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Editorial

Depression and suicide: Untangling the web from epidemiology to mechanisms

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Depression and suicide remain among the most pressing global health challenges, requiring an integrated approach that bridges epidemiology, clinical practice, and biological mechanisms.[1] Despite decades of investigation, knowledge about their determinants remains fragmented across biological, psychological, and social domains, complicating the integration of findings and the design of effective strategies.[2] Rather than being reducible to a single pathway, depression appears to emerge from a network of interrelated risk and protective factors that interact dynamically across multiple levels of analysis. Recognizing and understanding this complexity is essential not only for advancing research but also for informing prevention, clinical care, and public health policy.[3]

Faced with such a difficult challenge the current issue of the *Spanish Journal of Psychiatry and Mental Health* attempts to synthesize knowledge from research that spans the domains of cutting-edge science. Specifically, it brings together contributions that, while diverse in scope, converge on the urgent need to integrate epidemiological, clinical, biological, and historical perspectives to enhance the precision and relevance of psychiatry. Collectively, these articles reflect the dual challenge of reconciling population-level patterns with individual-level mechanisms, and of grounding clinical practice in robust science while remaining sensitive to social realities.

Several contributions in this issue highlight the enduring and shifting epidemiology of mental disorders. A longitudinal analysis of suicide mortality in Spain from 1984 to 2018 reveals age–period–cohort dynamics that underscore the persistence of suicide as a public health priority.[4] Far from being static, suicide reflects generational vulnerabilities, socio-economic transformations, and evolving patterns of risk. In parallel, data showing rising trends in eating disorders, self-harm, and suicidal behaviors among young people point to an alarming increase in early-onset psychopathology.[5] These findings echo global observations that adolescence and early adulthood remain critical periods of vulnerability for mental disorders, with contemporary dynamics – digital environments, precarious labor markets, and social inequities – intensifying these risks.[6]

Equally concerning is the overuse of antidepressants in primary care.[7] Evidence from prescribing patterns suggests that these medications are often employed beyond evidence-based indications, reflecting broader issues of medicalization, system-level pressures, and the insufficient availability of psychosocial interventions. While antidepressants remain essential in the treatment of major depressive disorder and related conditions, their excessive and non-specific use underscores the risk of reducing complex psychosocial suffering to a predominantly pharmacological framework.

This concern intersects with epidemiological findings on lifestyle factors, which reveal strong associations between unhealthy behaviors – such as poor diet, physical inactivity, and other modifiable habits – and depressive symptoms.[8] Such results highlight the importance of situating psychiatric care within the broader lived context of patients, emphasizing interventions that extend beyond medication and integrate lifestyle modification as a critical dimension of prevention and treatment.

Further contributions in this issue of the Journal explore clinical predictors and psychosocial risk factors in psychiatric disorders. Research on first-episode psychosis and unaffected relatives identifies specific cognitive dimensions, particularly deficits in processing speed, that may serve as intermediate phenotypes. These findings not only advance understanding of familial vulnerability but also offer promising avenues for early detection strategies that transcend symptom-based assessments. Similarly, studies of psychosocial risk in depression underscore the dynamic interplay of vulnerability, stress exposure, and illness trajectory, reinforcing the necessity of multidimensional models.

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Crucially, the Latin American consensus on the management of depression provides a regional and culturally attuned framework that illustrates how psychiatric guidelines must adapt to specific healthcare systems and social realities.[9] By contextualizing global evidence within Latin American health structures, this initiative demonstrates that psychiatric care cannot be separated from the social and institutional ecosystems in which it operates. Such perspectives underscore the imperative for an integrative psychiatry – one that acknowledges biological mechanisms while also addressing the environments that shape the expression, progression, and outcomes of depression.

The biological dimension of psychiatry is strongly represented in this issue. Advances in neurobiology and immunology continue to shed light on the mechanisms that may underpin depression and related disorders, opening pathways for more stratified interventions. Martino et al.[10] demonstrate that elevated levels of tumor necrosis factor alpha (TNF-α) are linked to depressive symptoms, reinforcing the hypothesis that inflammation is central to at least a subset of depressive disorders. These findings converge with evidence that peripheral immune signals can interact with the central nervous system, modulating neurotransmission and synaptic plasticity, and ultimately influencing mood and cognition. Clinically, inflammatory biomarkers may guide treatment selection in the future, paving the way for immunomodulatory interventions and more refined models that may entail tailoring and staging according to the pathophysiology of disease processes.[11]

Adding another perspective, Sánchez-Alonso et al.[12] revisit serotonergic mechanisms in Parkinson's disease, highlighting how serotonin contributes to both motor and non-motor symptoms. This work illustrates the deep overlap between neurological and psychiatric conditions and reinforces the concept of "shared biology," underscoring the need for therapeutic strategies that transcend rigid disciplinary boundaries. In parallel, Maturana-Quijada et al.[13] examine the effective connectivity of the locus coeruleus in major depression, showing that dysregulation of this noradrenergic hub can reverberate across cortical and subcortical networks, shaping both affective and cognitive processes. These circuit-level insights provide mechanistic grounding for pharmacological treatments (such as noradrenergic antidepressants) as well as neuromodulatory approaches targeting brainstem–cortical pathways.

Together, these contributions highlight that precision psychiatry cannot be reduced to biology alone, but must integrate genetic, neurobiological, psychological, and social determinants. The challenge is to bridge scales – linking population-level patterns with molecular and circuit-level mechanisms – and to align interventions with the diverse needs of patients. This integrative vision resonates with the historical trajectory of tuberculosis: once framed purely as an infectious disease, its effective control required not only antibiotics but also improvements in housing, nutrition, and social conditions, all of which countered the stigma the condition had acquired being referred to as 'consumption' amongst other pejorative terms. Likewise, depression and suicide demand a model that combines evidence-based biomedical interventions with attention to the lived realities of patients. Only by adopting such a holistic framework can psychiatry deliver prevention and treatment strategies that are both scientifically rigorous and meaningfully human.

Conflicts of interest

None declared.

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