stay close to the nearest toilet, thus leading to
boredom, resentment and low mood, due to a lack of enjoyable activities, and maintenance of the fear because it is not tested out and so cannot be disproved. Sensitivity to perceived bowel urgency is thus increased, again completing a vicious cycle.

Thus, psychological and physiological variables interact and CBT is entirely compatible with purely physiological treatments such as anti-spasmodic medication and may indeed have a synergistic beneficial effect.

**Cognitive behaviour therapy for irritable bowel syndrome**

CBT is a broad term and the interventions described in the literature have differed in their composition. However, each of the following components is normally included to some degree.

**Education about IBS and the CBT model**

IBS is presented as a problem which is more common than it might appear, due to general embarrassment about discussing bowel function, and as a distinct disorder with real physical symptoms that can be painful, distressing, anxiety provoking, disruptive to lifestyle, and embarrassing. Information is given about digestive function in general, such as the range of normal bowel frequency, the negative effects of straining to pass a motion or ignoring the urge, and ways of dealing with constipation and diarrhoea.

Stress is described as a normal part of life and an interaction between individuals and their environment, influenced by their interpretations of events and perceptions of their own ability to cope. The impact of stress on the digestive system is discussed, with reference to the roles of central and autonomic nervous systems and the idea of ‘fight or flight’ responses, including bowel muscle spasm.

The influence of psychological factors on physical symptoms is discussed, with reference to gate theory [4], which states that pain signals from the site of physiological disturbance or damage pass through a gate-like mechanism to the brain, which then interprets them, combining information from various sources. It is only at this point that pain is experienced, and this experience is influenced by current physiological arousal, mood, focus of attention and beliefs about the pain.

**Monitoring of thoughts, emotions and IBS symptoms to consider how they might be related**

Special record forms are used to do this. For example, people with IBS often believe that they can control their symptoms by not eating, but systematic record-keeping generally shows that symptoms are more often predicted by irregular eating, with long gaps between meals.

**Identifying and testing out thoughts and underlying assumptions (cognitive work)**

This is done in a collaborative and sympathetic way. It is emphasized that people who are under stress often engage in self-defeating thoughts which only make things worse. Relevant unhelpful thoughts may be specific to IBS symptoms, such as ‘I will be uncomfortable all day if I cannot achieve the feeling of a completely empty bowel in the morning’, they may be more general, but relate to the individual’s response to their symptoms (e.g., ‘Everyone will notice if I go to the toilet again and think I’m odd’) or they may be very general and influence IBS more indirectly, by making the individual more likely to feel stressed (e.g., ‘I should be able to cope with everything which is asked of me’).

**Stress management**

This entails identifying sources of stress for the individual concerned and working with them to develop more helpful strategies for coping with them. It includes training in relaxation techniques and consideration of how they might develop other ways of feeling relaxed, such as taking exercise and finding time to pamper themselves. It also includes a practical problem-solving approach to the sources of their stress. The therapist might provide guidance on relevant skills such as time management, assertiveness and managing anger.

**Planning activities**

This takes the form of between-session homework and entails gradually re-engaging in activities previously avoided because of IBS, including, where appropriate, eating certain foods and at certain times. An increased level of activity also lifts mood and provides more distraction from the symptoms of IBS.

**Potential problems**

Patients’ attributions for their illness and expectations of and preferences for intervention influence engagement in any treatment and this is no exception. Blanchard [3] suggests that about 10% of patients, mostly male, do not see the cognitive behaviour model as applying to them and are thus unlikely to engage in CBT. This is also a therapy which makes significant demands on patients’ time, and some will feel unable to make this commitment.

**Implications from the cognitive behavioural model for gastroenterologists**

The availability of therapists who are trained in CBT and have specialist experience in IBS is limited. However, even when specialist referral is not an option, the model has implications for gastroenterologists’ own clinical practice. Corazziari [5] provides useful guidelines.
Enquiry should be made about possible psychosocial factors (such as stress at work and home, changes in lifestyle, bereavements and other significant events) alongside physical ones, in a matter-of-fact way. The clinician should enquire about the patient’s existing strategies for managing symptoms and stress and encourage ones which seem helpful. IBS should be presented as a positive diagnosis with real symptoms and basic information on the role of psychological factors should be provided, as far as the clinician feels confident to do so. Test results should be presented clearly, with information about what is normal and an opportunity to ask questions. The clinician should not be drawn into arranging invasive tests which are not medically indicated, but should explain why they are not appropriate. Goals for treatment should be agreed on, not assumed.

**Evidence for the efficacy of CBT**

Toner et al. [2] provide a useful review of the literature. Of a total of ten controlled studies, they note that four found that CBT reduced gastrointestinal symptoms and psychological distress to a greater extent than did a symptom monitoring or waiting list control condition [6–9]. Three studies found improvement in gastrointestinal symptoms at least as great as that found in response to medical treatment [8,10,11]. Two more recent studies found that CBT produced more improvement in gastrointestinal and psychological symptoms than did conditions designed to control for non-specific factors [12,13]. More details are given in Table 1.

Several studies carried out by Blanchard and colleagues at Albany were not included in this review. In a large study (n = 92), Blanchard et al. [14] found no advantage of a 12 session package of CBT above symptom monitoring and a stronger comparison condition which controlled for attention and contact time. They wonder if this was due to the use of a therapist less experienced in the practice of CBT. There was good maintenance of gains at 2 month and 6 month follow-up in all groups.

The Albany group subsequently evaluated components of CBT separately. Blanchard et al. [15] (n = 81) compared ten sessions of relaxation with symptom monitoring and found significant benefit in composite symptom reduction score and number of patients achieving significant benefit. Greene and Blanchard [13] (n = 20) compared a ten-session intervention with an emphasis of work on thoughts (and not including any relaxation training) with a symptom-monitoring control condition and found very significant benefits on composite symptom reduction score and depression.

In a more recent study, Heymann-Monnikes et al. [16] found that a programme, including IBS information, progressive muscle relaxation, cognitive coping strategies, problem solving and assertiveness training, added significant benefit when given in combination with standard medical care, in terms of effects on patients’ quality of life, sense of control over their difficulties, feelings of well-being and IBS symptoms (as recorded in diaries).

**Group interventions**

Two studies have investigated CBT groups for IBS: van Dulmen et al. [9] (n = 47) and Toner et al. [2] (n = 101). The former had a briefer protocol (eight sessions rather than 12, including two individual ones) and included work on relaxation, whereas the latter was more focused on exploration of beliefs related to irritable bowel syndrome. Both showed improvement in

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**Table 1** Studies reviewed by Toner et al. [2] demonstrating efficacy of cognitive behavioural therapy for irritable bowel syndrome

<table>
<thead>
<tr>
<th>Study [reference]</th>
<th>n</th>
<th>Intervention</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Lynch and Zamble [8]</td>
<td>21</td>
<td>Eight 2-h sessions, including relaxation, cognitive work and stress management.</td>
<td>Greater benefits on a gastrointestinal symptom composite measure and a number of individual symptoms, and depression, compared to a waiting list control condition.</td>
</tr>
<tr>
<td>Neff and Blanchard [7]</td>
<td>19</td>
<td>Comprehensive 12-session package, including education, relaxation, work on thoughts, plus an additional thermal biofeedback component</td>
<td>Significant advantage over symptom monitoring on a symptom reduction composite measure and in number of patients improved. In general, the results held up well over 1, 2 and 4 year follow-up.</td>
</tr>
<tr>
<td>Bennett and Wilkinson [8]</td>
<td>24</td>
<td>Eight sessions of education, relaxation and cognitive work.</td>
<td>Significant improvement in gastrointestinal symptoms and psychological distress. Medical interventions (using a combination of an antidepressant or anxiolytic medication, a smooth muscle relaxant and a bulking agent) produced equivalent improvements in physical symptoms, but no significant reduction in anxiety. No change during a preceding symptom monitoring period.</td>
</tr>
<tr>
<td>Shaw et al. [10]</td>
<td>35</td>
<td>An average of six sessions of stress management, which comprised education, discussion of personal stresses and relaxation.</td>
<td>Significantly less avoidance of foods and activities compared to standard medical treatment, maintained at four and nine month follow-up.</td>
</tr>
<tr>
<td>Corney et al. [11]</td>
<td>42</td>
<td>Between six and sixteen sessions of education, work on thoughts, graded exposure to feared situations, bowel habit retraining and pain management.</td>
<td>Greater improvement in gastrointestinal and psychological symptoms, relative to symptom monitoring or a self-help support group.</td>
</tr>
<tr>
<td>Payne and Blanchard [12]</td>
<td>34</td>
<td>Ten sessions of cognitive therapy.</td>
<td>Greater improvement in gastrointestinal and psychological symptoms, relative to symptom monitoring or a self-help support group.</td>
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gastrointestinal and psychological symptoms relative to control conditions. Van Dulmen et al. [9] found significant advantages, relative to a waiting list control condition, in abdominal pain and avoidance, which were maintained at long-term follow-up (range, 6–48 months; mean, 28 months). Toner et al. [2] used the stronger control condition of a psychoeducational group (including information about IBS and supportive discussion), as well as standard medical treatment and found significantly greater improvement in depression and one gastrointestinal symptom (bloating) in the CBT group. A group approach may offer additional benefits in that problems may be shared with others experiencing similar difficulties. Vollmer and Blanchard [17] (n = 32) suggested that the outcome of a ten-session intervention was, if anything, a little better for group delivery, as opposed to individual delivery.

Prognostic factors

In general, CBT is most appropriate for patients who are significantly distressed by their symptoms, are open to the idea that psychological factors play some role in their difficulties, are willing to take part in an intervention that requires their active participation and have already had reasonable medical investigations and interventions.

Blanchard et al. [18] note that the outcome of CBT (but not cognitive work alone) was worse for individuals who had a diagnosable psychiatric disorder as well as IBS. Blanchard et al. [19] found that high trait anxiety, female gender and absence of any symptom free days during baseline predicted poorer outcome.

Follow-up

Most of the studies quoted show maintenance of gains at follow-up of at least 3 months. Fewer data are available on longer-term follow-up, but there is some evidence for significant maintenance of gains to at least 2 year follow-up, for example Blanchard et al. [20].

Conclusions

There is increasing evidence for the effectiveness of CBT in alleviating the physical and psychological symptoms of IBS and the Department of Health [1] has recommended that it should be considered as a treatment option for the syndrome. It is most appropriately offered to patients who have already had reasonable medical investigations and interventions, remain significantly distressed and are interested in taking an active part in achieving greater control over their symptoms. The CBT model suggests some strategies for gastroenterologists to use in their own practice. It is also recommended that gastroenterologists seek advice from their local psychology services on how they might establish a CBT service for their patients.

Annotated references

- Of special interest
  A brief introduction to the use of cognitive behavioural therapy in IBS. The paper gives a clear picture of issues that commonly arise and the therapeutic strategies for addressing them.
  A comprehensive overview of the use of cognitive behavioural therapy in IBS.