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Bridging Mind and Brain: Incorporating Neuropsychiatry into Psychiatric Training

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INTRODUCTION

Psychiatry and neurology have traditionally been taught separately in medical training, and there is no formal educational pathway in place to integrate them (Baker, Kale, & Menken, 2002; Molina-Ruiz et al., 2024). The American Psychiatric Association (2025) defines psychiatry as the medical specialty focused on the diagnosis, treatment, and prevention of mental disorders. Conversely, neurology focuses on ailments affecting the nervous system, including the brain, spinal cord, and peripheral nerves (Barrow Neurological Institute, 2023). This divide has prompted discussions in global healthcare sciences, academia, and societal and cultural spheres since the turn of the twentieth century (Baker et al., 2002). Nonetheless, the conventional dichotomy separating mental processes from brain anatomy and function has been challenged by developments in the neurosciences, social theories, and philosophy of mind positing a plausible interaction between psychiatric and neurological disorders (Kandel, 1998; Baker et al., 2002).

This, in turn, led to a proposal to create a new, interdisciplinary clinical discipline incorporating conceptual frameworks from neurology, psychiatry, and neuropsychology. The objective was to explore the interplay between neural activity and cognitive processes to provide logical answers to traditional research inquiries while bridging the gap between longstanding interpretations of neuropsychopathology (Sachdev & Mohan, 2013; Insel 2005; St. George's University, 2023). However, the incorporation of brain-related psychological behavioral training into psychiatric education has proved to be a complicated pedagogical goal (Molina-Ruiz et al., 2024). This can be explained by the challenge of bringing together the standard scientific foundations of both medical specialties (Kandel, 1998; Sachdev & Mohan, 2013), resolving the long-standing disagreement between the epistemological perspectives on both (Pan American Health Organization, 2020; Barrón-Velázquez et al., 2024), and questioning the sweeping sociocultural and historical assumptions that have contributed to the fragmentation of this unification (de la Fuente & Heinze, 2014). This editorial therefore introduces a rational proposal to revisit the integration of the above evidence into the newly developed specialist discipline of neuropsychiatry and its relevance to current medical training (Molina-Ruiz, 2024; Motwani, 2023).

The historical division between psychiatry and neurology

For over two millennia, psychiatry and neurology were largely perceived as either metaphysical constructs or social phenomena, rather than complementary medical disciplines grounded in biological principles (Baker et al., 2002). It was only relatively recently that pioneering figures such as Jean-Martin Charcot, John Hughlings Jackson, and Sigmund Freud began to regard the brain and mind as interrelated entities (Kandel, 1998; Sachdev & Mohan, 2013). However, their unifying perspective gradually decreased over the years. Neurologists progressively embraced a radical positivist stance, concentrating on empirical manifestations of brain pathology distinguished by anatomical or functional abnormalities (Baker et al., 2002). The diagnosis and treatment of dysfunctional affective states, mal-

adaptive behavioral patterns, and dysfunctional cognition, often without apparent anatomical functional correlations, became the province of psychiatrists (Sachdev & Mohan, 2013; Insel 2005). This disciplinary divergence encouraged the establishment of separate educational curricula, training programs, and residency pathways, creating skepticism about the validity and clinical necessity of an interdisciplinary approach (Molina-Ruiz et al., 2024). Professional advocacy for the earlier multidisciplinary paradigm, in which mental and neurological health were regarded as intrinsically interrelated, became largely marginalized within medical discourse and practice (Baker et al., 2002; Kandel, 1998).

This divergent theoretical framework is increasingly thought to be untenable (Baker et al., 2002; Kandel, 1998). Contemporary research has consistently found interactions between conditions previously classified as primarily psychiatric or neurological (Insel 2005; Sachdev & Mohan, 2013). Another instance of the convergence between the two medical specialties is the fact that a portion of individuals with Parkinson's disease or post-stroke syndrome develop psychopathology (Insel 2005). Genetics, imaging, and physiological analyses provide robust data on the relatedness of diseases classified as psychiatric, such as obsessive-compulsive disorder and schizophrenia (Insel 2005; Sachdev & Mohan, 2013). The dichotomy between brain and mind has periodically been challenged to the extent that it has been overridden by epistemological arguments pointing to the interrelated characteristics of the aforementioned medical specialties (Baker et al., 2002; Kandel, 1998).

The birth of neuropsychiatry

Neuropsychiatry was created as a unique, integrative disciplinary field focused on the research, diagnosis, and treatment of neuropsychopathology in the context of underlying brain dysfunction (Insel 2005; Sachdev & Mohan, 2013). Neuropsychiatrists depict the brain and mental apparatus as components of a unified biopsychosocial system (Kandel, 1998; Sachdev & Mohan, 2013). Whereas neurological disorders often manifest with significant psychological and behavioral symptoms, psychiatric symptoms are associated with specific neural substrates (Insel 2005; Sachdev & Mohan, 2013). This viewpoint is in line with the biopsychosocial framework incorporating social, cultural, and psychological theories of mental illness into non-reductionist appraisals of neuropsychological dysfunction in humans (Kandel, 1998).

Despite being related to both, neuropsychiatry differs from neurology and neuropsychological psychiatry. It is defined by Arciniegas and Kaufer (2013) as a medical specialty that is distinct from its parent specialties in terms of its foundational principles, avant-garde diagnostic methods, and clinical expertise not present in either. Whereas psychiatry concentrates on descriptive, phenomenological analysis and psychosocial processes, and neurology focusses on localization-based approaches to nervous system lesions, neuropsychiatry operates at the point where they intersect.It incorporates knowledge from various disciplines to address complex neurological and mental health disorders that neurology and psychiatry have failed to treat (Arciniegas & Kaufer, 2013; Sachdev & Mohan, 2013). The role of the neuropsychiatrist is multidisciplinary and adaptable, as it is defined by their ability to associate psycho-neurobehavioral clinical manifestations with morphophysiological substrates. At the same time, neuropsychiatrists use innovative diagnostic techniques such as state-of-the-art imaging and psychological assessments (Arciniegas & Kaufer, 2013). In addition, philosophical paradigms such as emergentism and the multiple realizability theory propose more complicated principles, arguing against reductionist and dualist models (Kim, 2020; Bickle, 2019). The former states that psychological and behavioral phenomena arise from brain-related processes and therefore possess unique properties that cannot solely be attributed to physical factors (Kim, 2020).

According to Bickle (2019), psychological phenomena can be classified into various models that may or may not be suitable for empirical research. These newer frameworks could therefore have implications for psychiatric training. Teaching future psychiatrists to navigate the intricacy, uncertainty, and theoretical range inherent in neuropsychiatry could be a formidable undertaking for institutions if residency programs are encouraged to combine biopsychosocial attributes and ontological principles. Even if difficulties arise, however, formally incorporating neuropsychiatry into psychiatric residencies could foster scientific coherence and encourage future professionals to explore complex psycho-neurobiological cases with patient subjectivities and a range of sociocultural contexts in greater depth (Sachdev & Mohan, 2013).

The relevance of neuropsychiatric services in Mexico

The argument for incorporating neuropsychiatry into medical training and care in Mexico is compelling from a public-health perspective. Neuropsychiatric disorders represent a significant proportion of the national disease burden (Pan American Health Organization, 2020). Cognitive dysfunction, together with altered behavior, accounts for approximately 20% of all disability-adjusted life years in Mexico and 35% of years lived with disability (Pan American Health Organization, 2020). This shows that approximately one-fifth of Mexico's health burden is related to conditions concerning both brain and mental issues (Pan American Health Organization, 2020). According to this view, neuropsychiatric disorders have the highest burden of disease, surpassing cardiovascular, metabolic, and infectious ill-

nesses (Pan American Health Organization, 2020; Barrón-Velázquez et al., 2024).

Neuropsychiatry in psychiatric training

Neuropsychiatric education has not been fully integrated into medical training in most countries, including Mexico (Molina-Ruiz et al., 2024; Arciniegas & Kaufer, 2013). Standard psychiatric residency programs offer temporary rotation in neurological services. However, this is seldom sufficient to cover the rapidly developing field of neuropsychiatry (Molina-Ruiz et al., 2024). A recent international survey involving early-career psychiatrists found that approximately 80% reported having participated in mandatory neurology rotations during their residency training. However, fewer than 15% declared that they had received the required clinical training during these rotations (Molina-Ruiz et al., 2024).

Moreover, the curricular content of brain–behavior conditions within psychiatric training programs has not been sufficiently clarified (Sachdev & Mohan, 2013; Arciniegas & Kaufer, 2013). Although terms such as "clinical neuroscience," "behavioral neurology," and "biological psychiatry" sometimes appear in residency curricula, the latter fail to include dedicated neuropsychiatric lessons designed to integrate and consolidate knowledge across disciplines (Molina-Ruiz et al., 2024; Sachdev & Mohan, 2013). The absence of innovative curricular development can therefore translate into fragmented competencies and overlooked opportunities to provide beneficial medical training and future-proof psychiatry graduates (Molina-Ruiz et al., 2024; Arciniegas & Kaufer, 2013).

CONCLUSION

In conclusion, incorporating neuropsychiatry into psychiatric training in Mexico is a logical and reasonable evolution, which is also bioethical, and in line with growing evidence in the field of mental health. The burden of neuropsychiatric illness in Mexico is too high, and the current workforce too unevenly distributed to reduce healthcare gaps and leverage siloed expertise. Mexican psychiatry is currently at a crossroads where neuroscience has provided data on how brain activity and mental processes intersect. It would therefore be useful for educational authorities to incorporate this innovative knowledge into psychiatric training. Encouraging residents to pursue a neuropsychiatry specialization could equip generations of healthcare professionals to diagnose, treat, and prevent disorders affecting both the brain and mental health, thereby reducing the disease burden in vulnerable Mexican populations.

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