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ASOCIACIÓN PSIQUIÁTRICA MEXICANA

Volumen 5 - Número 1

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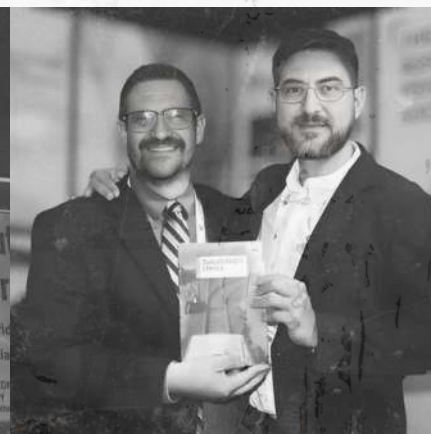
Asociación Psiquiátrica Mexicana, A.C.



Antecedentes

La **Asociación Psiquiátrica Mexicana, A.C.**, constituida en 1966, es la organización médico-psiquiátrica que agrupa al mayor número de miembros con más de tres mil integrantes en todo el país. Su finalidad es promover la unidad en esta rama de la medicina, así como incentivar el desarrollo del conocimiento de esta tanto para sus socios como para el público en general; lo anterior, mediante educación continua en temas sobre profesionalismo, ética, práctica clínica, investigación en las ciencias de la salud mental. Desde su origen, se distingue por el compromiso con contribuir socialmente de manera permanente y con tanto la divulgación como la difusión respecto a esta disciplina de la medicina científica.

Para lograrlo, organiza eventos locales, congresos nacionales, reuniones colegiadas y mantiene una editorial propia en constante expansión, que, al día de hoy, incorpora a este órgano de difusión periódica y la producción literaria de alta calidad. Además, la institución participa de manera activa en la consolidación de políticas públicas en salud mental, en el fortalecimiento de la enseñanza de la psiquiatría en el rubro universitario, así como en la promoción de una práctica clínica fundamentada en evidencia científica sustentada, ética y humana. Asimismo, mantiene vínculos de colaboración con organismos nacionales e internacionales, entre ellos la **Asociación Mundial de Psiquiatría**, lo que favorece la proyección de la psiquiatría mexicana y su integración en redes gremiales globales.





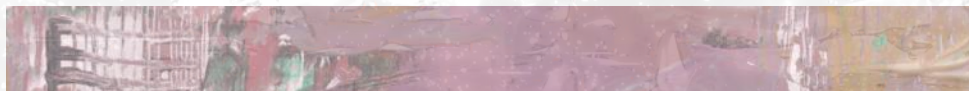
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La **Revista de la Asociación Psiquiátrica Mexicana, A.C.** se erige como el órgano oficial de difusión del gremio, destinado a difundir conocimiento científico de alta calidad, y constituirse como un referente nacional e internacional en el ámbito de la psiquiatría contemporánea.

Visión

Consolidarse como una publicación de referencia en las ciencias de la salud mental en México y Latinoamérica, con impacto internacional, y sustentada en la excelencia científica, la ética editorial y la innovación.

La **Revista de la Asociación Psiquiátrica Mexicana, A.C.** aspira a ser un espacio de encuentro transdisciplinario que articule la investigación básica, clínica y psicosocial con la práctica profesional, contribuyendo a incentivar la difusión del conocimiento en esta rama de la salud en mejores estándares de atención sanitaria.

Misión

Difundir el conocimiento original, riguroso y actualizado en las ciencias de la salud mental y disciplinas afines mediante un proceso editorial transparente y de calidad que garantice la integridad académica de sus publicaciones. La **Revista de la Asociación Psiquiátrica Mexicana, A.C.** tiene como misión fomentar el diálogo entre investigadores, clínicos y profesionales de esta rama de la salud, incentivar la formación y educación de nuevas generaciones de investigadores, y promover una comprensión integral de la salud mental en el contexto mexicano y global, respetando la diversidad cultural y las necesidades emergentes de México.



Congreso Mundial de Psiquiatría 2024, organizado con la Asociación Psiquiátrica Mundial y la Asociación Psiquiátrica Mexicana, A.C. En la imagen: Dr. Alejandro Molina López (presidente 2024-2025), Dra. Wannuta Wasserman (directora de la Asociación Psiquiátrica Mundial) y Dr. Juan Ramón de la Fuente (Canciller de México)



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Commentary

Midterm Challenges & Achievements of the 2024–2025 Biennium

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Affiliation Abstract

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The present commentary analyzes the midterm balance of the 2024–2025 biennium of the Asociación Psiquiátrica Mexicana, A.C., highlighting institutional challenges and achievements. First, the text acknowledges the death of Dr. Rafael Medina Dávalos, Secretary of Publications, whose editorial work established standards that continue to guide the association's publishing practices. Subsequently, the commentary details the implementation and results of the SALMER-CARE Project, designed to enhance mental health service accessibility for medical residents, which exceeded its projected goals and reduced barriers to care. The strengthening of editorial structures is also described, including the consolidation of the Revista de la Asociación Psiquiátrica Mexicana, A.C., the creation of an Editorial Committee, the assignment of Digital Object Identifiers, and the initiation of indexing processes. Likewise, the establishment of a Literary Editorial Board with defined roles and hybrid publication models demonstrates a sustained commitment to quality and dissemination. International collaboration is exemplified by the 24th World Congress of Psychiatry, held in Mexico City in 2024, which fostered academic revitalization and professional exchange. Finally, the commentary anticipates the XXIX National Congress in Mérida, Yucatán, as well as strategies for long-term consolidation in education, research, and clinical practice, projecting a framework that will strengthen psychiatric care in Mexico.

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Foreword

The midpoint of the 2024–2025 Biennium has been reached, a period characterized by institutional challenges and advancements for the Asociación Psiquiátrica Mexicana, A.C. It is with grief that we announce the passing of Dr. Rafael Medina Dávalos, our Secretary of Publications, who departed in April. He was more than a member of our association; he was a tireless advocate for excellence in psychiatric editorial practices.

Institutional Developments

Considering the above, the association's commitment to institutional development is paramount. Our professional initiatives designed to foster participation among active members and psychiatry trainees reflect this dedication. The **SALMER-CARE Project** (Cuidado y Atención al Médico Residente) is an example. This project was developed to leverage access to mental health services for national residency matriculates, reducing the treatment access gaps this population faces.

Editorial Developments

The *Revista de la Asociación Psiquiátrica Mexicana, A.C.*, was founded nearly fifty years ago. Initially, it was a scientific communication platform under the vision of the late Dr. Ramón de la Fuente Muñiz[†]. To continue its vision, the association developed a plan to ensure compliance with current publishing standards. This goal was implemented under the direction of Dr. Francisco R. de la Peña, the author of this commentary, serving as Editor-in-Chief, and Dr. José Carlos Medina-Rodríguez as Associate Editor. An Editorial Committee was formed to execute this objective. The International Standard Serial Number (ISSN 3061-7979) was obtained (ISSN Centre, 2024). Subsequently, Digital Object Identifiers (DOI) have been assigned to all articles accepted since 2024. This procedure supports standard indexing practices, open science initiatives, and the digital preservation of published works (Crossref, 2024). The journal's indexing in national and international repositories was also initiated. These developments provide researchers in psychiatry, neuroscience, and psychosocial disciplines a platform to publish their findings with dissemination aligned with global standards. The journal's indexing in national and international repositories was also initiated. These developments provide researchers in psychiatry, neuroscience, and psychosocial disciplines a platform to publish their findings with dissemination aligned with global standards.

Literary Editorial Board

A Literary Editorial Board was formally constituted in a pivotal move for the association's literary endeavors. This board operates under Dr. Ricardo A. Saracco Álvarez, Editor-in-Chief. Dr. Jesús A. Aldana López assumed the role of Administrative Editor, ensuring the organized functioning of all editorial processes. Dr. Francisco R. de la Peña contributes his expertise as Scientific Editor. To add to this end, the objective behind the board's formation was to establish an enduring framework for the consistent and high-quality publication of the association's literary output.

Global Engagement

Internationally, the association collaborated with the World Psychiatric Association, culminating in the highly anticipated organization of the 24th World Congress of Psychiatry. This prestigious event, held under the presidency of Dr. Danuta Wasserman, unfolded in Mexico City from November 14 to 17, 2024. The event attracted a global attendance of 3,674 professionals from 90 diverse countries (World Psychiatric Association, 2024). Beyond its attendance figures, the congress catalyzed the revitalization of academic endeavors within the association's various state chapters. It achieved this goal by promoting pedagogical activities to cater to the needs of trainees, early-career professionals, and seasoned members. This focus on education and professional development fostered an environment for networking and the exchange of ideas within the global psychiatric community.

Closing Remarks

Looking ahead, the *Asociación Psiquiátrica Mexicana, A.C.*, is poised to orchestrate its XXIX National Congress, an event of paramount importance scheduled for November 13–16 in the city of Mérida, Yucatán. Several steps are being fostered to facilitate membership across the nation. These include outreach programs and collaborations with health organizations. The execution of the annual congress will test the association's ability to fortify national and international collaborations. This will bring together leading experts from around the globe. Furthermore, showcase Mexico's dedication to contributing to the worldwide discourse on mental health.



In 2025, the association intends to consolidate these advancements into a perennial strategy. This strategy will encompass a comprehensive approach to psychiatric practice, education, and research, ensuring that the momentum gained from past successes translates into sustained progress. The aim will be to create a lasting framework that will continue to elevate the standards of mental health care in Mexico for years to come.

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Editorial

From Reductionism to Philosophical Integration: Redefining Mexico's Psychiatric Education

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Conflicts of Interest

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Abstract

This editorial explores the transition from reductionist models toward an integrative philosophical framework in Mexican psychiatric education. The proposal argues that psychiatry, as both science and practice, benefits from a transdisciplinary approach that unites biological, psychological, and sociocultural knowledge with philosophical inquiry. The commentary highlights how incorporating philosophical perspectives—such as phenomenology, hermeneutics, and critical theory—can strengthen psychiatric training by fostering critical thinking and contextual understanding of psychopathology. Standardized diagnostic systems like the DSM-5-TR and ICD-11 provide valuable international comparability but often fail to capture Mexico's sociocultural realities, particularly in the context of trauma, migration, and systemic inequities. Integrating philosophical traditions into medical curricula would enable psychiatric residents to approach diagnosis and treatment not merely as technical acts but as interpretive and humanistic processes grounded in the patient's lived experience. Furthermore, the article underscores that empirical progress in neuroscience and psychosocial research should not displace philosophy but rather be complemented by it, given its capacity to frame foundational questions about the mind and mental disorders. The authors contend that curricular reform is required to balance scientific rigor with philosophical integration, cultivating physicians capable of advancing psychiatric care while respecting Mexico's cultural and social complexity. Ultimately, this model aims to enrich clinical practice, enhance academic training, and sustain a more comprehensive understanding of mental health in the national context.

Keywords

Psychiatry/Education; Philosophy, Medical; Curriculum; Transdisciplinary Studies; México.

Introduction

Integrative psychiatry is a transdisciplinary framework integrating biological sciences, psychological theories, and sociocultural perspectives. This proposal is pertinent and necessary in México, where modern biopsychosocial systems coexist with unique societal conventions and practices. Simply because, at its most fundamental definition, psychiatry is the study and treatment of mental illnesses. Even though sociocultural factors are essential to traditional mental health treatment, a more thorough ideological and clinical approach might be advantageous given Mexico's unique demographic makeup.

Interdisciplinarity

Moreover, this approach would potentially call upon multidisciplinary competencies that may be desirable to assess the mindset of the so-called “Mexican.” Thus, the approach considers both the philosophical analysis of the neurobiological foundations of psychological symptoms and the lived experiences of Mexican people to establish a broader appraisal of mental health. The former, despite the country's widely recognized social, cultural, and economic disparities. Integrating knowledge from neuroscience, psychosocial theories, and some philosophical branches could constructively influence psychiatric residents' academic education. Hence, this “approach” needs not only to be a clinical proposition.

In contrast to other collaborative modes of care, this alternative is distinguished by its ability to transcend the basic treatment standards of referring patients to various medical specialties as needed. Consider transferring a patient to psychotherapy providers because the physician was unprepared to gather insight without carrying out complicated interventions, which do not necessarily operate efficiently. The previously suggested proposition does not translate to overhauling the accepted standards of psychiatric care or forfeiting tried-and-true techniques. The latter scenario explains why a psychiatrist who has cultivated competencies beyond traditional instruction may be far more apt to care for Mexican patients. In addition, foster more positive collaboration with other medical professionals and enhance therapeutic alliances when appropriate.

Consequently, interdisciplinary, philosophical, and biopsychosocial approaches contribute to the development of a comprehensive and refined understanding of the Mexican medical care system and invaluable wisdom that counteract reductionist assumptions about psychiatric disorders.

Conceptual Frameworks

Therefore, resident physicians may refrain from the deliberate and independently driven study of specific conceptual frameworks, as the proposed pedagogical initiative aims to establish a connection between biopsychosocial theories and philosophical principles through specialized interdisciplinarity. Since new coursework requires expert supervision, students could request additional instruction from qualified professors in other interrelated disciplines, such as philosophical scholars. Thereafter, a substantive didactic act would occur, where the psychiatric trainee would continue to achieve standard competencies while cultivating elementary yet functional expertise from academic disciplines that differ from the mental health scientific profession.

In the interim, we aim to avoid disrupting the current psychiatric curriculum and instructional protocol of Mexican higher education institutions. Consequently, this protocol respects the medical and pedagogical rigor essential to achieve this objective and Mexicans' social and cultural diversity. Such an approach is not novel. For instance, the history of psychiatry provides evidence that preceding generations of scholars engaged with various academic disciplines to construct a broad and insightful comprehension of psychopathology. The latter was accomplished by adopting philosophical knowledge to develop theoretical, practical, and still-standard skills for present psychiatry apprentices. Logical positivism (reductionist and radical neurobiology), phenomenology, hermeneutics, and humanistic critical theory are among the philosophical branches legitimately woven into psychiatry's prevailing and traditional academic programs. Although trainees might express apprehensions concerning seemingly deviating from their educational coursework due to unawareness of the philosophical concepts that are already addressed in their previously established specialty qualifications. It was necessary to bring up this longstanding model to remind the next generation of mental health providers about the merits of developing reliable critical thinking. This can only be attained through a philosophy education. In light of the latter, additional examples are provided to clarify the pertinence of continuing this strategy.



For instance, Karl Jaspers's seminal work, **General Psychopathology** (1963), delves into the phenomenological definition of the subjective meaning of psychopathological symptoms, which is a prerequisite to graduate from virtually every psychiatry academic program. In addition, Michel Foucault's **History of Madness** (2006) was instrumental in increasing awareness of the pitfalls of radical reductionism of framing psychiatry as a medical specialty independent of the broader social and cultural narrative. Even though it gave rise to the **antipsychiatry** movement and escalated controversy, Thomas Szasz's provocative critique of the legitimacy of psychiatric disorders in 1960 prompted mental health professionals to reevaluate their intellectual assumptions of the field.

This was a sobering reminder to mental health professionals of the paradoxical effects of chasing the unicorn. The critique contended that the unyielding desire to pursue a genuine, logical positivism in psychiatry, in accordance with the attainment of absolute empiricism in other medical fields, may not be as feasible as initially believed. Although this scenario was and continues to be detrimental to society, it has created opportunities for psychiatrists to develop innovative scientific methodologies that have achieved realistic and valid findings regarding the diagnosis and treatment of mental illness. More importantly, it encouraged psychiatrists who embraced the fundamental boundaries of the field's intellectual founding principles to take action to mitigate societal stigma and unfair biases toward individuals with mental health disorders.

Diagnostic Systems

Standardized diagnostic frameworks, including the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR) (APA; American Psychiatric Association, 2022) and the International Classification of Diseases (ICD-11; World Health Organization, 2019), have shaped psychiatric practice in México by providing a basis for diagnosis and facilitating international comparability. However, these universal categories often inadequately capture the realities of local populations, particularly regarding trauma arising from migration, systemic violence, and gender inequities.

As Maj (2022) articulated, the future of psychiatric diagnosis must encompass flexibility and pluralism. In the Latin American context, scholars in cultural psychiatry emphasize the need to integrate sociocultural determinants into educational frameworks and clinical practice (Lewis-Fernández & Aggarwal, 2020). For practitioners in México, this perspective does not entail rejecting the DSM-5-TR or ICD-11; instead, it advocates for engagement with these diagnostic tools. Regarding psychiatric instruction, philosophical contributions can be translated into clinical lessons. For example, the diagnostic framework can be approached not as a compilation of criteria but as a phenomenological and hermeneutic act that necessitates training in these philosophical areas to understand better the patient's history, significance, and contextual influences.

Education

While empirical and qualitative advancements, rooted in positivist frameworks like neuroimaging, genomics, and psychosocial research, have deepened the understanding of mental disorders (Insel & Cuthbert, 2015; Kendler, 2016), this progress has often overshadowed other fields. Disciplines such as philosophy—including classical logic, rhetoric, non-applied ethics, and metaphysics—have been neglected over recent years. However, these academic fields do not oppose science; they serve distinct objectives. Philosophy addresses fundamental questions about the nature of existence by establishing a foundation for rational comprehension.

Conclusions

The integration of empirical scientific rigor with philosophical inquiry can deepen the understanding of the mind, psychopathology, and psychiatric disorders within Mexican psychiatry. This approach presents a conceptual framework that bridges biological and humanistic perspectives. Implementing this vision requires curricular reforms for psychiatric trainees in Mexico, reforms that are grounded in the nation's sociocultural context. Ultimately, this integrative model serves as a pedagogical and clinical instruction component.

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Systematic Review

Suicidal Ideation and Risk Factors Among Medical Students in Mexico: A Systematic Review

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Conflicts of Interest

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Acknowledgments Keywords

Non applicable Suicidal Ideation; Suicidal Behavior, Medical Students, Risk Factors, Mental Health, México.

Introduction

Suicide is a global public health problem comprising stages such as ideation, planning, attempt, and completion (López, 2014; Pan American Health Organization [PAHO], 2023). Suicidal behavior involves the intent to end one's own life and results from the interaction of genetic predisposition, adverse personal experiences, and environmental variables (Instituto Nacional de Estadística y Geografía [INEGI], 2023; Mirza et al., 2021; Villafañá & Cárdenas, 2022). Studies have identified risk factors associated with this behavior, such as psychiatric disorders (including depression, anxiety, and substance use), traumatic childhood experiences, dysfunctional family environments, and bullying (Secretaría de Salud, 2023; Silva, 2023).

Epidemiology

According to the World Health Organization (WHO), nearly 800,000 people die by suicide each year worldwide, making it the second leading cause of death among individuals aged 15–29 (PAHO, 2023). While global suicide rates show a downward trend, rates in developing countries such as Mexico have increased, rising from 5.3 to 6.3 per 100,000 inhabitants between 2017 and 2023 (INEGI, 2023).

Healthcare Personnel

Certain groups have been identified as being at higher risk for suicide compared to the general population, especially women (Granados-Cosme et al., 2020; Osama et al., 2014; Rotenstein et al., 2016). Medical students face academic demands and social pressures that place them at elevated risk for developing depression, anxiety, insomnia, substance use, and suicidal ideation (Estrella, 2018; Garg et al., 2022; Seo et al., 2021). Evidence indicates that the prevalence of suicidal ideation among medical students exceeds that of the general population. Rotenstein et al., (2016) reported a high prevalence of suicidal ideation among 21,002 medical students across different countries. Studies in Pakistan, France, and Colombia have also shown elevated rates of suicidal thoughts and behaviors among this population (Osama et al., 2014; Salaz-Jasso, 2018).

In Mexico, research has revealed high levels of mental health problems among medical students. At the Universidad Autónoma de Tamaulipas (UAT), 27.6% of first-year medical students presented psychological disturbances (Granados-Cosme et al., 2020). Research from the Universidad Nacional Autónoma de México (UNAM) found that the likelihood of suicidal behavior increases as students progress through medical school, with rates up to four times higher in the final year compared to other university programs (Granados-Cosme et al., 2020). Therefore, an updated systematic review is needed to examine this issue within the Mexican context, guiding the development of evidence-based interventions.

Objective

To conduct a systematic review to identify and describe the main risk factors associated with suicidal ideation among medical students in Mexico, thereby providing information to support the design of preventive strategies.

Materials & Method

Design, Setting & Timeframe

A systematic review of scientific literature was conducted using electronic databases. The search was performed from México City, México, between January and May 2023.

Sample

Articles published in Spanish and English from January 2013 to May 2023 were included. Eligible studies focused on medical students in relation to suicidal behavior and associated risk factors.

Systematic Search Methodology

PubMed Central and Google Scholar were searched using the terms: “suicidal ideation,” “suicidal behavior,” “medical students,” and “México.” Duplicate studies and those with heterogeneous samples, not limited to medical students, were excluded. Studies with insufficient data, contexts focused exclusively on the COVID-19 pandemic, and articles in languages other than Spanish or English were also excluded.

Ethical Aspects

As a systematic review, this study did not require specific ethical approval. All included studies complied with international ethical standards, and the review followed the PRISMA Statement Guidelines.

Statistical Analysis

A narrative-descriptive analysis of the selected studies was performed, categorizing and synthesizing the identified risk factors. Due to methodological heterogeneity across studies, a quantitative meta-analysis was not conducted.



Results

Thirteen studies published between 2013 and 2023 on Mexican medical students were identified and analyzed. Most studies were cross-sectional, with sample sizes ranging from 164 to 981 students. The prevalence of suicidal ideation in the included studies ranged from 9.3% to 27.6%, figures higher than the prevalence reported for the general Mexican population (approximately 1.1%) (Medina-Mora et al., 2023).

Risk Factors

An international meta-analysis of 25 studies identified multiple risk factors for suicidal ideation among medical students, including academic difficulties, alcohol and tobacco use, burnout, comorbid mental disorders, demanding parents, depression, fatigue, female gender, personal history of mental illness or suicide attempts, financial problems, physical or sexual abuse, history of physical violence, living alone, parental neglect, limited social support, insomnia, high stress, and thoughts of dropping out of medical school (Seo et al., 2021). In mental health analyzes, students with comorbid psychiatric disorders showed higher odds of suicidal ideation ($OR = 5.08$), particularly those with depression ($OR = 6.87$) and anxiety ($OR = 3.02$). Statistically significant associations were also reported for burnout ($OR = 6.29$), sleep difficulties ($OR = 3.72$), and high stress ($OR = 3.72$). For suicide attempts, depression ($OR = 10.34$), stress ($OR = 3.25$), female gender ($OR = 3.20$), and alcohol use ($OR = 1.41$) were relevant risk factors (Seo et al., 2021).

Thematic Analysis

Elements associated with the interpersonal theory of suicide were identified. Perceived burdensomeness was linked to academic failure, emotional exhaustion, financial difficulties, and psychiatric disorders (Menon et al., 2020). Thwarted belongingness was associated with social isolation, low perceived support, and barriers to seeking psychological care (Gold et al., 2013; Menon et al., 2020). Common barriers to seeking care included a preference for informal consultations, concerns about confidentiality, fear of academic and social stigma, and anxiety about potential negative consequences for their careers (Dutheil et al., 2019). Medical students and professionals showed an increased risk of suicide. Standard methods included medication overdose (23.5%), firearms (48%), blunt force trauma (14.5%), and hanging. Access to potentially lethal medications increased the risk of death by overdose compared to the general population (Medina-Mora et al., 2023). Some studies identified protective factors against suicidal ideation. Students with higher self-esteem, greater resilience, and adequate social support were less likely to develop suicidal ideation (Gold et al., 2013; Solibieda et al., 2021; Vargas-Terrez et al., 2015).

Discussion

This review's findings indicate a heterogeneous but high prevalence of suicidal ideation among medical students compared to the general population, which aligns with international studies (Rotenstein et al., 2016; Seo et al., 2021). This difference may be explained by factors such as academic demands, competitiveness, and a hostile academic climate, which have been identified as determinants that affect mental health (Menon et al., 2020).

The identification of depression, anxiety, and burnout as key risk factors underscores the need for preventive interventions. The results also support the Interpersonal Theory of Suicide, emphasizing perceived burdensomeness and thwarted belongingness as determinants of suicidal behavior in this population (Chu et al., 2017; Gold et al., 2013). This review also identified barriers to seeking professional help, including confidentiality concerns and internalized stigma, which may limit access to mental health services (Dutheil et al., 2019). Finally, access to lethal means represents an area for further investigation. Institutional policies to regulate such access may reduce risk factors within healthcare training environments (Medina-Mora et al., 2023).

Strengths & Limitations

This review's strengths include its focus on medical students, an understudied population in the region. The emphasis on both risk and protective factors enhances the findings' applicability. Limitations include that the review was not preregistered, the search was limited to two databases, and methodological heterogeneity prevented a quantitative meta-analysis.

Conclusions

The high prevalence of suicidal ideation among medical students indicates a need to address this issue through a comprehensive approach. Designing and implementing preventive strategies that reduce risk factors, promote protective elements such as resilience and social support, and ensure access to mental health services is necessary.

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REVISTA

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Original Article

Emotional Intelligence, Communication, and Burnout in Healthcare Professionals

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Affiliation Abstract

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Conflicts of Interest

The authors declare no conflicts of interest

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Introduction: Mental health and performance in healthcare settings necessitate an examination of factors such as emotional intelligence, assertive communication, job satisfaction, and burnout. These variables impact professional well-being, quality of patient care, and organizational efficacy. **Objective:** To investigate the interrelationships among emotional intelligence, assertive communication, job satisfaction, and burnout in healthcare professionals. **Materials & Methods:** This descriptive, cross-sectional study was conducted at a tertiary-level hospital. We assessed emotional intelligence (Trait Meta-Mood Scale-24), assertive communication (Shelton and Burton's Assertiveness Test), job satisfaction (S/23 Job Satisfaction Questionnaire), and burnout (Maslach Burnout Inventory). Data were analyzed using Spearman's rho (ρ) correlations. **Results:** The sample comprised 125 medical and nursing professionals. Significant positive correlations were found between emotional clarity and assertive communication ($\rho = 0.55$, $p < 0.001$) and between emotional clarity and job satisfaction ($\rho = 0.47$, $p < 0.001$). Conversely, emotional clarity was negatively correlated with emotional exhaustion ($\rho = -0.46$, $p < 0.001$) and depersonalization ($\rho = -0.31$, $p < 0.001$). **Discussion and Conclusions:** The findings indicate a key role of emotional intelligence in healthcare. Interventions aimed at enhancing emotional intelligence can strengthen communication skills, improve job satisfaction, and mitigate burnout, promoting professional well-being and enhancing the quality of patient care.

Keywords

Emotional Intelligence, Assertive Communication, Job Satisfaction, Burnout, Healthcare Professionals.

Introduction

The healthcare environment presents challenges, including high workloads, rotating shifts, and emotionally demanding interactions (Rendón-Montoya et al., 2020). In this context, emotional intelligence determines professionals' biopsychosocial well-being, enhancing their resilience, perceived social support, empathy, and job satisfaction (Jiménez-Picón et al., 2021). Furthermore, emotional intelligence is linked to effective communication, essential for professional well-being and organizational success (Lachira-Estrada et al., 2020).

Emotional Intelligence

The healthcare environment presents challenges, including high workloads, rotating shifts, and emotionally demanding interactions (Rendón-Montoya et al., 2020). In this context, emotional intelligence determines professionals' biopsychosocial well-being, enhancing their resilience, perceived social support, empathy, and job satisfaction (Jiménez-Picón et al., 2021). Furthermore, emotional intelligence is linked to effective communication, essential for professional well-being and organizational success (Lachira-Estrada et al., 2020).

Assertive Communication, Job Satisfaction, And Burnout

Assertive communication is an interpersonal skill that enables individuals to express their emotions, thoughts, and opinions effectively, fostering healthy relationships and reducing workplace conflict (Rueda-Reyes et al., 2022). Job satisfaction, a positive emotional state resulting from the appraisal of one's job experiences, indicates workplace well-being (Gamboa-Ruiz, 2023). Burnout is an occupational phenomenon comprising three dimensions: emotional exhaustion, depersonalization (detachment), and reduced personal accomplishment (Dyrbye et al., 2017). In healthcare, burnout often manifests as negative attitudes shaped by chronic stress and unmet professional expectations (Zhang et al., 2018). Given these considerations, it is necessary to examine how these variables relate to burnout among healthcare professionals to understand this phenomenon.

Objective

This study analyzed the relationships between emotional intelligence, assertive communication, job satisfaction, and burnout among healthcare professionals in a tertiary-level hospital.

Materials & Method

Design, Setting & Timeframe

A descriptive, cross-sectional study design was used. The study was conducted at a tertiary-level healthcare institution between June and September 2023. Data were collected using digital (Google Forms) and printed surveys.

Sample

The population consisted of medical and nursing personnel with at least one year of permanent employment. Non-probabilistic convenience sampling was employed.

Measurement Instruments

The study utilized four instruments: the Trait Meta-Mood Scale-24 (TMMS-24) for emotional intelligence (Fernández-Berrocal et al., 2004); the Assertiveness Test by Shelton & Burton (2004) for assertive communication; the S20/23 Job Satisfaction Questionnaire for job satisfaction (Meliá & Peiró, 1989); and the Spanish-validated Maslach Burnout Inventory (MBI) for burnout syndrome (Maslach et al., 1996).

Procedure

The research team received standardized training. Participants were informed of the study objectives and provided written informed consent. Each participant completed the four instruments individually. Researchers were available to clarify questions. Responses from the TMMS-24 clarity subscale were classified as "adequate clarity" or "inadequate clarity." Questionnaires were anonymized and stored for analysis.

Ethical Aspects

The Institutional Research and Ethics Committees of the ISSSTE Regional Hospital Puebla approved the study (Registration Number 607.2023), which adhered to autonomy, confidentiality, and anonymity.



Statistical Analysis

Data were analyzed using R and GraphPad Prism 9. Descriptive statistics were computed. Categorical variables were reported as frequencies and percentages, while continuous variables were reported as means and standard deviations. Spearman's rank-order correlation coefficient (ρ) was used to examine associations. Statistical significance was set at $p < .05$.

Results

The study included 125 healthcare professionals (64.0% women, 36.0% men), comprising 83 nurses (66.4%) and 42 physicians (33.6%). The mean age was 44.0 years ($SD = 12.3$), with an average of 15.9 years ($SD = 11.3$) of professional experience. Of the sample, 54.4% ($n = 68$) showed adequate emotional clarity, and 59.2% ($n = 74$) were classified as "normally assertive." Regarding burnout, 15.2% ($n = 19$) reported high emotional exhaustion, while 60.8% ($n = 76$) reported high personal accomplishment. Detailed distributions are presented in **Tables 1 and 2**.

Table 1. Association Between Psychological Variables and Levels of Emotional Clarity.

Variable	Inadequate Clarity (n=28) n (%)	Adequate Clarity (n=97) n (%)	p
Normally Assertive	[n] (50.1)	[n] (61.8)	.001
Quite Satisfied	[n] (14.2)	[n] (40.2)	.001
High Personal Accomplishment	[n] (50.0)	[n] (64.0)	.002
Low Emotional Exhaustion	[n] (57.1)	[n] (78.3)	.06
Low Depersonalization	[n] (60.7)	[n] (69.1)	.09

Note. Comparisons were conducted using chi-square tests. Frequencies (n) should be added.

Table 2. Correlations Between Emotional Clarity and Other Psychological Variables.

Variable	ρ	p
Assertiveness	.55	<.001
Job Satisfaction	.47	<.001
Emotional Exhaustion	-.46	<.001
Depersonalization	-.31	<.001

Note. Spearman's rank-order correlation coefficients (ρ). All correlations were statistically significant.

Correlation Analyses

Emotional clarity was positively correlated with assertiveness ($\rho = .55$, $p < .001$) and job satisfaction ($\rho = .47$, $p < .001$). It was negatively correlated with emotional exhaustion ($\rho = -.46$, $p < .001$) and depersonalization ($\rho = -.31$, $p < .001$). Emotional exhaustion positively correlated with depersonalization ($\rho = .69$, $p = .001$). Job satisfaction was negatively correlated with depersonalization ($\rho = -.46$, $p = .001$).

Discussion

The results indicate a significant association between emotional clarity and assertiveness. Healthcare professionals who identify and understand their emotional states tend to communicate more effectively (Pérez-Fuentes et al., 2018). These skills are fundamental to interprofessional collaboration and patient-centered care (Yanchapanta et al., 2022). Emotional clarity was also positively associated with job satisfaction and negatively associated with emotional exhaustion and depersonalization. These patterns are consistent with the emotional intelligence model proposed by Salovey & Mayer (1990), which suggests that the recognition and interpretation of emotional experiences enhance adaptive regulation. The strong association between emotional exhaustion and depersonalization reinforces the burnout model described by Maslach & Leiter (1996).

This study suggests the utility of emotional intelligence training programs, such as the RULER approach (Brackett et al., 2019), which has been shown to improve emotional clarity. Implementing such interventions in healthcare may enhance assertiveness, increase job satisfaction, and prevent burnout. Institutional investment in emotional skills may yield benefits that extend to patient safety, interprofessional collaboration, and staff retention.

Strengths & Limitations

This study's strengths include using validated instruments and a professionally diverse sample. However, limitations must be acknowledged. The non-probabilistic sampling may have introduced selection bias. Self-reported measures are subject to social desirability bias, and the cross-sectional design limits causal inference. Future research should adopt longitudinal approaches to explore the dynamic role of emotional intelligence in clinical practice.

Conclusions

Emotional clarity was associated with greater assertiveness, higher job satisfaction, and lower levels of burnout among healthcare professionals. These findings support integrating emotional intelligence training into workforce development and organizational health programs. By fostering emotional clarity, institutions may enhance individual functioning and broader outcomes such as patient safety, team cohesion, and staff retention.

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REVISTA

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Original Article

Association Between C-Reactive Protein And The Etiology Of Delirium In Hospitalized Patients: A Retrospective Observational Study

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Conflicts of Interest

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Abstract

Introduction. Delirium is a common neuropsychiatric complication in hospitalized patients, particularly older adults. Its onset is influenced by predisposing and precipitating factors and is associated with adverse outcomes, including increased length of stay and mortality. Inflammation is a proposed pathophysiological mechanism. **Objective.** To examine the relationship between C-reactive protein levels, the etiology of delirium, and their association with hospital length of stay and mortality. **Materials & Methods.** A retrospective observational study was conducted at Hospital Ángeles del Pedregal from January 2018 to December 2022. Cases were identified using the Confusion Assessment Method. Data, including demographics, clinical characteristics, admission reactant levels, and delirium triggers, were extracted from electronic medical records. Nonparametric tests were used for analysis. **Results.** A total of 59 patients diagnosed with delirium were included. The mean age was 72.56 ± 16.5 years. Hypoactive delirium was the most common subtype (62.7%). Infectious triggers were present in 55.9% of cases. Higher C-reactive protein levels were significantly associated with an infectious etiology ($p < .001$) but not with mortality or ICU admission. No significant associations were found between the reactant levels and the length of stay or mortality. **Conclusions.** These findings suggest a relationship between systemic inflammation and delirium of infectious etiology. This may inform the development of tools for risk stratification. Etiology-specific interventions remain essential to improving clinical outcomes.

Keywords

C-reactive Protein; Delirium; Confusional Assessment Methods; Hospitalized Patients; Inflammation Research Studies.

Introduction

Delirium is a neuropsychiatric syndrome frequently observed in hospitalized patients, particularly in the elderly population. It is characterized by an acute and fluctuating disturbance in attention and cognition and is associated with increased morbidity, prolonged hospital stays, and elevated mortality rates (Lipowski, 1987; Wilson et al., 2020). Despite its clinical significance, up to 60% of cases remain unrecognized, particularly the hypoactive subtype (Fong et al., 2015). The pathophysiology of delirium is multifactorial, with neuroinflammation emerging as a central mechanism (Ormseth et al., 2023; Shafi et al., 2017).

Systemic inflammation, often marked by elevated levels of biomarkers such as C-reactive protein (CRP), can compromise the integrity of the blood-brain barrier, facilitating the entry of inflammatory mediators into the central nervous system and triggering neuronal dysfunction (Khan et al., 2011). Other proposed mechanisms include neurotransmitter imbalances, particularly cholinergic deficiency and dopaminergic excess, oxidative stress, and disruptions of the circadian rhythm (Maldonado, 2017).

Advanced age is a primary predisposing factor, as age-related changes decrease physiological resilience to stressors such as infections or metabolic disturbances. The diagnosis of delirium, as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), relies on identifying a disturbance in attention and awareness with an acute onset and fluctuating course (American Psychiatric Association [APA], 2013). Validated tools such as the Confusion Assessment Method (CAM) are widely used for bedside detection due to their high sensitivity and specificity (Iglseder et al., 2022). Effective management requires identifying and treating the underlying etiology. Given the proposed link between inflammation and delirium, this study was designed to investigate the role of CRP as a biomarker in relation to the specific causes of the syndrome.

Objective

To examine the relationship between CRP levels, the etiology of delirium, and their association with hospital length of stay and mortality in hospitalized patients at the Hospital Ángeles del Pedregal (Mexico City, México).

Materials & Method

Design, Setting & Timeframe

A retrospective observational study was conducted at Hospital Ángeles del Pedregal, a tertiary care institution in Mexico City, México. The study spanned from January 2018 to December 2022.

Sample

The study population consisted of patients aged 20 years and older diagnosed with delirium at admission or during hospitalization, confirmed using the CAM. Patients with a documented history of a major neurocognitive disorder or incomplete electronic records for the study variables were excluded.

Measurement Instruments

The diagnosis of delirium was based on the CAM (Inouye et al., 1990). CRP levels were measured using standard laboratory immunoturbidimetric assays. Delirium subtypes (hyperactive, hypoactive, mixed) were determined retrospectively from clinical notes based on DSM-5 descriptors (APA, 2013). Delirium etiologies were categorized as infectious, neurological, or metabolic based on a consensus review of clinical, laboratory, and imaging findings, aligned with the International Classification of Diseases Eleventh Edition codes (ICD-11; World Health Organization, 2021).

Procedure

Patient data were extracted from the hospital's electronic health record system. Extracted variables included demographics, clinical characteristics, admission CRP levels, length of hospital stay, Intensive Care Unit (ICU) admission, and in-hospital mortality. All data were anonymized. Two independent researchers cross-validated the dataset to ensure accuracy.

Ethical Aspects

This study adhered to the Declaration of Helsinki and was approved by the Institutional Ethics Committee of Hospital Ángeles del Pedregal (HAP-1080). Written Informed consent was waived per National Research Ethics Regulations for Retrospective Studies Using De-Identified Data (Consejo de Salubridad General, 2014).



Statistical Analysis

The normality of continuous variables was assessed using Kolmogorov–Smirnov and Shapiro–Wilk tests, which indicated a non-normal distribution ($p < .001$). Consequently, nonparametric methods were applied. The Mann–Whitney U test was used for two-group comparisons, and the Kruskal–Wallis test was used for comparisons across three or more groups. Associations between categorical variables were evaluated using Pearson's chi-square test. A two-tailed p -value $< .05$ was considered statistically significant. Statistical analysis was performed using IBM SPSS Statistics Version 25 (IBM-Armonk, 2020).

Results

A total of 59 patients were included in the study. The mean age was 72.56 years ($SD = 16.5$), with 30 females (50.8%) and 29 males (49.2%). Hypoactive delirium was identified in 37 patients (62.7%), hyperactive in 20 (33.9%), and mixed in 2 (3.4%). Infectious causes were the most frequent etiology ($n = 33$, 55.9%), with respiratory infections (27.1%) and urinary tract infections (20.3%) being the most common. Neurological etiologies were identified in 4 patients (6.8%), and the remaining 22 (37.3%) presented with metabolic disturbances. The mean CRP level at admission was 29.1 mg/dL ($SD = 37.2$). A significant association was found between infectious etiology and CRP levels ($\chi^2 = 51.34$, $p < .001$). Among patients with infectious delirium, 48.5% had CRP levels between 11 and 50 mg/dL, and 30.3% had levels between 51 and 100 mg/dL. In contrast, 75.0% of patients with neurological triggers and 81.8% with metabolic triggers had CRP values between 0 and 10 mg/dL. A total of 3 patients (5.1%) died during hospitalization. A Mann–Whitney U test showed no significant difference in CRP levels between survivors and non-survivors ($U = 44.500$, $p = .589$). No significant associations were observed between ICU admission and delirium etiology ($\chi^2 = 2.79$, $p = .19$) or between mortality and CRP levels, etiology, or length of hospitalization. Results are shown in Table 1.

Table 1. Main Characteristics and Outcomes.	
Variable	Value
Age, M (SD)	72.6 (16.5)
Sex, n (%)	Female 30 (50.8), Male 29 (49.2)
Delirium subtype, n (%)	Hypoactive 37 (62.7), Hyperactive 20 (33.9), Mixed 2 (3.4)
Etiology, n (%)	Infectious 33 (55.9), Neurological 4 (6.8), Metabolic 22 (37.3)
CRP, M (SD)	29.1 (37.2)
Significant association	Infectious etiology \times CRP $\chi^2 = 51.34$, $p < .001$
Mortality, n (%)	3 (5.1), ns with CRP ($U = 44.50$, $p = .589$)

Discussion

This study examined the association between systemic inflammation, measured by CRP, and the etiology of delirium in hospitalized patients. The primary finding was that CRP levels were significantly higher in delirium cases of infectious origin than those triggered by neurological or metabolic causes. This differential inflammatory response supports the hypothesis that systemic inflammation plays a role in the pathophysiology of delirium.

The results are consistent with studies indicating that peripheral inflammatory markers may reflect central neuroinflammatory processes contributing to cognitive dysfunction (Khan et al., 2011; Shafi et al., 2017). The lack of association between CRP and mortality in our sample may be attributable to a type II error due to the small sample size and low event rate. The predominance of hypoactive delirium aligns with previous literature, which identifies this subtype as the most common and often underrecognized (Gual et al., 2018). From a pathophysiological perspective, systemic infections can increase blood-brain barrier permeability and activate microglia, suggesting that CRP has clinical utility as a contextual biomarker in the etiologic evaluation of delirium. While not predictive of outcomes in isolation, elevated CRP may be an early indicator of a potential infectious etiology, supporting more targeted diagnostic workups to neuroinflammation (Maldonado, 2017). This mechanism may explain the elevated CRP levels observed in infectious delirium.

Strengths & Limitations

This study's strengths include using a validated screening tool (CAM) and categorizing delirium subtypes and etiologies. The application of nonparametric methods was appropriate for the data distribution. Limitations should be acknowledged. The modest sample size may have limited the ability to detect associations with low-frequency outcomes, such as mortality. The retrospective design carries inherent risks of selection bias and incomplete data. Furthermore, reliance on CRP as a single inflammatory marker does not capture the full complexity of the immune response.

Conclusions

Delirium is a multifactorial syndrome in which inflammation is implicated in the etiology and modulation. This study found that patients with infectious causes of delirium had significantly higher CRP levels than those with non-infectious triggers. Although CRP did not predict mortality or ICU admission in this cohort, its measurement may aid in the etiologic stratification of delirium. Future research should investigate additional biomarkers and incorporate longitudinal designs to elucidate the prognostic relevance of inflammatory profiles.

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Case Report

Executive Dysfunction Secondary to Internal Frontal Hyperostosis in Treatment-Resistant Schizophrenia: A Case Report

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Affiliation. Abstract

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Conflicts of Interest.

The author declares no conflicts of interest.

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Non applicable.

Background: Internal Frontal Hyperostosis (IFH) is a radiologically defined thickening of the inner table of the frontal bone that can compress prefrontal cortices, contributing to neuropsychiatric symptoms.¹ Its coexistence with treatment-resistant schizophrenia (TRS) complicates diagnosis and management. **Objective:** To describe the case of a patient with TRS and comorbid IFH, focusing on the clinical evolution, executive dysfunction, and the utility of early neuroimaging. **Case Presentation:** A 43-year-old female patient with schizophrenia since age 18 was clinically unstable despite treatment with clozapine (600 mg/day) and adjunctive pharmacotherapy. She exhibited psychomotor retardation, concrete thought, and behavioral dyscontrol. Non-contrast cranial computed tomography revealed bilateral frontal bone thickening (2.45 cm) consistent with IFH, with compression of both frontal lobes. The Montreal Cognitive Assessment (16/30) indicated moderate cognitive impairment with prominent executive deficits. The patient was discharged with multidisciplinary follow-up. **Discussion:** Persistent executive dysfunction despite optimized pharmacotherapy suggests that the IFH contributed to pseudo-refractoriness by compressing the dorsolateral prefrontal cortex, potentially blunting the response to clozapine. **Conclusions:** IFH may act as an anatomical modifier in schizophrenia, exacerbating executive dysfunction. Early neuroimaging can uncover structural contributors to treatment refractoriness and guide multidisciplinary management.

Keywords

Clozapine, Dorsolateral Prefrontal Cortex, Executive Dysfunction, Internal Frontal Hyperostosis, Neuroimaging, Treatment-Resistant Schizophrenia.

Introduction

Schizophrenia is a severe psychiatric disorder defined by positive, negative, and cognitive symptoms, including executive dysfunction. Up to 43% of patients do not respond adequately to standard antipsychotic trials and are classified as having treatment-resistant schizophrenia (TRS), which is associated with greater functional disability (Castillo, 2022). Internal Frontal Hyperostosis (IFH) is characterized by bilateral thickening of the inner table of the frontal bone.² While often an incidental finding, significant osseous thickening can compress the prefrontal cortex, leading to cortical atrophy and neuropsychiatric manifestations that overlap with schizophrenia, such as cognitive dysfunction and behavioral changes (Quijano & Velasco, 2015; Torrealba & Mandel, 2020). This clinical and anatomical overlap, particularly involving the prefrontal cortex, can create diagnostic ambiguity. A structural anomaly such as IFH may be masked by a primary psychiatric diagnosis and contribute to apparent treatment resistance (Bracanovic et al., 2020). Because both conditions can affect prefrontal cortex function, early neuroimaging is valuable for identifying structural contributors to treatment refractoriness. This report describes the case of a patient with TRS and comorbid IFH to illustrate this diagnostic challenge and its therapeutic implications. The patient provided written informed consent for the publication of this case report.

Objective

To describe the clinical evolution and therapeutic implications of a patient with treatment-resistant schizophrenia and comorbid IFH, with an emphasis on executive dysfunction and the role of multidisciplinary intervention.

Case Presentation

The patient is a 43-year-old female with a diagnosis of schizophrenia since age 18, institutionalized since age 28. Prodromal symptoms, including withdrawal and paranoid ideation, began at age 17, followed by a psychotic episode at 18. Multiple trials of typical and atypical antipsychotics yielded limited improvement. Her most recent regimen included clozapine (600 mg/day), valproate, fluoxetine, clonazepam, and haloperidol decanoate. Her medical history included hypothyroidism, traumatic polyfractures from a fall, and severe COVID-19 pneumonia requiring mechanical ventilation. There was no history of epilepsy or traumatic brain injury. At age 42, she was hospitalized for worsening psychosis and aggression. Clozapine was titrated to 600 mg/day but failed to stabilize her affective lability and impulsivity. The mental status examination revealed psychomotor retardation, diminished speech spontaneity, concrete and perseverative thought, and absent insight. Affect was blunted with intermittent lability. The neurological examination was notable for exophthalmos and reduced visual acuity, with no focal deficits. A non-contrast cranial computed tomography (CT) scan showed bilateral frontal bone thickening up to 2.45 cm, consistent with IFH, resulting in compression of both frontal lobes (Figure 1). A neurocognitive assessment using the Montreal Cognitive Assessment (MoCA) yielded a 16/30 score, indicating moderate cognitive impairment. Deficits were prominent in executive domains, including conceptual alternation, attention, abstraction, calculation, working memory, and delayed recall (Nasreddine et al., 2005). Despite treatment adherence, the patient remained clinically unstable with persistent behavioral dyscontrol and poor frustration tolerance. The anatomical compression of the dorsolateral prefrontal cortex was hypothesized to contribute to her cognitive deficits and poor treatment response. She was discharged with recommendations for ongoing multidisciplinary follow-up, extended neuropsychological monitoring, and functional rehabilitation.

Figure 1. Non-Contrast Axial Cranial CT Scan Demonstrating Bilateral Frontal Hyperostosis.



Note. The scan demonstrates marked thickening and increased density of the frontal bone, producing bilateral compression of the frontal lobes. Widened sulci and reduced cortical gyration patterns are also visible, consistent with frontotemporal cortical atrophy.

Discussion

This case illustrates the diagnostic and therapeutic complexity arising from the coexistence of IFH and treatment-resistant schizophrenia. Despite optimized pharmacologic management, the patient exhibited persistent executive dysfunction. The cranial CT and neurocognitive profile suggest a direct neuroanatomical contribution to her clinical refractoriness. Executive dysfunction in schizophrenia is linked to frontostriatal dysconnectivity, but structural lesions may also modulate outcomes (Bracanovic et al., 2020). Reduced gray matter volume in the dorsolateral prefrontal cortex (DLPFC) is associated with impaired decision-making and inhibitory control, deficits prominent in this case (Le, 2024). The efficacy of clozapine, the standard for TRS, may be attenuated by disruptions to these executive regulation circuits. The failure to achieve clinical stabilization despite a 600 mg/day clozapine dose proposes a pseudo-refractoriness driven by this anatomical disruption (Nielsen, 2023). This case supports the consideration of cranial neuroimaging in patients with TRS and persistent cognitive or behavioral symptoms. Early identification of structural anomalies such as IFH allows for adapting treatment approaches to include cognitive rehabilitation and other neuropsychological strategies.

Strengths & Limitations

This report's strength is its integration of clinical history, neurocognitive evaluation, and neuroimaging. Its limitations include the absence of functional neuroimaging (fMRI, PET) and the lack of longitudinal cognitive tracking. As a single-case report, its conclusions are hypothesis-generating.

Conclusions

IFH may act as an anatomical modifier in patients with treatment-resistant schizophrenia, exacerbating executive dysfunction. In this case, bilateral frontal lobe compression likely contributed to pharmacologic refractoriness. Early neuroimaging in patients with prominent cognitive symptoms can uncover structural contributors to treatment resistance, guiding a multidisciplinary and anatomically informed management approach.

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All studies involving human participants must have received approval from an institutional ethics committee, and the approval number must be stated in the manuscript. Research must comply with the Declaration of Helsinki and relevant national regulations. A statement confirming informed consent (and assent, for minors) was obtained. All funding sources must be declared, or their absence stated explicitly. Conflicts of interest must be disclosed using the official ICMJE Disclosure Form. Two additional documents are mandatory for submission: a cover letter justifying the manuscript's relevance and a copyright transfer agreement signed by all authors.

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