The role of psychosocial factors in irritable bowel syndrome

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Psychosocial factors, as appreciated within the context of the biopsychosocial model, are necessary for understanding the clinical expression of irritable bowel syndrome (IBS) by virtue of their key roles in the development, precipitation and perpetuation of IBS. Addressing psychosocial factors in assessment and management leads to improvement in the clinical outcome for IBS patients. Pertinent management components include adopting a ‘care’ approach within an ongoing collaborative treatment relationship; offering any psychological or psychiatric intervention as part of a multi-disciplinary treatment approach; providing education and reassurance; and using mental health professionals when indicated.

Key words: biopsychosocial model; chronic illness behaviour; irritable bowel syndrome; psychiatric disorders; psychosocial factors; management.

INTRODUCTION

Irritable bowel syndrome (IBS) is one of the most common gastrointestinal disorders in medical practices. Furthermore, a recent nationwide survey of US gastroenterologists found it to be the most prevalent gastrointestinal disorder seen in gastroenterology practices (19%)¹, which is consistent with previous estimates.² IBS also can be one of the more difficult and frustrating illnesses for gastroenterologists to manage. To a large extent this difficulty arises from understanding and treating the disorder from a disease-based biomedical approach. A more accurate and effective method is to apply the biopsychosocial model, which incorporates the key role of psychosocial factors in the disorder’s development and clinical expression.

Consequently, to help clarify the role of psychosocial factors in IBS, this chapter will:

1. identify the need for a biopsychosocial model of IBS; and
2. review the evidence for the role of psychosocial factors in the onset, clinical expression, and outcome of IBS, consistent with this biopsychosocial understanding.

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THE NEED FOR A BIOPSYCHOSOCIAL MODEL OF IBS INTEGRATING HEALTH, ILLNESS AND DISEASE

The biomedical model

Definition/assumptions/implications

The biomedical model, with its foundations of reductionism (in which all clinical conditions can be reduced to a single aetiology) and dualism (in which illness and disease are categorized to either an organic disorder with a clearly defined aetiology or a ‘functional’ disorder with no identifiable pathophysiology), has remained the dominant tradition in western medical education, research and patient care (see Figure 1).

[Diagram of the biomedical model]

**Figure 1.** In the biomedical model, a biological predisposition, open to influence by environmental exposures, leads uni-directionally to disease. Furthermore, disease (understood to be an identifiable, biologically-based pathophysiological process) wholly determines the illness (the individual’s experience of the underlying physical abnormality), which, in turn, leads to the clinical outcome. The expression of this outcome can be altered by ‘psychological overlay’. Illness without disease has no place in this model, leading to pejorative views that the symptoms are less than ‘real’. Adapted from Drossman.3

Such a model has notable implications. First, biological factors are both necessary and sufficient for the disease, its diagnosis and its treatment. Second, illness cannot exist without disease. Third, organic and functional illness can only be viewed as separate entities. Finally, organic illnesses are viewed as ‘real’ because of presumed biological ‘causes’, whereas ‘functional’ illnesses, not being understood from a biological construct, are somehow less than ‘real’.5

Limitations

These constructs, although frequently applied in our educational system, are inconsistent with the realities of research and clinical practice. Much illness does exist
without clinically identifiable disease. Only 16% of presentations seen in ambulatory care settings have an organic aetiology, yet they do not necessarily have a psychological basis. Diagnostic and therapeutic strategies that focus solely on organic aetiologies are therefore inappropriate for the majority of patients.

Furthermore, ‘organic’ and ‘functional’ illnesses are not independent entities. ‘Organic’ illnesses, such as inflammatory bowel disease, can exist with or without symptoms (given the same level of disease) and can simultaneously present with either functional illness, such as irritable bowel syndrome (IBS), or psychiatric disorders. Emerging data also indicates that stress and other psychosocial factors can lead to the activation or exacerbation of an organic disease, including inflammatory bowel disease. While viewed as functional illness, psychiatric disorders, such as major depression and anxiety disorder, also have a biological basis. Finally, an illness being viewed as ‘functional’ in contrast to ‘organic’ leads to negative attributions and can hinder the medical care a patient receives; physicians see themselves as treating disease and not illness, so responsibility for the care of patients with ‘functional’ disorders lies outside their realm of medical responsibility.

The biopsychosocial model

Definitions/assumptions

The biopsychosocial model addresses these limitations by incorporating the complex biological, psychological and social interactions that explain human disease and illness (see Figure 2). Consequently, this more comprehensive and integrative view of illness and disease allows for a more rational approach to understanding all medical disorders and affecting more optimal care without stigmatizing the patient. Rather than seeking a single etiology, the clinician instead looks for the interaction of conditions that determines illness and disease. For example, any chronic disease can lead to a depressive disorder, which in turn, decreases cellular immunity, thereby leading to further disease activation. In this model, increased disease activity also has varying effects on the individual depending on the existent psychosocial and environmental milieu. For

![Figure 2](image_url)

*Figure 2.* In the biopsychosocial model, both biological and psychological predispositions contribute to the development and expression of disease and illness. Environmental exposures and psychosocial modifiers can alter the clinical expression of the condition, and they can do so in a reciprocal manner. Disease and illness are also seen as affecting one another. Functional illness without biological disease is acceptable.
example, two patients may have the same degree of inflammatory bowel disease, but if one patient suffers panic disorder, that patient’s experience of illness is substantially worse, thereby leading to poorer quality of life and increased health care seeking.

A BIOPSYCHOSOCIAL MODEL OF IBS

A biopsychosocial model of IBS that accounts for the integrative effects of biological, psychological and social factors on the clinical expression and outcome of this condition is represented in Figure 3. This model also incorporates an understanding of those psychosocial factors that predispose a patient to the development of IBS, precipitate an exacerbation of IBS, and perpetuate the illness (see Figure 4).

Early life factors determine one’s predisposition towards illness, although they may not be sufficient for the expression of the disease. Psychosocial factors, such as a severe life stress, can precipitate an initial occurrence of disease and later exacerbations. The course of disease can also be perpetuated by psychosocial factors, an example being poor coping style.

This prelude allows us to focus more clearly on the role of psychosocial factors in IBS, which in combination with biological conditions (altered motility and visceral hypersensitivity) must be understood and addressed in order to optimize patient care. Life stress refers to stressful life events, such as physical abuse, sexual abuse, or loss of a loved one. Psychological state refers to the presence of psychiatric symptoms, such as depression or anxiety, which tend to wax and wane episodically, as opposed to the more persistent, inflexible ‘traits’ seen with personality disorders. Coping refers to one’s ability to manage stress. Social support refers to the perceived availability of social support networks. The latter two can serve as ‘buffers’ to modulate or reduce the adverse effect of a psychiatric disturbance on illness expression and outcome.

Figure 3. Early life factors (such as genetic predisposition and environmental exposures) influence later psychosocial elements, physiological functioning, their interaction via the central nervous system (CNS)/enteric nervous system (ENS) axis, and susceptibility to developing IBS. The combined and integrated effects of altered physiology and the person’s psychosocial status will affect how the symptom is experienced, the degree of symptom behaviour and, ultimately, the outcome (taking of medications, physician visits, functional status and quality of life). Additionally, the clinical outcome will, in a reciprocal fashion, affect the severity of the disorder. Adapted from Drossman.3
EVIDENCE SUPPORTING THE ROLE OF PSYCHOSOCIAL FACTORS IN IBS

Epidemiology of psychosocial factors associated with IBS

Life stressors

Research has clearly demonstrated the strong association between life stressors and IBS. Many studies have reported a high prevalence of self-reported physical and sexual abuse in functional gastrointestinal disorders. Patients with IBS have an increased rate of physical and sexual abuse compared to those with organic gastrointestinal disease. Severe life events or chronic social difficulties (e.g. bereavement, marital separation) are more frequent in functional bowel disorders than organic gastrointestinal disorders. In a study assessing the relationship between life events and presentations with either functional bowel disorders, organic gastrointestinal illness, or hospitalizations after self-poisoning, Creed and colleagues demonstrated that stressful life events were experienced more commonly by patients with organic and functional illness than by community controls. In addition, severely stressful life events (such as a break-up of a close relationship) preceded the development of a functional bowel disorder as often as they antedated self-poisoning, and they occurred significantly more often before the development of organic gastrointestinal disease.

Psychological state

IBS is also associated with a high degree of psychological distress. As determined by structured psychiatric interview, 42–61% of patients with IBS seen in gastroenterology clinics have a current co-morbid Axis I psychiatric illness, which is significantly greater than control groups with organic gastrointestinal disorder (<25%). Notably, the psychiatric diagnosis often precedes the onset of IBS. In fact, the presence of a lifetime
psychiatric disorder ranges up to 94% in studies from tertiary care centres. The most common disorders are major depression and anxiety disorders (especially panic disorder). Histories of somatoform disorders (such as hypochondriasis and somatization disorder), which consist of recurrent clinically pertinent somatic complaints (which need not be limited to gastrointestinal complaints) whose presentation cannot be fully explained by a known general medical condition, and alcohol abuse or dependence are also relatively common in IBS patients.

Coping
Coping, referring to one’s ability to appraise and respond to an illness and its management, can be adaptive or maladaptive. An example of a maladaptive coping style is ‘catastrophizing’, in which one perceives having minimal control over the illness, and the individual experiences symptoms as overwhelming. Among patients with gastrointestinal disease, this style is associated with poor health outcome.

Social support
The degree to which individuals maintain close personal relationships with others can promote health status and help protect against the effects of various stresses on one’s health. Although social support networks have not been directly studied with gastrointestinal disease, in general, patients with strong social support networks report a greater sense of control over illness and have lower stress levels than those who do not. Furthermore, population-based research indicates that people who are isolated are at increased mortality risk from a number of causes, including gastrointestinal disease.

EVIDENCE FOR THE INFLUENCE OF KEY PSYCHOSOCIAL FACTORS ON THE EXPRESSION AND CLINICAL OUTCOME OF IBS

Influence on the expression of IBS
Relationship between psychosocial factors and physiology
Psychosocial factors and physiology (motility and sensation) interact reciprocally through the central nervous system/enteric nervous system axis. Psychosocial stressors affect colonic motility in both normals and patients, and patients with functional gastrointestinal disorders have increased motor reactivity to psychological stressors. Conversely, dysmotility also may affect psychological state. Recent research has demonstrated that rat colon distension leads to firing of the locus coeruleus, an area in the brain with a high density of norepinephrine-containing neurons whose activation is believed to play a key role in anxiety and fear behaviours. Furthermore, sensation also appears to be modulated through this central nervous system/enteric nervous system (CNS/ENS) axis, as shown by recent studies demonstrating differences between IBS patients and controls with regard to brain physiology. After rectal distension, a normal patient activates the anterior cingulate gyrus (a site of heavy opiate binding which may reduce sensory input), while an IBS patients does not. In addition, with rectal distension, or even the anticipation of rectal distension, IBS patients activate the prefrontal cortex, whereas this area is not
activated in normal patients. This prefrontal activation is associated with hypervigilance and anxiety. Such differential brain activation may explain why IBS patients exhibit increased visceral hypersensitivity to pain and hypervigilance for pain symptoms.

Emerging evidence indicates that psychosocial distress may perpetuate gut inflammation. The vehicle for this perpetuation may be through psychoneuroimmunological mechanisms that converge on neuropeptide function in the gut lamina propria. One study involving Wistar-Kyoto and Sprague-Dawley rats indicated that previous inflammation appears to up-regulate or rekindle the host’s inflammatory response to later stress. Following recovery from experimental colitis induced by trinitrobenzene sulphonic acid (TNBS), rats which were subsequently stressed by physical restraint showed a fourfold increase in tissue myeloperoxidase activity, an indicator of tissue inflammatory response. In response to this initial gut inflammation, the activation of local cytokines and other potential mechanisms may induce hypermotility and increased visceral sensitivity even after the inflammation resolves. In a clinical trial, the presence of psychological distress not only led to persistence of IBS symptoms, but it was also associated with perpetuation of inflammation. The action of cytokines produced in the colon can also affect higher neural function and behaviour through the hypothalamic–pituitary–adrenal (HPA) axis, a key component of the body’s homeostatic stress adaptation system.

**Relationship between psychosocial factors and IBS manifestation**

Psychosocial factors also play a key role in precipitating the illness experience in IBS patients. For example, a history of abuse in IBS patients is associated with more severe symptoms: 65% greater pain scores (P < 0.0001), three times more days spent in bed (P < 0.0007), and 40% greater psychological distress. Additionally, prospective studies indicate that current stressful life events lead to precipitation of symptom in patients with IBS and other functional gastrointestinal disorders.

Furthermore, severity of illness is related more to psychosocial factors than to physiological factors. Patients classified as having severe functional bowel disorders are distinguished from those with moderate disease by having more depression, poorer coping styles, poorer functional status and a poorer quality of life.

Finally, while not a specific cause of IBS, psychosocial variables may be a co-factor in its development. In a recent study of inpatients with acute gastroenteritis, those who subsequently developed IBS symptoms had significantly higher levels of anxiety, depression, somatization and neurotic traits than those who did not develop IBS.

**Illness behaviour**

Illness behaviour refers to how people perceive, interpret and react to somatic sensations. For example, these sensations may or may not be interpreted as symptoms of disease. This concept helps explain why two patients with the same degree of disease activity (for example, a 1 cm duodenal ulcer) may behave quite differently, with one not experiencing or ignoring the symptoms and the other frequently calling the physician or initiating visits. Illness behaviour incorporates a wide range of possible actions. So-called abnormal illness behaviour can be seen at either end of the severity spectrum: complete denial of illness with no health care seeking (for example, in an individual with a myocardial infarction who refuses to visit a physician), or overuse of health care with symptom experience and behaviour that is greater than the usual expectations from the available clinical data.
Psychosocial factors very strongly influence health care seeking tendency, i.e. whether an individual with IBS visits a physician to become a 'patient'. Epidemiological studies have demonstrated that although IBS symptoms are common, they are not always perceived by an individual as an illness. Psychological disturbances, including psychological distress and anxiety and the patient's fear that symptoms indicate severe bowel disease, as well as altered mood, illness behaviour and personality disturbance are associated with greater likelihood of seeking health care. Patients without bowel disease and IBS non-patients are not psychologically different, while patients with IBS have greater psychological disturbance than non-patients with IBS and normals. Finally, stressful life events in the preceding month are also significantly associated with an increase in the number of health care visits and the level of disability.21

Influence on the clinical outcome

Psychosocial factors make IBS more difficult to treat and lead to a more disabling course of illness. Abusive histories are associated with worse health status. After adjusting for demographic factors and diagnoses, patients with a history of abuse made 30% more physician visits over the previous 6 months (8.7 versus 6.7, \( P < 0.03 \)), reported more lifetime surgeries (4.9 versus 3.8 procedures, \( P < 0.04 \)), had nearly twice as poor daily function (\( P < 0.0001 \)), and spent over 2.5 times more days in bed in the previous 3 months (11.9 versus 4.5 days).16

Maladaptive coping style, for example, the concept of 'catastrophizing' (e.g. 'I can't live with this') can repetitively lead to a state of morbid pessimism and ineffectiveness. This style has been shown to contribute to poor health outcome when patients are followed out to 1 year.27 Psychological strategies such as cognitive behavioural therapy are helpful in decreasing maladaptive cognitions and catastrophizing.

Evidence for the effectiveness of addressing psychosocial factors in managing IBS patients

Given the effect of psychosocial factors on the course of IBS, does assessing and addressing this type of information help in its management? Evidence is emerging that addressing psychosocial factors does lead to improvement in the clinical outcome for IBS patients. For example, a satisfactory consultation with a gastroenterologist leads to a reduction of overall anxiety, less fear that the symptoms represent cancer and a reduction in the patient's preoccupation with and helplessness regarding the pain.47 A positive physician–patient relationship where psychosocial factors, including psychosocial history and precipitating factors, are addressed, appears to decrease return ambulatory care visits.48

IMPLICATIONS FOR MANAGEMENT OF IBS PATIENTS

Assessment

Evaluating the role of psychosocial factors

Gastroenterologists clearly appreciate the paramount role for psychosocial factors in the development and exacerbation of IBS. In a recent randomized national survey of
US gastroenterologists, 94% of respondents reported asking about psychosocial factors in assessing their IBS patients; the gastroenterologists believed that psychosocial factors played a key role in IBS expression for two-thirds of these patients. Assessing the role of psychosocial factors can be simplified by addressing a few key components (see Table 1).

For every patient presenting with IBS, the clinician should understand the psychosocial context of the condition by addressing the six basic questions listed in the first half (A) of Table 1. For those patients with responses that support the role of psychosocial factors in the illness, further information (which will directly inform subsequent assessment and management) should be gathered. This data would include presence of a concurrent psychiatric diagnosis; a history of unresolved major loss or trauma; and evidence of abnormal illness behaviour.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. For each patient with IBS</td>
<td></td>
</tr>
<tr>
<td>Is the illness acute or chronic?</td>
<td>Chronic illness suggests a greater role for psychosocial factors, which may both contribute to and result from this perpetuation, and it predicts a poorer prognosis.</td>
</tr>
<tr>
<td>What is the patient’s history of illness?</td>
<td>An extensive history of physical complaints, manifold diagnostic procedures and multiple prior unsuccessful treatment attempts increase the likelihood of a key role for psychosocial factors and suggests a behavioural pattern of communicating emotional distress through illness behaviour.</td>
</tr>
<tr>
<td>Why is the patient coming now?</td>
<td>Knowing what led to the patient’s presentation allows the physician to address more specifically the current precipitating factors.</td>
</tr>
<tr>
<td>What is the impact of the illness?</td>
<td>Those with illnesses substantially impairing their daily functioning and quality of life are more likely to require psychosocial adjustments to their condition.</td>
</tr>
<tr>
<td>How does the family interact around the illness?</td>
<td>Family interactions may encourage perpetuation of maladaptive illness behaviour, but the family can also be recruited to help move the patient toward recovery.</td>
</tr>
<tr>
<td>What are the patient’s psychosocial resources?</td>
<td>A poor social network and/or a maladaptive coping style impairs the clinical outcome.</td>
</tr>
<tr>
<td>B. For patients with IBS whose responses to the above questions suggest the import of psychosocial factors</td>
<td></td>
</tr>
<tr>
<td>Is there a psychiatric diagnosis?</td>
<td>Co-existing psychiatric disorders are associated with a worse course of illness, but disorders such as depression and anxiety respond well to treatment.</td>
</tr>
<tr>
<td>Is there a history of unresolved major loss or trauma?</td>
<td>These variables are also associated with a worse course of illness; an understanding and empathic doctor–patient relationship is especially important.</td>
</tr>
<tr>
<td>Does the patient exhibit unhelpful illness behaviour?</td>
<td>Such behaviour can identify potential obstacles to successful management of a patient’s illness.</td>
</tr>
</tbody>
</table>
Identifying the presence of a psychiatric diagnosis

Depressive, anxiety and somatization disorders, which are Axis I 'state' disorders, are especially common in patients with IBS, and gastroenterologists should screen for these in patients with IBS. Regarding depression, gastroenterologists should ask about both depressed and irritable mood, and they should assess closely for anhedonia, the patient's inability to experience pleasure from doing things usually found to be enjoyable. To meet criterion for a major depressive episode, a patient must endorse at least one of these two symptoms. Assessing for anhedonia is critical; depressed patients with physical complaints are more likely to endorse anhedonia than sad mood. Should this screen turn up positive, the physician can subsequently pursue questions about difficulty sleeping, low levels of energy, difficulty concentrating and guilt. A diagnosis of major depression would require 2 weeks or more of substantial impairment by such symptoms.49

Regarding anxiety disorders, the physician should ask whether the patient had been worrying excessively or had difficulty relaxing (symptoms consistent with generalized anxiety disorder), or whether the patient had experienced discrete episodes of anxiety attacks (suggesting panic disorder). Finally, patients with IBS may present with a plethora of somatic complaints (the 'organ recital') consistent with a somatization disorder. It is important not to overdo the diagnostic evaluation and act on each of these two symptoms. Assessing for anhedonia is critical; depressed patients with physical complaints are more likely to endorse anhedonia than sad mood. Should this screen turn up positive, the physician can subsequently pursue questions about difficulty sleeping, low levels of energy, difficulty concentrating and guilt. A diagnosis of major depression would require 2 weeks or more of substantial impairment by such symptoms.49

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Treatment

Approach to the patient

The first step in effectively treating patients with IBS is establishing a therapeutic relationship in which the gastroenterologist actively listens to and considers the patient's concerns; empathically and non-judgementally responds to these questions; educates the patient about diagnosis, prognosis and treatment alternatives; and negotiates the treatment plan with the patient.50 The ability to adopt a 'care' approach, which emphasizes the importance of an ongoing doctor–patient relationship and has as its goal the successful management of illness, as opposed to a 'cure' approach, in which success is defined by disappearance of disease, appears more effective in eliciting a positive outcome for patients.51

Addressing psychosocial factors

While psychosocial factors are often pertinent to a patient's expression of illness, not all IBS patients are as able to appreciate or discuss this relationship. For those patients able to identify such a connection, the gastroenterologist can further investigate how the patient perceives this link through open-ended questioning as well as the use of a bowel chart, which can provide evidence to connect bowel complaints with psychosocial stressors.22 For those patients who do not identify a role for psychosocial
factors, physicians should validate the patient’s expression of their distress as real, while offering that many patients with chronic illnesses experience depression or anxiety at times.

Whether or not they link stresses to worsening illness, many IBS patients are fearful that a physician’s understanding of this link is to discount its reality (‘there is no real disease here, it’s in their head’) and consequently not treat them (‘I can’t help you— you need a psychiatrist’). Physicians need to be especially sensitive to patients’ fears that their symptoms are not taken seriously. They should discuss the relationship of psychosocial and biological factors of disease as inter-related and bi-directional. To suggest a psychiatric diagnosis at the beginning of the relationship with the patient initially impairs proper development of the physician–patient relationship. As the therapeutic alliance develops, and with the patient’s appreciation that the physician takes their illness seriously, the patient is more likely to consider the role of psychosocial factors in their illness. Any psychiatric or psychological intervention should be presented as an adjunctive intervention rather than a replacement intervention to avoid a patient’s inference that they are being abandoned or ‘dumped’.

Education, reassurance and reconceptualization

By actively listening to and encouraging the patient to clarify concerns about the disorder and its prognosis, the physician can identify key fears and misconceptions that may hinder management. Education includes communicating to the patient that their IBS symptoms are real and that the general prognosis for functional bowel disorders is favourable. Reassurance involves identifying and addressing any patient concerns in the context of a proper evaluation. These concerns may include a fear that the physician will stop treating the patient if the medical evaluation is negative; it is important for the physician to confirm an interest in participating in ongoing care. Avoiding false, insincere reassurances (for example, ‘The work-up is negative; don’t worry’) is important; these will be rejected by the patient. Reconceptualizing entails communicating that management rather than cure is the goal, and that the relationship with the physician will be collaborative.

Reinforcing healthy behaviours

Physicians may inadvertently focus on physical symptoms to the exclusion of psychosocial factors, therefore implying to the patient that the physician’s interest depends on the continued presentation of symptoms. The key is to address both medical and psychosocial contributions to the symptoms and to encourage the patient to accept greater responsibility for the care. This approach involves, for example, allowing patients a choice among several appropriate medications or having them help define goals for their treatment which involve activities that they find pleasurable. Reinforcement of these behaviours by physicians leads to patients feeling valued not because of symptoms but because of healthy behaviours.

Use of a mental health professional

Instances for which a consultation by a mental health professional should be considered include (i) when the patient has a psychiatric disorder (depression, anxiety, or somatization) requiring treatment; (ii) when psychosocial factors, such as a newly discovered history of abuse or identification of current abuse, are hindering the
management of IBS; and (iii) there is substantial impairment in social or occupational functioning requiring help with coping techniques. These consultations can occur either by referral to an off-site mental health professional or to an on-site mental health professional within the context of a liaison relationship, in which the mental health professional is an ongoing, integral part of the gastroenterology team. Collaborative approaches, such as the latter, which involve on-site integration of mental health services, may be especially suited for managing chronic diseases that involve psychological or psychosocial impairment.54

**Psychotherapies**

Chapter 9 of this issue reviews the use of various psychological interventions in detail. We wish to underscore that the biopsychosocial model emphasizes a clear role for psychotherapies: by addressing psychosocial factors, these interventions can modify IBS expression both directly and through physiological pathways (via CNS/ENS modulation) (see Figure 3). A recent review of existing studies using a controlled design to compare psychological intervention with conventional medical treatment demonstrated superiority of psychological treatments.22 Of nine studies with patients followed longitudinally (duration 9–40 months), eight showed significantly greater reduction of bowel symptoms with psychological treatments.55–62 This superiority remained regardless of the type of psychotherapeutic intervention, which included cognitive behaviour therapy, exploratory psychotherapy, hypnosis and relaxation management.

**Psychopharmacological interventions**

The biopsychosocial model suggests that psychotropic medications can positively modify the experience of IBS through two paths. First, by successfully treating a concomitant anxiety and/or mood disorder (frequent in IBS patients), psychotropic medications can modify a psychosocial factor, which can help reduce the patient’s experience of IBS. For example, effective anti-depressant treatment of a co-existing major depression in an IBS patient may also improve the course of IBS.

Second, by effectively treating the chronic pain associated with IBS, anti-depressants have a physiological effect on increasing the pain threshold. The exact mechanism is unclear, but anti-depressants appear to act as ‘central analgesics’, which raise the threshold for pain perception by reducing visceral afferent function or enhancing pain inhibitory pathways.63–64 This neuromodulating effect of anti-depressants appears to be independent of their effect on depressed mood. The dose necessary for pain relief is approximately one-half to one-third of that needed for anti-depressant efficacy, and the analgesic effect can begin any time from immediately up to 10 weeks.65 The tricyclic anti-depressants have received the most study and appear effective in reducing chronic pain associated with IBS.63–68 The norepinephrine reuptake blockade seen with tricyclic anti-depressants may probably be more effective in treating neuropathic pain than serotonin reuptake blockers such as fluoxetine.69 The effectiveness of selective serotonin reuptake inhibitors (SSRIs) on visceral pain (as seen with IBS) remains uncertain.

Side-effect profiles and the patient’s presenting complaints (including both IBS and psychological symptoms) are key determinants in choosing anti-depressants. For example, if a patient complained primarily of abdominal pain with diarrhoea, a tricyclic anti-depressant could provide greater benefit because of its anti-cholinergic activity (and because the SSRIs often have side effects of cramping and diarrhoea). Also, should
a patient have predominant depressive complaints of poor sleep or present with substantial anxiety, a more sedating tricyclic may provide better treatment than an activating SSRI. Conversely, if the patient’s primary gastrointestinal complaints involved constipation or abdominal bloating, or if a patient’s primary complaint involved lethargy associated with a depression, the pro-kinetic, activating effects of an SSRI may provide greater benefit.

As noted earlier, it is of paramount importance that psychotropic medications be presented as an adjunctive intervention within a multi-component treatment plan. The gastroenterologist needs to explain clearly the indications, target symptoms, potential side effects and time frame for side effects as well as benefits (side effects are likely to occur in the first few days of treatment and often resolve within the first 1–2 weeks; the onset of anti-depressant or analgesic benefits may take as long as 1–2 months). Close communication between patient and physician are especially important in the first few weeks of beginning psychotropic medications to help ensure proper compliance and an adequate trial at an appropriate dose.

SUMMARY

Psychosocial factors, as appreciated within the context of the biopsychosocial model, are necessary to understand the clinical expression of IBS. First, they play an important role in predisposing patients to the development of IBS, as demonstrated by the greater likelihood of a history of physical or sexual abuse in IBS patients compared with patients with organic gastrointestinal diseases.\(^ {15-17}\) Second, they are key precipitants to the initial expression as well as subsequent exacerbations of IBS, as exemplified by the research showing that severely stressful life events preceded the development of functional bowel disorders significantly more often than before the development of organic gastrointestinal disease\(^ {18}\), and that the frequently co-existing psychiatric disorders often precede the onset of IBS.\(^ {24}\) Third, psychosocial factors, such as a maladaptive coping style\(^ {12,27}\) appear to be associated with the perpetuation of a worse course of illness.

Addressing psychosocial factors leads to improvement in the clinical outcome for IBS patients.\(^ {47,48}\) Important components of assessment include screening patients for evidence of pertinent psychosocial variables and identifying the presence of psychiatric disorders. The physician must identify the psychosocial variables specific to each patient that modify the clinical expression of IBS. Key management components include adopting a ‘care’ (rather than ‘cure’) approach in the context of an ongoing, collaborative therapeutic alliance; presenting any psychological or psychiatric intervention as part of a multi-disciplinary treatment approach rather than an indication that the physician is ‘giving up’ on the patient; educating and reassuring the patient during the course of care; and using a mental health professional (preferably on-site) when indicated.

Psychotherapy and anti-depressant medications (especially tricyclic anti-depressants) are effective in decreasing bowel symptoms (including abdominal pain) in addition to whatever help they may offer to ameliorate concomitant psychiatric disorders.

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REFERENCES


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