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Review article

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PSYCHOSOCIAL FACTORS IN IRRITABLE BOWEL SYNDROME

SUMMARY

Irritable bowel syndrome (IBS) is the most common gastrointestinal disorder encountered by primary care physicians and gastroenterologists with an estimated prevalence of 8% to 17% in the general population. This paper provides a review of available literature in the field of psychogastroenterology, that supports the biopsychosocial model as the basis for understanding and treatment of IBS, as well as epidemiological and clinical data associated with the influence of psychosocial factors on the gut physiology, symptom presentation, behavior related to health conditions and the final outcome of disorder. The psychological assessment of IBS patients, compared with normal subjects or other medical patients, shows a high prevalence of stress reports, abnormal personality features, psychiatric diagnoses and illness behavior. Psychosocial factors are important with regard to their effects on the gut physiology, their modulation of the symptom experience, their influence on illness behavior, their impact on the outcome and the choice of therapeutic approach. Psychological factors, such as the type of personality, health believes, the history of previous physical or sexual abuse may play an important role in determining health care-seeking behavior. The examination of psychosocial histories of the IBS patients suggested that many of the IBS features might be more characteristics of patient's coping and adoption patterns than of the very disease. The psychiatrist may be of assistance by treating IBS as a biological vulnerability that worsens with psychological distress, providing proper diagnosis and treatment of coexisting psychiatric disease and maladaptive illness behavior, and developing multimodal treatment plan including psychotherapeutic and pharmacological management.

Key words: **irritable bowel syndrome, psychosocial factors, personality traits, health-care seeking, sexual abuse**

INTRODUCTION

Irritable bowel syndrome (IBS) is the most common gastrointestinal disorder encountered by primary care physicians and gastroenterologists with an estimated prevalence of 8% to 17% in the general population (1). While patients with symptoms of IBS represent 40-70% of referrals to gastroenterology institutions, only a half seeks medical attention (2).

Psychosocial factors influence the gut physiology, symptom experience, health behavior and the outcome. Although the gut is physiologically responsive to emotional and environmental (stressful) stimuli, there is no consistent psychosocial abnormality associated with IBS (3,4).

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This paper provides a review of the existing literature in the field of psychogastroenterology, that supports the biopsychosocial model as the basis for understanding and treatment of IBS, as well as and epidemiological and clinical data associated with the influence on psychosocial factors on the gut physiology, symptom presentation, behavior related to health conditions and the final outcome of disorder.

BRAIN-GUT INTERACTION

Several brain nuclei, especially the locus ceruleus (LC) that modulate normal gastrointestinal function also coordinate emotional, physiologic and fear-conditioning reactions to perceived danger as components of the innate "fear circuit". Thus, the locus ceruleus is one possible CNS area having both afferent and efferent connection to the gut that might constitute the "missing link". LC receives rich afferent input from the gut and experimentally induced colonic distension increases the firing rate of the LC, which in turn, mediates increases in sympathetic outflow and CNS arousal (5). Gastrointestinal symptoms (cramping, pain) cause CNS arousal via the afferent input to the LC potentially creating an uncontrolled positive-feedback cycle of gastrointestinal distress and CNS arousal. A cycle between the brain and the gut has been proposed as a model for the IBS.

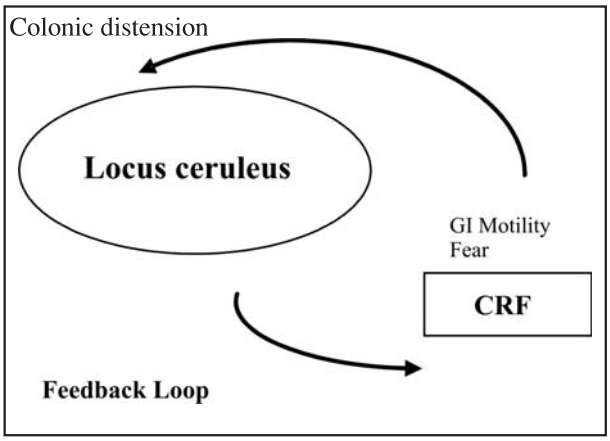

Figure 1. Brain-gut Loop Model for IBS (9)

Abbreviations:
CRF=corticotroping-realising factor
GI=gastrointestinal

In the cycle individuals with increased CNS arousal could experience gastrointestinal distress and increased gastrointestinal motility via CNS-mediated sympathetic outflow. The locus ceruleus may combine cortical, limbic and visceral sensory stimuli and then redistribute the output among the same systems in a manner that does reach conscious awareness. Thus, internal bowel events may cause discharge of the locus ceruleus, greater anxiety and psychophysiological gastrointestinal symptoms. Normalization of hyperactivity of the LC to afferent input is one of the proposed mechanisms of action of anxiolytics and antidepressants in reducing arousal associated with anxiety and mood disorders (5-7). The limited literature regarding the use of psychopharmacologic agents in the IBS patients, even those with no apparent psychiatric disorder, derive benefits from treatment (5,8).

PSYCHIATRIC DISORDERS, LIFE STRESS, ABUSE HISTORY AND OTHER PSYCHOLOGICAL FACTORS

A. Psychiatric disorders

For IBS, the most frequent comorbid psychiatric disorders seen include: 1) anxiety disorders (panic and generalized anxiety disorder); 2) mood disorders (major depression and dysthymic disorders); 3) somatoform disorders (hypochondriasis and somatization disorder). According to Lydiard (9) 94% of IBS patients had lifetime prevalence for an Axis I psychiatric disorder (table 1).

*Table 1. Lifetime comorbidity of psychiatric illness in IBS **

Psychiatric diagnosis by DSM-III-R criteria	Comorbidity (%)	
	Lydiard (9) n=35 IBS	Walker (15) n=28 IBS
Any psychiatric diagnosis	94	93
Major depression	46	61
Panic disorder	31	29
Generalized anxiety disorder	34	54
Social phobia	29	
Somatization disorder	26	32
Any phobia	/	50
Agoraphobia	/	25
Simple phobia	/	29
Alcohol abuse or dependence	/	32
Panic disorder with agoraphobia	20	/
Dysthymia	14	/

*Table adapted from Walker et al. (15)

The rates for depression (46%), generalized anxiety disorder (34%), panic disorder (31%) and somatization disorder (26%) were similar to those reported by Walker et al. (10,11). The prevalence of IBS was 4-6 times more likely in persons with panic disorders than in persons without panic disorders and 41% of patients with anxiety or mood disorders met the criteria of IBS (12).

Although the psychiatric comorbidity among IBS patients has been extensively reviewed (13,14), the nature of this association has not been well established. There are at least two possible ways of explanation of IBS and psychiatric comorbidity possible relation:

a. IBS could be a precursor of psychiatric disorders. According to somatopsychic model psychiatric (psychiatric) symptoms develop secondary to the stress of a chronic physical disease.

We could not find any study to support the idea that symptoms of IBS temporally precede mood or anxiety symptoms. The relative lack of psychiatric illness in a comparison group of patients with inflammatory bowel syndrome (19%) suggests that the magnitude of psychiatric distress in IBS cannot be explained as a reaction to chronic stress of physical illness.

b. IBS could be an epiphenomenon, a form of psychiatric disorder or, somatic expression of psychiatric illness – a psychosomatic model. This view is compatible with the idea that somatic symptoms like those of IBS are, either secondary somatic reactions to psychological distress, or amplifications of mildly aversive symptoms that are normally present, but are reified into a "disorder" by psychological or psychosocial factors (15). These factors must affect the way symptoms are manifested or experienced in IBS, as well as in treatment-seeking behavior. More than a half of IBS patients and non-patients (with symptoms compatible with IBS) report that psychologically stressful events preceded the onset or exacerbate their bowel symptoms, that is one of the facts that supports the psychosomatic model (16, 17).

B. Personality, health believes and illness behavior

Like patients with other medical disorders, patients with IBS have higher trait anxiety and neuroticism scores than people without health problems or the IBS population who do not seek medical attention with similar gastrointestinal complaints (18). However, there is no personality profile unique to IBS. Patients with IBS had significantly higher scores on a number of Minnesota Multiphasic Personality Inventory (MMPI) scales and showed lower ego strength (14). Surveys have shown that the IBS patients presented a pattern of reporting multiple somatic complains and overutilizing health care services, known as "illness behavior". Whitehead et al. (19) suggest that a pattern of childhood social learning contributes to the development of illness behavior and that patients' preoccupation with gastrointestinal symptoms may be learned from the parents' response to bowel complaints. The complex interaction of physical illness, personal and family responses to illness and learned illness behavior can be difficult to disentangle. A number of studies have examined the psychosocial histories of the IBS patients and have suggested that many of the features of IBS may be more characteristic of patient's coping and adoption patterns than of disease. Perhaps people with IBS who frequently have premorbid personality characteristics that modulate the way they perceive and become distressed by physiological reasons, usually present depression, anxiety symptoms, and more health-care seeking behavior. Both depression and anxiety have been demonstrated to interfere with habituation to aversive symptoms such as tinnitus and pain, thus amplifying distress and disability (20).

IBS population who do not seek medical attention show greater coping capabilities and psychological stability under stress. These adaptive psychological features ("wellness behaviors") may contribute to the ability of people with chronic symptoms to cope: to experience their illness as less disabling and to become more self-sufficient in their health care.

C. Sexual and physical abuse and IBS

Drossman and colleagues (21) reported that women with IBS and other functional gastrointestinal disorders presented substantial previous physical and sexual abuse at a significantly higher, up to ten times higher rate, than women with comparably severe gastrointestinal illness of organic etiology. The rates of physical and sexual abuse in the IBS patients attending tertiary care facilities ranged from 40% to over 60% (22), while a community sample of IBS sufferers presented the rate of 22% of the aforementioned abuse.

Since high frequencies of abuse history are seen with other chronic pain conditions, a history of abuse is not etiologic for IBS, but is associated with a tendency to communicate psychological distress trough physical symptoms (22). Increased health care utilization among abused individuals was not predicted by abuse, but by the severity of abdominal pain, suggesting that the role of victimization requires further investigation in IBS.

D. Health-care seeking

According to Drossman (23), over one-half of individuals who met the criteria for functional bowel disorder had never been to a doctor with this complaints. He suggested that psychological factors, such as type of personality, health believes, illness behavior, the history of physical or sexual abuse, may play an important role in determining health care-seeking behavior. The IBS patients are psychosocially different from non-patients (the IBS population who do not seek medical attention) and normal subjects. They have a higher frequency of abnormal personality traits on the MMPI (24), frequently report pain and other somatic complaints, particularly when under stress, tend to deny or minimize emotional concerns, display concern about health and bodily functions, and require reassurances about their health. The IBS non-patients exist on a psychosocial continuum between patients and normal subjects, but are more similar to normal subjects. In other words, the psychological disturbances characterize a subset of people with IBS – those who see physicians. These findings lead us to conceptualize the role for psychosocial factors in IBS.

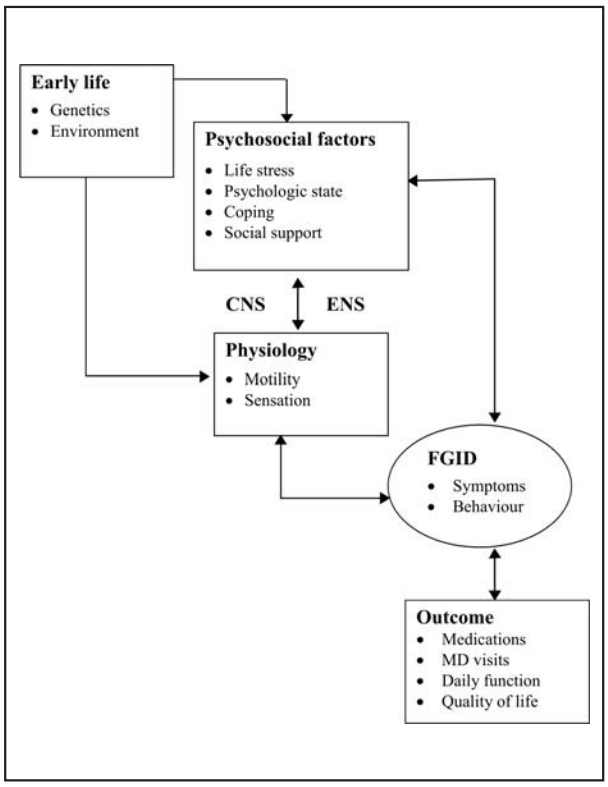

Figure 2. A biopsychosocial conceptualization of the pathogenesis and clinical expression of the functional gastrointestinal disorders (FGID) (8)

Abbreviations:
CNS-central nervous system
ENS-enteric nervous system

Features of motility, personality, abuse history, health concerns, and treatment-seeking differs between patients with IBS and healthy controls, but they are not specific to IBS. They occur in other patients with chronic medical conditions, and/or psychiatric disorders. It is uncertain whether these findings are characteristic of all with IBS or represent the subset who see physicians. If the latter were true, than these factors may influence the illness experience and health care seeking and more effective treatment would require modifying the psychological determinants of the illness. The physician must also address and modify the psychosocial factors possibility contributing to their health care seeking.

CONCLUSION

Psychological assessment of the IBS patients, compared with normal subjects or other medical patients show a high prevalence of stress reports, abnormal personality features, psychiatric diagnoses and illness behavior. It should not be implied that a distinct personality profile exists; IBS is a psychosocially heterogeneous disorder, and different psychological subgroups likely exist (4). The IBS patients differ in illness behavior (23), i.e., the manner in which symptoms are perceived, evaluated, and acted upon in society (25). Psychological factors, such as a type of personality, health believes, illness behavior, the history of physical or sexual abuse, may play an important role in determining health care-seeking behavior (23). Examination of the psychosocial histories of the IBS patients suggested that many of the features of IBS may be more characteristic of patient's coping and adoption patterns than of disease. Individuals with IBS who frequently have premorbid personality characteristics that modulate the way they perceive and become distressed by physiological reasons usually present depression, anxiety symptoms, and more health-care seeking behavior. So, it is more reasonable to conclude the converse: patients with abnormal psychological scores may amplify symptom reports and illness behavior (26). Thus, psychosocial factors may influence whether a person with IBS perceives the condition as an illness requiring medical care, or a "pain in the gut" not worthy of further attention or to be self-treated. The implications are that for many patients' treatment of the bowel symptoms alone may not be sufficient to produce clinical improvement. Thus, it is clinically important to individually determine the psychosocial factors contributing to a patient's illness (27). Future researches may lead to interventions to help modify the degree of distress and illness behavior of many of these patients.

The psychiatrist may be of assistance by reframing IBS as a biological vulnerability that worsens with psychological distress, providing proper diagnosis and treatment of coexisting psychiatric disease and maladaptive illness behavior, and developing multimodal treatment plan including psychotherapeutic and pharmacological management. Psychotherapy may be useful to restore adaptive coping mechanisms, and antidepressants may be effective in patients with prominent mood symptoms.

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PSIHOSOCIJALNI FAKTORI U SINDROMU IRITABILNOG KOLONA

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SAŽETAK

Sindrom iritabilnog kolona (IBS) je jedan od najzastupljenijih poremećaja u primarnoj zdravstvenoj zaštiti, ali i u gastroenterologiji, sa procenjenom prevalencom od 8% do 17% u opštoj populaciji. Ovaj rad predstavlja pregled dostupne literature sa područja psihogastroenterologije koja zastupa biopsihosocijalni model kao osnov za razumevanje i tretman sindroma iritabilnog kolona, kao i epidemiološke i kliničke podatke vezane za uticaj psihosocijalnih faktora na fiziologiju gastrointestinalnog trakta, način prezentovanja simptoma, ponašanje vezano za pitanja zdravlja i bolesti, kao i pitanje krajnjeg ishoda poremećaja. Psihološka procena IBS pacijenata, u poredjenju sa zdravom populacijom, pokazuje visoku prevalencu abnormalnih crta ličnosti, psihijatrijskih poremećaja, prisustvo stresa i "ponašanje bolesnika" među pacijentima obolelim od IBS. Psihosocijalni faktori su od važnosti jer utiču na fiziologiju gastrointestinalnog trakta, modulišu način na koji se simptomi doživljavaju, utiču na ponašanje vezano za bolest, kao i krajnji ishod poremećaja i izbor terapijskog pristupa. Psihološki faktori, kao što su tip ličnosti, stavovi vezani za pitanja zdravlja i bolesti, postojanje fizičke ili seksualne zloupotrebe u prošlosti, mogu igrati važnu ulogu u samoselekciji onih pacijenata koji će zbog svojih tegoba potražiti lekarsku pomoć. Uvid u istoriju bolesti sa posebnim osvrtom na psihosocijalne faktore, ukazuje da mnoge karakteristike sindroma iritabilnog kolona predstavlja pre karakteristike pacijentovih kupirajućih i adaptivnih strategija na bolest, nego odlike samog poremećaja. Uloga psihijatara je da sindrom iritabilnog kolona tretira kao biološku vulnerabilnost koja može rezultirati poremećajem u uslovima psihološkog distresa, da postavi adekvatnu dijagnozu i sprovede terapiju psihijatrijskog poremećaja koji se istovremeno javlja sa sindromom iritabilnog kolona, ali i da utiče na maladaptivno ponašanje razvijajući multimodalni terapijski pristup koji će uključiti psihoterapijski i farmakoterapijski postupak.

Ključne reči: **sindrom iritabilnog kolona, psihosocijalni faktori, crte ličnosti, traženje lekarske pomoći, seksualna zloupotreba**