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Peer Review

Review of: "Toward a New Definition of Psychogastroenterology: From the Brain–Gut Axis to the Human Holobiont"

Elvia Ramírez-Carrillo[1]

1. Facultad de Ciencias, Universidad Nacional Autónoma de México, Mexico

This manuscript presents a timely and well-founded proposal to update the definition of psychogastroenterology by recognizing the gut microbiota as a central component of gastrointestinal and psychological health. The argument is coherent, the manuscript is clearly structured, and the proposed definition is precise, with relevant clinical and research implications. Its most important contribution is to bring contemporary knowledge of microbiota-gut-brain interactions more explicitly into psychology, where these processes remain insufficiently integrated into many theoretical, educational, and clinical frameworks.

A further strength is the clear reconstruction of the field's conceptual development, from psychosomatic medicine and the biopsychosocial model to the brain-gut axis and the microbiota-gut-brain axis. This progression illustrates how psychological and clinical concepts must evolve when advances in microbiology, immunology, endocrinology, neuroscience, and systems science change our understanding of health and disease. I particularly agree with the author's decision to present the proposed definition as a logical extension of previous conceptualizations rather than as their replacement. Earlier models retain their theoretical and clinical value, while the explicit inclusion of the microbiota introduces additional mechanisms, explanatory possibilities, and clinically relevant hypotheses. To further support this conceptual reconstruction, the author might consider adding a brief sentence explaining the basis on which the definitions discussed were selected, for example, whether they were identified through key publications, reference works, or database searches. This would help readers understand the scope of the review and the rationale for focusing on these particular formulations.

The proposal to include the mind in a microbiota-gut-brain-mind axis is also conceptually valuable because it resists reductive interpretations and recognizes subjective experience, cognition, emotion,

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intentionality, and behavior as relevant levels of analysis. At the same time, since the term “axis” generally refers to physiological and neurobiological communication pathways, the author may wish to clarify whether “mind” is intended as part of the mechanistic axis itself or as an emergent psychological level at which the effects of these pathways are experienced and interpreted. The view that the mind is grounded in, but not fully reducible to, neural activity could also be identified more explicitly as an emergentist or non-reductive position, while acknowledging that other philosophical and neuroscientific approaches remain possible.

The discussion of the human holobiont is convincing and fits well within the manuscript’s broader biopsychosocial perspective. One potentially useful clarification would be to distinguish the host and its associated microbial communities, which constitute the holobiont, from the social, cultural, dietary, and physical environments in which it is embedded. This distinction would preserve the conceptual precision of the term while fully recognizing the continuous interactions between living systems and their surroundings.

The author may also wish to consider a brief reference to psychonutrition or nutritional psychology, if this fits the intended scope of the manuscript. Diet provides a direct link among behavior, culture, metabolism, gastrointestinal physiology, and microbial ecology. A concise acknowledgment of this field could strengthen the practical connection between psychological and microbiota-informed interventions within an interdisciplinary model of care.

The following editorial points are offered only as minor suggestions. The phrase “recognizing the health as a global property” should read “recognizing health as a global property.” The sentence beginning “In this broader context proposed by the definition of psychogastroenterology proposed here” could be simplified to remove repetition. In the same paragraph, “his own intervention” could be replaced with a gender-neutral formulation such as “their clinical intervention.”

Overall, I consider this manuscript a valuable, timely, and scientifically sound theoretical contribution. Its central strength lies in showing that psychogastroenterology should evolve in response to contemporary knowledge of the microbiota and the multidirectional organization of human health. The comments above are intended as possible refinements and do not affect the validity or relevance of the manuscript’s main argument. I therefore recommend **acceptance**.

Declarations

Potential competing interests: No potential competing interests to declare.