



Nutritional Formulation: The Missing Dimension in Psychiatric Assessment- Moving Nutritional Psychiatry from Theory to Clinical Practice



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Abstract

The emergence of Nutritional Psychiatry represents a significant shift in understanding the biological, environmental, and lifestyle determinants of mental health. While growing evidence links dietary patterns, micronutrient status, gut microbiota, inflammation, and metabolic health to psychiatric disorders, these factors remain largely absent from routine psychiatric assessment and case formulation. Contemporary psychiatric evaluations continue to focus predominantly on symptoms, diagnoses, medications, and psychosocial stressors, often neglecting nutritional determinants that may contribute to the onset, maintenance, and progression of mental disorders. This viewpoint proposes the concept of "Nutritional Formulation" as a structured component of psychiatric assessment. Nutritional formulation incorporates dietary quality, eating behaviors, metabolic health, micronutrient risk factors, food insecurity, gastrointestinal health, and gut-brain interactions into the biopsychosocial framework. By integrating nutritional factors into clinical reasoning, psychiatrists can move beyond symptom management toward more comprehensive and personalized care. The incorporation of nutritional formulation into psychiatric training, assessment protocols, and treatment planning may represent a critical step in translating nutritional psychiatry from research into routine clinical practice.

Keywords: Nutritional Psychiatry; Precision Psychiatry; Lifestyle Psychiatry; Mental Health.

Introduction

The launch of Nutritional Psychiatry marks a significant milestone in the evolution of mental healthcare. The field reflects a growing recognition that diet and nutrition are not merely adjunctive considerations but fundamental determinants of brain health and psychiatric outcomes. For decades, psychiatric practice has largely focused on pharmacological and psychotherapeutic interventions, while nutritional factors have remained at the periphery of assessment and treatment planning. However, accumulating evidence from nutritional neuroscience, psychoneuroimmunology, and microbiome research has challenged the traditional boundaries of psychiatric care and has

highlighted nutrition as a potentially modifiable determinant of mental health [1].

The paradigm shift advocated by nutritional psychiatry extends beyond the treatment of nutritional deficiencies. It encompasses a broader understanding of how dietary patterns, nutrient status, metabolic health, inflammatory pathways, and gut microbiota influence brain function and emotional well-being. Despite this growing evidence base, routine psychiatric assessments rarely include a structured evaluation of dietary habits, nutritional risk factors, or food-related determinants of mental illness. This disconnect raises an important question: if nutrition is central to

mental health, why is it absent from psychiatric case formulation?

The Emergence of Nutritional Psychiatry

The concept of nutritional psychiatry has gained momentum over the past decade as epidemiological, experimental, and clinical studies have demonstrated robust associations between diet quality and psychiatric outcomes. Sarris and colleagues first argued that nutritional medicine should become mainstream within psychiatry, emphasizing that dietary interventions could complement conventional treatments for mental disorders [2]. Subsequently, the International Society for Nutritional Psychiatry Research (ISNPR) issued a consensus statement advocating the integration of nutritional medicine into modern psychiatric practice [3].

Research has consistently shown that unhealthy dietary patterns, particularly those characterized by high consumption of ultra-processed foods, are associated with an increased risk of depression, anxiety, and cognitive decline [4]. Conversely, adherence to Mediterranean-style dietary patterns has been associated with improved mental health outcomes and reduced depressive symptoms [5]. These findings have been reinforced by randomized controlled trials demonstrating that dietary interventions may provide clinically meaningful benefits for individuals with depression [6].

The inaugural editorial of Nutritional Psychiatry further highlights the importance of biological mechanisms such as neuroinflammation, oxidative stress, nutrient metabolism, and the microbiome-gut-brain axis in explaining the relationship between diet and mental health [1]. Such developments suggest that psychiatry is entering a new era in which nutritional factors may become as clinically relevant as traditional biological and psychosocial determinants.

Psychiatry's Persistent Nutritional Blind Spot

Despite increasing scientific evidence, nutritional factors remain conspicuously absent from routine psychiatric assessments. Clinicians routinely inquire about symptoms, psychiatric history, substance use, medications, family history, and psychosocial stressors. However, questions regarding dietary quality, meal patterns, food insecurity, nutritional deficiencies, and metabolic health are rarely integrated into standard psychiatric interviews.

This omission appears increasingly difficult to justify. Diet directly influences neurotransmitter synthesis, inflammatory activity, neuroplasticity, mitochondrial function, and gut microbiota composition all processes implicated in psychiatric disorders [7]. Furthermore, psychiatric patients frequently experience higher rates of obesity, diabetes, metabolic syndrome, and poor dietary quality than the general population, often compounded by psychotropic medication effects [8].

The result is a paradox within contemporary psychiatry.

While clinicians readily investigate biological risk factors such as thyroid dysfunction or vitamin B12 deficiency, broader nutritional determinants of mental health are often overlooked. Consequently, potentially modifiable contributors to psychiatric symptoms may remain unidentified and untreated.

Why Traditional Psychiatric Formulation is Incomplete

Case formulation remains one of psychiatry's most important clinical skills. It provides a framework for understanding the complex interplay of biological, psychological, and social factors contributing to an individual's presentation. However, traditional biopsychosocial formulations were developed before the emergence of nutritional psychiatry and therefore may not adequately capture nutrition-related influences on mental health. Biological formulations typically include genetic vulnerability, neurochemical disturbances, medical illnesses, and medication effects. Psychological formulations focus on personality, coping styles, trauma, and cognitive processes. Social formulations address relationships, socioeconomic status, culture, and environmental stressors. Yet nutrition intersects with all three domains.

Nutritional status influences biological functioning through inflammatory pathways, neurotransmitter production, and neuroendocrine regulation. Dietary habits are shaped by psychological factors such as emotional eating, self-regulation, and body image concerns. Food choices are simultaneously influenced by social determinants including poverty, education, culture, and food accessibility. Consequently, excluding nutritional factors may result in an incomplete understanding of psychiatric presentations.

Nutritional Formulation: A Proposed Framework

To address this gap, the concept of Nutritional Formulation is proposed as a structured component of psychiatric assessment. Nutritional formulation involves the systematic evaluation of dietary and nutritional factors that may contribute to the onset, maintenance, severity, or recovery of psychiatric disorders. Such a framework would encourage clinicians to consider several domains. Dietary quality should be assessed through exploration of eating patterns, fruit and vegetable consumption, and reliance on ultra-processed foods. Nutritional risk factors such as restrictive diets, alcohol misuse, gastrointestinal disorders, and socioeconomic disadvantage may identify individuals vulnerable to micronutrient deficiencies. Metabolic indicators including obesity, diabetes, and metabolic syndrome should also be considered given their established links to psychiatric outcomes. Finally, gut health, food insecurity, and culturally relevant dietary practices deserve attention within a comprehensive formulation. Rather than replacing the biopsychosocial model, nutritional formulation expands and enriches it. It acknowledges that food represents both a biological exposure and a social experience with profound implications for mental health.

Nutritional Formulation and Precision Psychiatry

The movement toward precision psychiatry seeks to identify individualized determinants of illness and treatment response. Genetic markers, neuroimaging findings, inflammatory biomarkers, and digital phenotyping have all been proposed as tools for personalized psychiatric care [9].

Nutritional formulation aligns naturally with this objective. Emerging evidence suggests that dietary interventions may not exert uniform effects across all patients. Variations in inflammatory profiles, microbiome composition, metabolic health, and nutritional status may influence responsiveness to nutritional interventions [10]. Consequently, nutritional assessment could become an important component of individualized treatment planning. Future psychiatric practice may involve identifying nutritional phenotypes associated with specific symptom clusters, inflammatory states, or metabolic vulnerabilities. Such an approach would complement existing efforts to personalize pharmacological and psychological interventions.

Educational and Training Implications

The successful integration of nutritional psychiatry into clinical practice will require significant changes in psychiatric education. Surveys consistently indicate that nutrition receives minimal attention within undergraduate medical curricula and postgraduate psychiatric training [11]. Many psychiatrists report limited confidence in discussing nutrition with patients despite recognizing its importance for overall health. This educational gap is increasingly problematic given the metabolic consequences of many psychotropic medications and the growing evidence supporting dietary interventions. Training programs should therefore incorporate competencies related to nutritional assessment, dietary counselling, collaborative care with dietitians, and interpretation of emerging nutritional psychiatry research.

Challenges and Future Directions

Several barriers must be acknowledged. The evidence base for some nutritional interventions remains heterogeneous, and standardized tools for nutritional assessment within psychiatry are still evolving. Time pressures in clinical settings may further limit comprehensive nutritional evaluations. Moreover, psychiatrists may feel insufficiently trained to address dietary issues. Nevertheless, similar challenges accompanied the integration of smoking cessation, physical activity promotion, and metabolic monitoring into psychiatric care. Over time, these practices became accepted components of comprehensive mental healthcare. Nutritional assessment may follow a similar trajectory as evidence continues to accumulate. Implementation science, identified as a priority by leaders in nutritional psychiatry, will be essential in translating research findings into routine

clinical practice [12]. The development of practical assessment frameworks, training programs, and clinical guidelines will determine whether nutritional psychiatry remains an academic concept or becomes a genuine component of everyday mental healthcare.

Conclusion

The emergence of nutritional psychiatry represents one of the most important conceptual developments in contemporary mental health care. While substantial progress has been made in elucidating the relationships between diet, inflammation, gut microbiota, and psychiatric disorders, translation into routine clinical practice remains limited. Current psychiatric formulations frequently overlook nutritional determinants despite their potential influence on symptom development, treatment response, and long-term outcomes. Nutritional formulation offers a practical framework for addressing this gap. By systematically incorporating dietary quality, nutritional status, metabolic health, food security, and gut-brain interactions into psychiatric assessment, clinicians may develop more comprehensive and personalized understandings of mental illness. As psychiatry continues to evolve toward integrative and precision-based models of care, nutrition should no longer be viewed as an optional adjunct but as a fundamental dimension of psychiatric understanding.

Ethical Approval

Not applicable. This article is a view point based on secondary data and published literature.

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Authors Contributions

All authors contributed to conceptualizing, writing, editing and approving the manuscript.

Conflicts of Interest

There are no conflicts of interest.

Declaration on Use of Artificial Intelligence (AI)

The author acknowledges the use of generative artificial intelligence tools (ChatGPT, OpenAI) to assist in language refinement, structural organization, and drafting support. The author takes full responsibility for the conceptualization, interpretation of evidence, critical analysis, and final content of the manuscript. All referenced data were independently verified from publicly available sources. The AI tool did not generate original data, conduct analysis, or determine conclusions.

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