Symptom Based Psychology for Functional Gastrointestinal Disorders

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How do we understand the many studies that show an increase in negative moods like anxiety or depression in those suffering from functional gastrointestinal (GI) and pain conditions? Are these psychological factors an important cause for the development and/or maintenance of symptoms in irritable bowel syndrome (IBS), gastroesophageal reflux disease (GERD), and other functional GI disorders? Or are they a result of maybe years of disrupted life activities and frequent periods of intolerable symptoms? Are the negative mood conditions associated with IBS, for example, really the same as those identified in the psychiatric literature – for example is the anxiety associated with IBS the same in terms of symptoms and brain chemistry as anxiety associated with conditions like panic disorder, phobias, or general anxiety?

At the Center for Neurobiology of Stress at UCLA and the VA Hospital in Los Angeles (uclacns.org) we have been interested for some time in a better understanding of the relationship between negative moods and functional disorders. As we will see, the unfolding story indicates there is some truth in all the relationships mentioned above and a better understanding of negative mood states has important implications for self-management as well as medical disease management of functional GI disorders.

Disorders of Mood – Categories or Dimensions?

One of the difficulties in bringing clarity to the relationship of mood and physical symptoms is the variety of ways in which negative moods can be described. If we say, for instance, that IBS is associated with anxiety we may mean an anxiety disorder, a greater than expected level of anxious mood, or even a limited type of anxiety that is specific to IBS symptoms. In psychiatry, disorders of mood are defined by the presence of a cluster of symptoms which occur with sufficient frequency and severity to be disruptive of one's life activities. For example, Generalized Anxiety Disorder (GAD) is diagnosed when one experiences on most days, for at least six months, three or more of a set of six symptoms (e.g. feeling wound-up, tense, or restless; concentration problems; significant tension in muscles, etc) and these symptoms cause "clinically significant distress or problems functioning in daily life." A unique characteristic of GAD is that the excessive anxiety and worry is related to a variety of events and situations and not just a specific circumstance (a specific fear would be classified as a Phobic disorder).

An important, and controversial, part of the psychiatric diagnostic system is that it divides the population into just two groups (those with and without, in this case, GAD) based on a somewhat arbitrary cutoff point of severity. In fact the symptoms used in the classification are quite common and it could be more accurate to describe the population as showing a continuum of anxiety symptoms from none to very severe. Many psychological tests utilize this type of continuous (dimensional) scale to measure the severity of symptoms instead of a yes/no (categorical) classification.

The difference between a categorical vs. dimensional view of mood symptoms is especially important when we are trying

to understand the relationship of mood changes with other symptoms like those of a functional GI disorder. It is clear that everyone with IBS, for example, does *not* have a psychiatric disorder, but does this mean that anxiety symptoms do not play a significant role in IBS? Several large studies that have used random surveys of the general population have in fact found a significant association between IBS and negative mood symptoms, especially anxiety. In our own studies we have found that negative mood is one of the key determinants of poor quality of life associated with IBS (along with fatigue, fear of a serious illness, and presence of severe pain). It is also important to consider that there are negative emotions that may significantly impact functional GI disorders beyond just anxiety or depression, such as anger or shame.

Symptom-specific Psychological Characteristics

Whether a psychological characteristic is defined categorically as in the psychiatric diagnostic system (e.g. GAD) or as a dimension like those assessed as in many of the psychological scales of anxiety or depression, they are still almost always based on observation and study of patients from mental health settings. Therefore, although increases in negative mood appear to be common in functional GI disorders and they clearly impact the quality of life of patients; our group as well as others have had concerns that the standard psychiatric assessments do not capture very well the specific types of worries, fears, and thoughts that may characterize the negative moods of those with functional GI disorders. To better understand these issues we have begun to study symptom based psychological constructs like symptom-specific anxiety and symptom catastrophizing. For example, individuals with IBS may not have symptoms of anxiety in general, but only in relation to GI related events or sensations (like meals, abdominal pain, or diarrhea), i.e. *GI symptom-specific anxiety*.

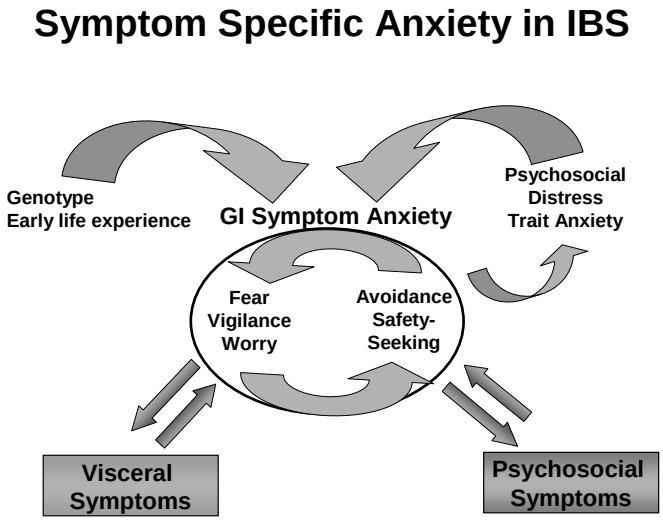
Table 1 lists items from the Visceral Sensitivity Index, which is a scale we developed to measure GI symptom-specific anxiety. An important difference between this scale and one of general anxiety is that it targets fears of the sensations, consequences, and the contexts (e.g., places or events) that surround GI symptoms. It allows for discrimination between having anxiety that is related to IBS and anxiety regarding other areas of one's life. Figure 1 shows in graphic form how we think

GI symptom-specific anxiety fits into the overall picture of a complicated syndrome like IBS.

Table 1: Sample items from the Visceral Sensitivity

- I often worry about problems in my belly.
- I often feel discomfort in my belly could be a sign of a serious illness.
- Because of fear of developing abdominal discomfort, I seldom try new foods.
- When I enter a place I haven't been before, one of the first things I do is to look for a bathroom.
- I have a difficult time enjoying myself because I cannot get my mind off of discomfort in my belly.

Figure 1: Model of GI Specific Anxiety



GI symptom-specific anxiety is characterized by increased fear and worry about GI sensations (sometimes even mild ones), and increased attention to them (vigilance). Another part of GI symptom anxiety is avoidance of any situation that might be

associated with symptoms and a strong desire to limit oneself to safe places and activities. These behaviors, which are used to try and limit anxiety in the short run, actually increase and prolong anxiety overall.

GI symptom anxiety is also directly related to visceral symptoms – it can be increased by symptoms but also can help maintain symptoms via increased stress responses in the gut. Vulnerability to GI symptom anxiety may also be shaped by relevant stressful early experience, hereditary variables, a general predisposition toward anxiety and worry (trait anxiety), and life stressors.

In our recent research we have shown that symptom-specific anxiety may be a more important factor than general negative mood in terms of its impact on IBS symptoms and quality of life. We have shown that more general psychological characteristics like anxiety and depression really only seem to influence IBS symptoms if they are associated with symptom-specific anxiety. For example, general worries or anxiety as described above, may not negatively impact IBS unless they are associated with fears and concerns specific to IBS symptoms. Alternatively, the presence of significant symptom-specific anxiety in the absence of more general anxiety would still be an important feature in determining the severity and persistence of IBS symptoms.

Another symptom-specific psychological characteristic involves the ability of an individual to manage with symptoms. We use the term 'catastrophizing' to refer to a set of thoughts, beliefs, and behaviors that occur with feeling overwhelmed, hopeless, and impotent in the face of symptoms. Like symptom-specific anxiety, catastrophizing in relation to IBS can be a significant problem even if one does not feel or cope this way in relation to other areas of her/his life (e.g., work, family, etc). For someone with IBS or any other chronic health problem, catastrophizing clearly is not helpful and is in fact strongly predictive of poor health outcomes following standard medical care and poor quality of life.

Symptom-specific Psychology and the Development of Functional GI Symptoms

One commonly asked question with regard to psychological issues in functional GI disorders is which comes first, the disturbed mood or the GI symptoms? There does not seem to be a simple answer to this question. In our research we have tried to highlight what we see as a bidirectional or interactive relationship between symptoms and psychological factors, especially symptom-specific psychological factors. For example, we have shown that even a relatively mild experimental stressor, like the frustrating experience of listening to two different types of music simultaneously, can increase sensitivity to visceral sensations in IBS patients and sensitivity to acid exposure in patients with gastroesophageal reflux disease (GERD). We and others have also shown that major stressors are associated with increased symptoms over the next few months in patients with IBS and GERD. Thus, stress can significantly increase symptoms.

The severity of IBS symptoms, and especially severity of pain, is a major stressor for patients, leading to increased doctor visits and poor quality of life. So we would argue that while the development and persistence of IBS symptoms is likely to involve GI factors (like altered sensitivity or perhaps changes in immune or infectious status within the bowel), there is additionally an important role of psychological factors including negative moods and coping ability. Understanding this 'vicious cycle' of increased symptoms leading to increased psychological symptoms, which in turn both directly and indirectly lead to worsening GI symptoms may be the key to developing better overall strategies for management and treatment of functional GI disorders.

Neurobiology of Functional GI Disorders

The ideas presented so far are based on a view of functional GI disorders that does not separate mind and body but instead tries to understand how the big brain (in our heads) and the little brain (in our GI tract) influence each other to generate health, healing, or illness. At our Center we have been using

new technologies to examine directly how the brain responds to GI sensations and conversely how the brain influences activity in the GI system. A primary technology for this task is brain imaging using functional Magnetic Resonance Imaging (fMRI) or Positron Emission Tomography (PET). These tests can provide images of the brain and measures how it responds to a particular stimulus or event.

We have not abandoned the very important tools of asking our subjects about their experiences, but brain imaging gives us a more direct measure of the role specific areas of the brain play in increasing or decreasing (modulating) GI symptoms. For example we have recently examined how the brain responds to the anticipation of an uncomfortable distension in the rectum (visceral stimulus). In subjects without IBS, during a period before the painful stimulus occurs we see a lowering of activity in certain brain areas, presumably to help buffer the increase in activity that will come with pain. In IBS patients this preparatory activity was not nearly as strong. In other words, IBS patients did not engage the brain circuits which help decrease the sensation of impending pain. In addition, we found that when IBS patients were more fearful of the visceral stimulus, they had less preparatory activity measured in their brain and, in fact, they had greater feelings of discomfort when the stimulus occurred. By using these novel techniques we hope to increase our understanding of how symptom-specific responses may contribute to either increasing symptoms or in contrast, help to reverse the vicious cycle of emotions and GI symptoms described above.

Implications of a Symptom-specific Psychology for Treatment

If we accept that psychological responses, and especially symptom relevant psychological responses, play a role in the persistence and exacerbation of functional GI disorder symptoms, it would be important to try and target these responses as part of an overall treatment plan. This can be done in several ways. There is now a large amount of very positive research showing that certain types of psychological treatments, including cognitive behavioral therapies and hypnosis, can have very beneficial impact on IBS. Cognitive behavioral therapy aims to help patients change their habitual thoughts, feelings, and behaviors that may magnify stress responses and negative moods by applying a series of self-exploration exercises and stress reducing strategies. Hypnosis uses relaxation techniques and self-suggestion to help patients gain a more positive feeling about their GI function. It is not surprising that these treatments are targeted in large part to symptom-specific problems such as symptom fears and coping. An exciting development in this area is a recent study which showed that for many functional GI disorder patients very brief treatments (4 or less sessions) that are well targeted to these symptom-specific problems can be highly effective, and the longer treatment times often used with primary mental health problems may *not* be necessary.

In addition, psychological treatments can lead to decreased GI symptoms and not only changes in mood or coping with symptoms as some have previously suggested. At our Center, we have been interested in very specific ways to change symptom-specific anxiety and are currently testing even more targeted treatment approaches to help change the way the brain responds to sensations in the bowel using psychological techniques. It should be emphasized that these psychological approaches may be used in combination with medications that improve the disruptions in GI function or nervous system activity that exacerbate symptoms – attacking all sides of the 'vicious cycle.'

Summary

There is a truism in psychology that 'people are complex.' There is now strong evidence that functional GI disorders are certainly complex and involve both the brain and the GI tract. However, we also have a growing understanding of the differences between the psychology of mental health disorders and functional GI disorders as well as how one may lead to vulnerability in the other. Our belief is that further study of these issues will lead to improved self and medical care for patients and, most importantly, ways to prevent the

development of chronic conditions like IBS and the other functional GI disorders.

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The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our website at: www.iffgd.org or www.aboutIBS.org.

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