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Biopsychosocial model of treatment of functional dyspepsia: the modern role of the medical psychologist according to the Rome V criteria

More than two millennia ago, Hippocrates stated: “It is far more important to know what sort of person has a disease than what disease a person has.” Although this statement long predates the era of evidence-based medicine, it remarkably reflects the philosophy of patient-centered care. Today, this concept has gained a solid scientific foundation through the biopsychosocial model and the concept of Disorders of Gut–Brain Interaction (DGBI), which constitute the conceptual basis of the Rome V criteria. This paradigm recognizes the need for multidisciplinary patient management and provides the rationale for integrating the medical psychologist as an essential member of the multidisciplinary team. To analyze the role of the medical psychologist in the multidisciplinary management of patients with functional dyspepsia, a gastroduodenal disorder of gut–brain interaction, in accordance with the Rome V criteria conceptual framework, and to highlight the importance of the biopsychosocial model, psychological phenotyping, assessment of psychosocial factors, and psychological interventions in implementing patient-centered care. Contemporary management of functional dyspepsia should include not only pharmacological treatment and dietary recommendations but also evidence-based psychological interventions, including cognitive behavioral therapy, psychoeducation, stress management strategies, and mindfulness-based interventions. Such an integrated approach provides more comprehensive and sustainable clinical outcomes and forms the basis of personalized, patient-centered care, in which the medical psychologist is not merely an additional consultant but an integral member of the multidisciplinary team. Integration of the medical psychologist into the multidisciplinary team managing patients with Disorders of Gut–Brain Interaction facilitates the early identification of psychosocial factors contributing to symptom persistence, improves the effectiveness of comprehensive treatment, enhances treatment adherence, reduces unnecessary healthcare utilization and inappropriate diagnostic procedures, and ultimately improves patient’s prognosis and quality of life.

Key words: functional dyspepsia, functional gastrointestinal disorders, disorders of gut-brain interaction, biopsychosocial model, medical psychologist, Rome Criteria V.

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Біопсихосоціальна модель лікування функціональної диспепсії: сучасна роль медичного психолога відповідно до Римських критеріїв V

Понад дві тисячі років тому Гіппократ висловив: «Набагато важливіше знати, яка людина має хворобу, ніж знати, яку хворобу має людина». Ця теза існує набагато довше ніж сучасна доказова медицина та відображає філософію пацієнт-орієнтованого підходу в лікуванні. Сьогодні вона має своє наукове обґрунтування в біопсихосоціальній моделі та концепції розладів взаємодії кишківника та головного мозку (Disorders of Gut-Brain Interaction, DGBI), яке стало основою Римських критеріїв V. Саме цей підхід визнав необхідність мультидисциплінарного ведення пацієнтів і обґрунтування ключової ролі його в цій команді. Мета роботи – провести аналіз ролі медичного психолога у веденні пацієнтів із функціональною диспепсією, що є наслідком порушення осі кишківник-головний мозок відповідно до висновків Римських критеріїв V, висвітлити роль біопсихосоціальної моделі, психологічного фенотипування, оцінки психосоціальних факторів та психологічних інтервенцій в застосуванні пацієнт-орієнтованого лікування. У сучасній моделі терапія функціональної диспепсії має включати не лише фармакотерапію та дієтичні рекомендації, але й психологічні інтервенції (когнітивно-поведінкову терапію, психоосвіту, методи керування стресом, майндфулнес), що забезпечує більш комплексний і стійкий клінічний ефект. Такий підхід формує основу персоналізованої та пацієнт-орієнтованої допомоги, у якій медичний психолог стає не додатковим консультантом, а повноправним членом мультидисциплінарної команди. Інтеграція медичного психолога в мультидисциплінарну команду для лікування розладів взаємодії кишківника та головного мозку дозволить своєчасно виявити психосоціальні чинники, що підтримують симптоми, підвищити ефективність комплексного лікування, покращити комплаєнс, зменшити частоту повторних звернень і необґрунтованих діагностичних процедур, покращити прогноз та якість життя пацієнта.

Ключові слова: функціональна диспепсія, функціональні гастроінтестинальні розлади, розлади взаємодії кишківника та головного мозку, біопсихосоціальна модель, медичний психолог, Римські критерії V.

‘It is far more important to know what sort of person has a disease than to know what disease a person has.’
Hippocrates

Introduction. The term ‘functional gastrointestinal disorders’, hereafter referred to as FGIDs, currently encompasses all types and variants of functional dyspepsia of the gastrointestinal tract. In recent decades, FGIDs have been used to describe chronic gastrointestinal symptoms in the absence of structural and/or biochemical changes in the patient. Initially, this term was used as a diagnosis of exclusion, or as a synonym for a ‘non-existent’ or ‘psychogenic’ condition, which had a negative impact on patient compliance, their psychological state and trust in their doctor [1].

Today, epidemiological studies show that disorders of gut–brain interaction (DGBI) are the most common in gastroenterology. Recent international population-based studies indicate that they are diagnosed in around 40 per cent of the general population, whilst functional dyspepsia affects 7–10 per cent of the adult population worldwide. These conditions significantly impair quality of life and work capacity, whilst increasing the economic burden on the healthcare system [2].

Modern advances in neurogastroenterology, psychoneurobiology and the study of the microbiome have brought about significant changes in our understanding of the nature of these disorders, as clearly reflected by the international expert community in the Rome IV criteria (2016) and further refined in the Rome V criteria (2026). Thus, a key achievement has been the abandonment of the concept of functional gastrointestinal disorders (FGID) and the introduction of the term ‘gut-brain interaction disorders’ (GBID). This demonstrates that the underlying cause of symptoms is an imbalance in the complex interaction between central and peripheral mechanisms, rather than simply the absence of organic pathology. The Rome V criteria guidelines place greater emphasis on a patient-centred model of care and the establishment of a multidisciplinary approach to patient management. Thus, alongside the assessment of clinical symptoms, significant attention is devoted to improving quality of life, the impact on physical activity, psychosocial determinants of health, and patient-reported outcomes. Consequently, the role of the medical psychologist shifts from a supporting one to a key one within the multidisciplinary team. It is precisely this biopsychosocial model that helps to assess not only gastrointestinal symptoms, but also depression, anxiety, somatisation, coping strategies, stressors, symptom catastrophising and treatment compliance [3].

Thus, the integration of psychological interventions into drug therapy puts into practice the principle of the biopsychosocial model, as reflected in the Rome V criteria, and makes the involvement of a medical psychologist in the treatment process mandatory.

Aim of the study: to analyse the role of the medical psychologist in the management of patients with functional dyspepsia resulting from a disruption of the gut-brain axis, in accordance with the Rome V criteria; to highlight the role of the biopsychosocial model, psychological phenotyping, the assessment of psychosocial factors and psychological interventions in the application of patient-centred care.

Main part. If we analyse the main paradigm shifts from the Rome III criteria through the Rome IV criteria to the Rome V criteria, these can be summarised in the table shown in Figure 1.

The development of a patient-centred approach to the management of patients with mental health conditions is linked to the biopsychosocial model of care. This model was proposed in the 1970s by the American psychiatrist and general practitioner George L. Engel as an alternative to the traditional biomedical model. The biopsychosocial model is based on the principle that the onset, course and treatment of diseases are determined by the interaction of biological, psychological and social factors, which must be taken into account during the diagnosis, treatment and rehabilitation of the patient. It is this model that formed the basis of the modern concept of treating DGBI and was further developed

Aspect	Rome Criteria III (2006)	Rome Criteria IV (2016)	Rome Criteria V (2026)
Concept and terminology	Functional gastrointestinal disorders (FGIDs)	Functional gastrointestinal disorders (FGIDs)	Disorders of gut–brain interaction (DGBI)
Understanding of pathogenesis	• Motor disturbances • Visceral hypersensitivity • Psychosocial factors (considered as secondary)	• Biopsychosocial model • Gut–brain interaction • Greater emphasis on psychosocial factors and central mechanisms	• Integrated biopsychosocial model • Emphasis on neurobiological, microbial, and psychosocial mechanisms • Central sensitization at the neural network level as a key mechanism
Structure of criteria	• Top–down approach • Symptom description • Clear criteria for each disorder	• Top–down approach • Overlapping and unified criteria • Added pediatric criteria • Subtypes of some disorders	• More flexible structure • Phenotyping and multidimensional patient assessment • Consideration of symptom overlap between disorders
Diagnostic approach	• Symptoms ≥ 3 months • Positive diagnosis (based on presence of criteria) • Exclusion of organic disease	• Symptoms ≥ 3 months • Greater focus on severity of symptoms • Use of validated questionnaires • Greater emphasis on quality of life	• Domain-based assessment • Patient-reported outcomes (PROs) • Consideration of psychosocial determinants • Diagnosis as part of personalized care
Role of psychosocial factors	Recognized, but considered secondary to chronic symptoms	Strongly emphasized in pathogenesis and symptom maintenance	Integral component of pathogenesis and assessment. Mandatory consideration in diagnosis and treatment
Treatment approach	Primarily symptom-oriented approach	Biopsychosocial approach Multidisciplinary management	Patient-centered, personalized approach Multidisciplinary team, including mental health professionals
New elements (compared to the previous version)	–	• Criteria for children • Support for DGBI (e.g., post-infectious distress syndrome) • Greater emphasis on quality of life	• New DGBI concept • Phenotyping and stratification of patients • PROs as part of diagnosis and monitoring • Personalization of treatment
Main trend of evolution			
From description of symptoms and exclusion of organic disease →	To biopsychosocial understanding of disease mechanisms →	To patient-centered, personalized, and multidisciplinary management of disorders of gut–brain interaction (DGBI)	
Outcome			
Better patient understanding – more accurate diagnosis – more effective treatment – improved quality of life			

Fig. 1. The evolution of the concept of functional dyspepsia: from functional gastrointestinal disorder to gut-brain interaction disorder, in accordance with the Rome III–V criteria (source: diagram by the author, based on the recommendations of the Rome Foundation)

in the Rome IV criteria, before being refined in the Rome V criteria [4, 5]. The biological components of IBS include motility disorders, visceral hypersensitivity, duodenal inflammation, the microbiome, mucosal permeability and the immune response. Psychological components include anxiety, depression, catastrophising, somatisation, fear of symptoms, chronic stress and childhood psychological trauma. Social aspects include: family, work, social support, economic status, cultural characteristics and behavioural factors. The biopsychosocial model provides a holistic understanding of the pathogenesis of gut-brain interaction disorders, viewing them as the result of the interaction of neuroendocrine, autonomic, immune and other mechanisms. Key pathophysiological mechanisms include dysregulation of the hypothalamic-pituitary-adrenal axis, impaired vagal innervation, changes in the gut microbiota, immune activation, cytokine processes and central sensitisation [6].

This is precisely what forms the basis of the new pathogenetic model of DGBI, as illustrated in Fig. 2 [7, 8]

A fundamental shift in the philosophy of patient management, in line with the latest recommendations of the Rome V criteria, requires a focus on understanding each patient as an individual, identifying biological, psychological and social factors, and personalising treatment. This is precisely what a multidisciplinary team can provide, and such a team must include a medical psychologist. The latter makes a significant contribution to the implementation of the key principles of the Rome V criteria, namely by facilitating:

• Patient phenotyping (one of the new concepts in the Rome V criteria). The following criteria are used for this: the presence of predominant symptoms, consideration of possible mechanisms underlying the development of the condition, the patient's psycho-emotional profile, characteristics of the gut-brain axis, and the individual response to treatment.

• Multidimensional assessment of symptoms during clinical examination. Particular attention is paid not only to assessing the intensity of symptoms, their frequency, duration and variability, but also to their impact on daily life and the patient's individual perception of the symptoms.

• The use of patient-reported outcomes (PROs). This is a key innovation of the Rome V criteria – Patient-Reported Outcomes (PROs). This applies to symptom severity, the level of functional limitations, treatment efficacy, satisfaction with treatment, self-assessment of psychological and emotional state, and adherence to therapy.

• Assessment of quality of life (the Rome V criteria regard this as one of the key clinical outcomes of treatment). It is the clinical psychologist who can assess the extent to which clinical symptoms affect work capacity, social activity, family relationships, sleep, emotional well-being and eating behaviour. The success of treatment depends on improvements in daily functioning and subjective well-being.

• Taking the patient's individual needs into account in treatment (the Rome V criteria advocate a shift towards personalised medical approaches). Treatment must be selected by all members of the multidisciplinary team, taking into account the patient's clinical phenotype, the underlying pathophysiological mechanisms, their

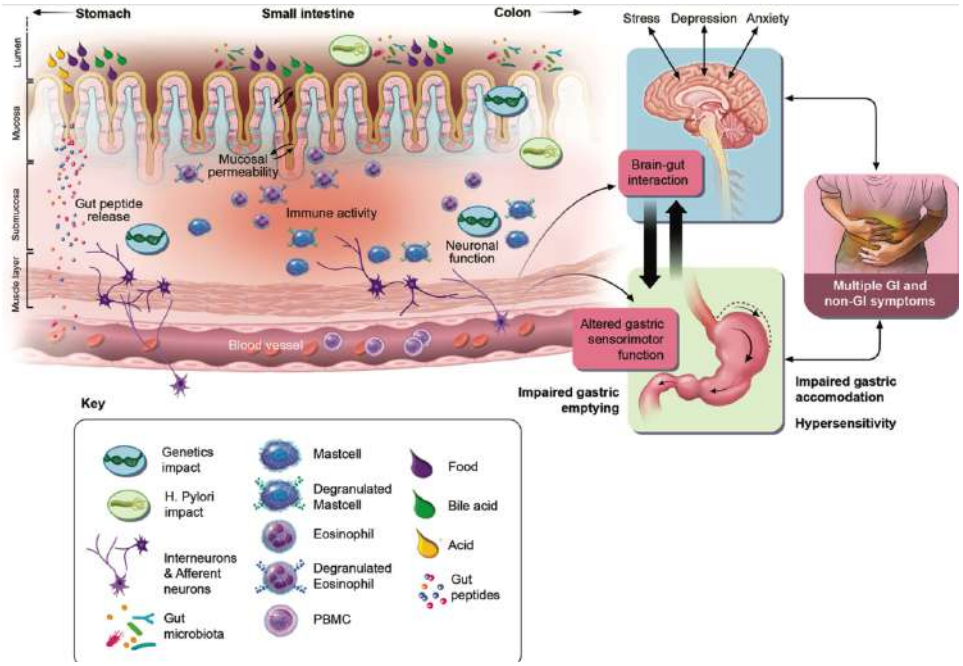


Fig. 2. Pathophysiological mechanisms of DGBI [7, 8]

psycho-emotional status, comorbid conditions, lifestyle, the patient's own goals and expectations, and treatment preferences.

• investigation of psychosocial factors (fundamentally new additions to the Rome V criteria regarding the inclusion of psychosocial factors in both the diagnostic and treatment processes). It is recommended to assess the impact of factors such as stress, anxiety, depression, somatisation, catastrophising of symptoms, early adverse life experiences, coping strategies, and family and social factors. Psychosocial factors are becoming an equally important component of pathogenesis; consequently, the role of the clinical psychologist within a multidisciplinary team is expanding.

At present, we must treat DGBI not only according to the biopsychosocial model, but also, and crucially, through a multidisciplinary team, as set out in Table 1.

We can see that, according to the Rome V criteria, the medical psychologist is no longer merely a specialist for patients with anxiety and depression, but a full member of the multidisciplinary team.. The main areas of their work include the following.

1. Psychological screening – identifying, at the start of treatment, psychosocial factors such as anxiety levels, depressive states, chronic stress, somatisation, catastrophising of symptoms, fear of serious illness, sleep disorders and psycho-emotional exhaustion, which may influence treatment and the prognosis of the condition. Validated questionnaires such as the HADS, PHQ-9, GAD-7 and PHQ-15 may be used for this purpose [9, 10].

2. Psychological phenotypin today, they are expected to fulfil an integral role within the system of providing medical and psychological care to patients with psychological health disordersg of patients – this enables the identification of the specific cohort of patients who are likely to benefit most from psychological support. In doing so, the clinical psychologist assesses the patient's perception of symptoms, coping strategies, level of psychological adaptation, emotional profile, and family and social circumstances.

3. Providing psychoeducation – to help the patient develop an appropriate attitude towards their symptoms. This helps to reduce anxiety, increases adherence to treatment and builds trust in the doctor.

4. Building adherence to treatment – to help the patient form a realistic picture of what to expect from treatment, maintain motivation for long-term treatment, overcome fear of medication, and establish dietary and behavioural guidelines.

Table 1

Cooperation within a multidisciplinary team in the treatment of DGBI

Specialist	Key role within the team
General practitioner	Initial screening, coordination of care pathways, long-term follow-up
Gastroenterologist	Diagnosis, differential diagnosis, pharmacotherapy
Clinical psychologist	Clinical psychologist Screening for psychosocial factors, psychological intervention, health education, assessment of PROs, improving compliance
Nutritionist	Personalised diet plans, nutritional literacy
Physiotherapist	Increasing physical activity, managing physical manifestations of stress
Psychiatrist	Treatment of severe mental disorders as required, psychopharmacotherapy

5. Conducting psychological interventions – implementing methods with a proven evidence base. This is what helps to reduce the severity of symptoms, improve emotional well-being and quality of life [10].

6. Assessing treatment outcomes – monitoring treatment. This allows the effectiveness of treatment to be assessed not only in terms of the clinical course of the illness, but also its impact on day-to-day functioning. Monitoring should cover psychological well-being, levels of anxiety and depression, the severity of somatisation, quality of life, and patient-reported outcomes.

In addition, a medical psychologist working as part of a multidisciplinary team helps select psychopharmacological therapy for a patient's individualized treatment plan. It is the psychologist's expertise in psychopharmacology that helps create an optimal and effective treatment plan. When considering this field through the lens of DGBI, it is worth noting recent promising studies on recommendations for the use of medications that fall within the scope of a medical psychologist's work.

Khasawneh M, et al. 2025 [11] analyzed 2,475 patients with DGBI who suffered from a combination of the primary symptoms of DGBI and abdominal pain. Their findings confirm that tricyclic antidepressants are significantly helpful for chronic global syndromes and abdominal pain due to their effect on gut-brain neuromodulators, while selective serotonin reuptake inhibitors require further study. In February 2026, these authors completed a meta-analysis involving 6,694 patients [12]. They demonstrated that it is precisely a comprehensive approach, which involves the use of neuromodulators, particularly tricyclic antidepressants, brain-gut behavioral therapy (including dynamic and emotional processing), cognitive-behavioral therapy, and self-management of the condition, that makes this comprehensive treatment approach effective. There are other studies that provide tools for working with patients with DGBI, which will be particularly useful in the work of a medical psychologist (see Table 2).

Changes to the Rome V criteria establish a biopsychosocial model for the treatment of DGBI by a multidisciplinary team, which can be represented as a practical algorithm:

Table 2

Recommended Studies in Psychopharmacology from the DGBI

Research	Recommended for a medical psychologist
Hanna-Jairala & Drossman, 2024, [13]	Central neuromodulators are an important component of IBS treatment. Their effects are not limited to treating depression or anxiety: they can modulate 5-HT, noradrenergic, and dopaminergic transmission, as well as the central processing of visceral signals, pain, and gastrointestinal motility. The study explains to the patient that a neuromodulator can be used to target the brain-gut axis, rather than implying that "their IBS is caused by nerves."
Temido et al., 2025, [14]	An analysis of randomized, double-blind, placebo-controlled trials showed that antidepressants may improve IBS symptoms. The analysis included TCAs and SSRIs. The results support the concept of using antidepressants not only for psychiatric comorbidity but also as neuromodulators of IBS symptoms. The study provides an evidence base for discussing antidepressants as neuromodulators of irritable bowel syndrome symptoms, regardless of the presence of a psychiatric diagnosis.
Drossman et al., 2018, [15]	A fundamental consensus review on central neuromodulators in disorders of gut–brain interaction. It has been shown that antidepressants and other centrally acting medications can affect sensory and motor function of the gastrointestinal tract, central pain processing, and symptoms of DGBI. It establishes the theoretical foundation for the biopsychosocial model and the multidisciplinary approach.
Stanculete et al., 2021, [16]	IBS is considered a disorder of the "gut-brain" interaction. Central neuromodulators may influence the dysregulation of pain and motility, as well as associated psychological symptoms Research directly links psychopharmacology, the brain-gut axis, pain, motility, and psychosocial factors.

Patient – Rome V criteria – exclusion of organic disorders – assessment of psychosocial factors – assessment of quality of life – assessment of anxiety – determination of phenotype – personalised treatment – pharmacotherapy – diet – psychological intervention – follow-up.

Conclusions

1. Contemporary management of functional dyspepsia should include not only pharmacological treatment and dietary recommendations but also evidence-based psychological interventions, including cognitive behavioral therapy, psychoeducation, stress management strategies, and mindfulness-based interventions. Such an integrated approach provides more comprehensive and sustainable clinical outcomes and forms the basis of personalized, patient-centered care, in which the medical psychologist is not merely an additional consultant but an integral member of the multidisciplinary team.

2. Integration of the medical psychologist into the multidisciplinary team managing patients with Disorders of Gut–Brain Interaction facilitates the early identification of psychosocial factors contributing to symptom persistence, improves the effectiveness of comprehensive treatment, enhances treatment adherence, reduces unnecessary healthcare utilization and inappropriate diagnostic procedures, and ultimately improves patient's prognosis and quality of life.

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