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# Editorial - The New Mexican Psychiatry: A Strategic Vision for Academic, Clinical, and Guild Development

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## EDITORIAL

The Mexican Psychiatric Association (*Asociación Psiquiátrica Mexicana*, APM) is at a critical juncture as it steps into the 2024–2025 biennium. Mexico is currently facing a pressing surge in mental health issues, with a staggering 20% rise in disability-adjusted life years attributed to mental disorders over the past decade (World Health Organization [WHO], 2023). This urgent situation underscores the immediate need for systemic, interdisciplinary, and academic reform. This editorial explores the potential for the APM to lead these urgent reforms, drawing inspiration from global models, proposing strategic initiatives, and highlighting the guild's academic and clinical leadership.

## CURRENT NATIONAL AND INTERNATIONAL LANDSCAPE OF MENTAL HEALTH

Mental health services in Mexico face unique challenges, including underfunding, with less than expected than the national health budget allocated to this sector (*Instituto Nacional de Estadística y Geografía* [INEGI], 2024). This figure contrasts starkly with the average budget reported in high-income countries (WHO, 2023). Despite progress in expanding telepsychiatry in underserved states like Oaxaca and Chiapas, significant gaps persist in treatment adherence and accessibility. Approximately one-third of Mexicans with mental disorders receive no formal care (WHO, 2023), a statistic exacerbated by stigma, geographic barriers, and a limited psychiatric workforce.

On the other hand, internationally, associations such as the *Royal College of Psychiatrists* (RCP) in the United Kingdom and the *American Psychiatric Association* (APA) have successfully implemented strategies to mitigate similar challenges. For instance, the RCP has reported reduced inpatient admissions through interdisciplinary community care models (RCP, 2022), while the APA has leveraged digital tools to enhance access and reduce disparities (APA, 2022). These examples signal opportunities for the APM to adapt and implement comparable strategies tailored to Mexico's unique sociocultural context.

## THE ROLE OF THE GUILD

The APM is uniquely positioned to harmonize academic, clinical, and guild objectives, fostering a more unified mental health ecosystem in Mexico. Its academic contributions should prioritize robust, locally relevant research. In addition, the guild's commitment to international collaborations, particularly with the *World Psychiatric Association* and the *Asociación Ibero-LatinoAmericana de Neurociencias y Psiquiatría*, and nationality with the *Asociación Mexicana de Psiquiatría Infantil*, can bolster these efforts, facilitating knowledge exchange. This unique position of the APM instills confidence in its ability to lead the mental health reform in Mexico.

Conjunctively, the APM can champion the need for standardized protocols in telepsychiatry and digital mental health tools from a clinical standpoint. The guild can advocate for similar innovations in Mexico by drawing inspiration from successful models in countries like India, which has integrated artificial intelligence-driven diagnostics to reduce the mental health gap in rural mental areas (Garg et al., 2023).

Guild-wise, the APM protects psychiatrists' professional interests while promoting public trust. Campaigns against stigma, modeled on the *Brazilian Association of Psychiatry's* similar and successful efforts, could improve public perceptions of mental health services, increasing treatment-seeking behaviors.

## STRATEGIC PROPOSALS FOR 2024–2025 AND FUTURE BIENNIA

To realize its objectives, APM could implement interconnected strategies to strengthen its impact on research, clinical training, editorial endeavors, technological integration, and policy advocacy. Strengthening scientific infrastructure involves forging partnerships with academic institutions and international organizations to secure funding for large-scale mental health studies in Mexico, as demonstrated by the international project with the *Asociación Colombiana de Psiquiatría* to explore newer and important topics such as palliative psychiatry and the interinstitutional agreement with the *Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz* for collaborative editorial projects. In the editorial domain, the relaunch and transformation of the guild's official journal under international publication standards, including bilingual peer-reviewed articles and digital distribution, reflects the APM's commitment to scientific dissemination. Moreover, supplemental clinical training expansion can be explored through the regular development of continuous educational workshops, on-demand psychiatric training, and other miscellaneous programs such as weekend seminars and webinars. Technological integration is another focus, with innovative efforts to scale initiatives onto recent developments in artificial intelligence applications within evidence-based frameworks for

mental health. Finally, the guild can continue to advocate for policy changes by collaborating with policymakers to raise concerns about the mental health budget and ensure equitable resource distribution, thus addressing systemic inequities in access to care.

## CHALLENGES AND OPPORTUNITIES

While these initiatives are ambitious, they are not without challenges. Funding limitations, resistance to change, and infrastructural constraints may pose hurdles. However, the potential benefits justify these efforts and offer hope for a brighter future not only for the guild but also for Mexican psychiatry. Moreover, the APM's unwavering commitment to interdisciplinary collaboration and continuous professional development positions it as a leader in this transformation, offering reassurance for the future of mental health in Mexico.

## CONCLUSIONS

**The 2024–2025 biennium** presents an unprecedented opportunity for the APM to redefine its role in Mexico's mental health landscape. By integrating academic rigor, clinical excellence, and guild advocacy, the APM can lead efforts to address systemic challenges, improve access to care, and elevate the profession's standing nationally and internationally. These initiatives have the potential to significantly reduce the burden of mental disorders in Mexico, improve treatment adherence, and enhance public trust in mental health services. This vision, while aspirational, is grounded in a pragmatic understanding of Mexico's needs and the global best practices that can inform its future.

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# Mental Health Services Utilization in Patients with Major Depressive Disorder and Personality Disorders: A Retrospective Analysis in a Mexican Tertiary-Level Psychiatric Hospital

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## Resumen

### INTRODUCCIÓN

El trastorno depresivo mayor (TDM) y los trastornos de personalidad (TP) son comorbilidades frecuentes que agravan la atención clínica. Las personas con ambas condiciones suelen requerir hospitalizaciones más prolongadas y regímenes terapéuticos complejos, lo que incrementa significativamente la utilización de los servicios de salud mental.

**Objetivo:** Evaluar la asociación entre la presencia de TP y la utilización de servicios de salud mental en individuos hospitalizados con TDM en un hospital psiquiátrico de tercer nivel en México.

**Materiales y Métodos:** Estudio retrospectivo basado en diagnósticos de TDM según los criterios del Manual Diagnóstico y Estadístico de los Trastornos Mentales, Cuarta Edición (DSM-IV, por sus siglas en inglés). Se analizaron variables sociodemográficas, clínicas y de utilización de servicios mediante análisis estadístico descriptivo y modelos multivariados.

**Resultados:** Se incluyó a 237 participantes. Los individuos con TDM y TP presentaron un mayor número de hospitalizaciones, tratamientos farmacológicos más complejos y una edad promedio menor en el primer ingreso hospitalario en comparación con aquellos sin TP.

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**Conclusiones:** La comorbilidad con TP incrementa la complejidad clínica y los recursos necesarios para la atención de pacientes con TDM en un hospital de tercer nivel.

**Palabras Clave:** *Trastorno depresivo mayor; Trastornos de Personalidad; Servicios de Salud Mental; Hospitalización.*

## ABSTRACT

**Background:** Major depressive Disorder (MDD) and personality disorders (PD) are frequent comorbidities that exacerbate clinical complexity. Individuals with both conditions often require prolonged hospitalizations and intricate therapeutic regimens, significantly increasing the utilization of mental health services. This study underscores the urgent need for integrated care models, which involve coordinated and collaborative care among different healthcare providers, to address the complex needs of these patients.

**Objective:** To evaluate the association between the presence of PD and the utilization of mental health services among individuals hospitalized with MDD in a Mexican tertiary-level psychiatric hospital.

**Materials and Methods:** A retrospective study was conducted on MDD diagnosis according to the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV). Sociodemographic, clinical, and service utilization variables were analyzed using descriptive statistics and multivariate models.

**Results:** A total of 237 participants were included. Individuals with MDD and PD exhibited a higher number of hospitalizations, more complex pharmacological treatments, and a younger average age at their first hospitalization compared to those without PD.

**Conclusions:** PD comorbidity increases clinical complexity and healthcare resource utilization among MDD patients in tertiary-level psychiatric care.

**Keywords:** *Major Depressive Disorder; Personality Disorders; Mental Health Services; Hospitalization.*

## BACKGROUND

### Major Depressive Disorder (MDD)

MDD is a global health challenge due to its high prevalence, chronicity, association with disability, and reduced quality of life. It imposes significant economic and societal burdens, escalating healthcare costs worldwide (Greenberg et al., 2015). Epidemiological data suggest that the prevalence of MDD is rising, particularly among younger populations. Furthermore, notable sex disparities exist, with females exhibiting higher diagnostic rates (5.5%) compared to males (3.2%) (Ferrari et al., 2013; Ishikawa et al., 2015; Maske et al., 2016). MDD episodes last approximately 37.7 weeks on average, disproportionately affecting individuals during their most productive years and amplifying personal, familial, and societal burdens (Greenberg et al., 2015).

The etiology of MDD results from a complex interplay of biological, psychological, and environmental factors. For instance, early-life adversities, such as parental psychiatric disorders or chronic exposure to significant stressors, significantly heighten the risk of developing MDD (Li et al., 2015). Additionally, personality traits like high harm avoidance and low self-directedness are frequently observed in individuals with MDD, distinguishing them from other mood disorders like Bipolar I and II (Zaninotto et al., 2016).

### Personality Disorders (PD)

According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) (American Psychiatric Association [APA], 2013), PD is characterized by enduring, inflexible, and maladaptive patterns of cognition, emotion, and behavior that impair functioning in various domains. These disorders often complicate treatment plans due to emotional dysregulation, interpersonal conflicts, and resistance to standard interventions for mood disorders (APA, 2013). Empirical data support these challenges: Bender et al. (2001) found that individuals with PD were 1.79 times more likely to require hospitalization and engaged in psychotherapy services at rates five times higher than those without PD. Hörz et al. (2010) further emphasized the chronic, recurrent nature of borderline personality disorder (BPD), characterized by frequent treatment discontinuation and subsequent re-engagement.

### Comorbidity Between MDD and PD

The co-occurrence of MDD and PD creates a clinically distinct and multifaceted presentation. This comorbidity, which refers to the simultaneous presence of two or more chronic conditions in a patient, increases symptom severity, recurrence rates, and functional impairments, thereby complicating treatment approaches. Moreover, individuals with both MDD and PD are at heightened risk for suicidal ideation, self-injurious behaviors, and impulsivity (Nigatu et al., 2015; Alegria et al., 2013). Shared risk factors, including prolonged exposure to chronic stress and adverse life events, further compound these challenges (Zaninotto et al., 2016).

Statistical analyses reveal significant associations between PD and adverse clinical outcomes in MDD populations. For example, patients with comorbid PD exhibit earlier onset of symptoms, higher treatment resistance, and increased psychiatric

comorbidities, necessitating multidisciplinary care strategies (Sansone et al., 1998; Davidson, 2002).

### Impact on Mental Health Service Utilization

The intersection of MDD and PD substantially influences mental health service utilization, particularly in specialized care settings. Individuals with these comorbidities require prolonged, intensive, multidisciplinary interventions to address their complex clinical needs. Davidson (2002) reported nearly double the healthcare utilization rates among individuals with PD compared to those without such diagnoses.

Similarly, historical evidence corroborates this trend. Reich et al. (1989) found elevated rates of hospitalization and outpatient consultations among patients with PD compared to the general population. Sansone et al. (1998) highlighted that women with BPD were exceptionally high utilizers of healthcare services, underscoring the strain these comorbidities place on psychiatric care systems.

## JUSTIFICATION

Despite the high prevalence and significant clinical implications of MDD and PD comorbidities, research exploring their combined impact on healthcare utilization remains limited, particularly in developing nations. Most existing studies focus on outpatient populations, often neglecting hospitalized individuals' unique utilization patterns and challenges. This study aims to fill this gap by investigating the utilization patterns of mental health services among inpatients diagnosed with MDD, with and without PD comorbidities, in a tertiary-level psychiatric hospital in Mexico. Through this research, we aim to provide actionable insights that can guide resource allocation and inform the development of integrated care models tailored to the needs of this high-risk population.

This study addresses these gaps by investigating the utilization patterns of mental health services among inpatients diagnosed with MDD, with and without PD comorbidities, in a tertiary-level psychiatric hospital in Mexico. Through this research, we aim to provide actionable insights that can guide resource allocation and inform the development of integrated care models tailored to the needs of this high-risk population.

## OBJECTIVES

To document and assess the association between the presence of PD and the utilization of mental health services in individuals hospitalized with MDD.

## MATERIALS AND METHODS

### Study Design and Setting

This research employed a retrospective, descriptive, comparative, and correlational design. It was conducted at the *Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz* (INPRFM) in Mexico City. Data collection included comprehensive reviews of clinical records and institutional databases for patients hospitalized between January 1 and December 31, 2000.

### Sample

The study included participants aged 18 years or older who were hospitalized during the specified period with a primary diagnosis of MDD ac-

cording to DSM-IV criteria (APA, 2000). Inclusion criteria required participants to have completed inpatient care during the study period and have documented outpatient follow-up. Participants were excluded if they were diagnosed with bipolar disorder, schizophrenia, schizoaffective disorder, or any psychotic disorder or if they discontinued outpatient follow-up after hospitalization. Sampling was open and convenience-based.

### Variables

The primary independent variable was the presence of PD, categorized into three levels: no diagnosis, subthreshold traits, and a complete PD diagnosis by DSM-IV criteria (APA, 2000). The dependent variables included sociodemographic characteristics (sex, educational attainment, and employment status), clinical outcomes (age at first hospitalization, comorbid Axis I disorders, history of suicide attempts, and lifetime substance use), and service utilization measures (duration of institutional care, number of hospitalizations, number of medications prescribed, and attendance at outpatient services).

### Data Collection

Data were extracted from hospital databases and clinical records. Diagnoses were confirmed using DSM-IV criteria (APA, 2000). Two independent reviewers resolved any discrepancies through *Delphi* consensus.

### Statistical Analysis

The analysis was conducted in two stages. In the first stage, a comparative analysis was performed to identify differences between groups based on the presence of Personality Disorder (PD). Quantitative variables were analyzed using one-way ANOVA with post hoc Scheffé tests, categorical variables were assessed using chi-square tests ($x^2$), and ordinal variables were examined using the Mantel-Haenszel linear association procedure. All analyses in this stage were conducted using SPSS version 25.0 (IBM Corp., Armonk, NY).

In the second stage, correlational analysis was performed using path analysis and Structural Equation Modeling (SEM). Variables with high bivariate correlations were carefully selected to minimize collinearity, and stepwise multiple regression models were constructed using backward elimination criteria ($p < 0.001$ for inclusion, $p > 0.002$ for exclusion). SEM was conducted using AMOS version 6.3 (IBM Corp., Armonk, NY), with model fit evaluated through the chi-square/degrees of freedom ratio ($x^2/df$; acceptable range: 2–3), Adjusted Goodness-of-Fit Index (AGFI; > 0.80), and Root Mean Square Error of Approximation (RMSEA; < 0.08 with a 90% confidence interval).

### Ethical Considerations

The study adhered to ethical principles outlined in the Declaration of Helsinki and complied with national regulations for research involving human participants. Before initiating the study, approval was obtained from the INPRFM Research Ethics Committee (Approval Folio: 001-11241-M4-2004). As this was a retrospective study with anonymized data, informed consent was not required. All measures were taken to ensure participant confidentiality, including secure storage of data handling and de-identifying personal information.

## RESULTS

Initially, 258 participants were recruited; however, 21 were excluded due to a lack of outpatient follow-up, resulting in a final sample of n = 237. The sample comprised 144 women (60.8%; 95% CI: 54.5%–66.8%) and 93 men (39.2%; 95% CI: 33.2%–45.5%), with a mean age of 34.7 ± 9.2 years (range: 18–60).

### Sociodemographic Characteristics

Educational attainment showed that n = 53 participants (22.4%; 95% CI: 17.4%–28.2%) had completed primary education, n = 140 (59.1%; 95% CI: 52.7%–65.2%) had middle or high school education, and n = 44 (18.5%; 95% CI: 14.0%–24.1%) had university-level education. Employment status revealed that n = 52 participants (21.9%; 95% CI: 16.9%–27.8%) were unemployed, n = 123 (51.9%; 95% CI: 45.4%–58.3%) were engaged in unpaid domestic or caregiving work, and n = 62 (26.2%; 95% CI: 20.8%–32.4%) held paid employment. Complete data is shown in **Table 1**.

**Table 1:** Sociodemographic Distribution Among Groups by PD Classification

| Studied Variable | Without disorder (n, %) | With Traits (n, %) | With disorder (n, %) | $\chi^2$ | p |
|---|---|---|---|---|---|
| **Sex** | - | - | - | **3.48** | **0.175** |
| Female | 33 (17.8%) | 92 (49.7%) | 60 (32.4%) | - | - |
| Male | 12 (23.1%) | 30 (57.7%) | 10 (19.2%) | - | - |
| **Educational Attainment** | - | - | - | **17.15** | **0.002**** |
| Primary | 20 (37.7%) | 24 (45.3%) | 9 (17.0%) | - | - |
| Middle and High School | 20 (14.3%) | 75 (53.6%) | 45 (32.1%) | - | - |
| Higher Education | 5 (11.4%) | 23 (52.3%) | 16 (36.4%) | - | - |
| **Employment Status** | - | - | - | **3.37** | **0.498** |
| Unemployed | 11 (21.2%) | 24 (46.2%) | 17 (32.7%) | - | - |
| Unpaid Domestic/Care Work | 25 (20.3%) | 60 (48.8%) | 38 (30.9%) | - | - |
| Paid Employment | 9 (14.5%) | 38 (61.3%) | 15 (24.2%) | - | - |

*Note: This table summarizes sociodemographic characteristics across groups classified by personality disorder status: without disorder, with traits, and with disorder. Significant differences ($p < 0.05$) were observed in educational attainment, suggesting variations in personality disorder prevalence across educational levels.*

### Comorbidities

Comorbid Axis I disorders were present in 37.6% of participants (n = 89; 95% CI: 31.9%–43.7%), with 8.9% (n = 21; 95% CI: 5.9%–13.2%) having two or more disorders. The most frequent comorbidities were anxiety disorders (20.7%; n = 49; 95% CI: 15.8%–26.6%). Other comorbid conditions included obsessive-compulsive disorder (4.2%; n = 10; 95% CI: 2.2%–7.6%) and eating disorders (0.8%; n = 2; 95% CI: 0.1%–3.1%).

### Personality Disorders (PD)

PD was present in 29.5% of participants (n = 70; 95% CI: 23.9%–35.9%), with subthreshold PD traits observed in 51.5% (n = 122; 95% CI: 45.0%–57.8%) and 19.0% (n = 45; 95% CI: 14.2%–24.6%) showing no evidence of PD. Among those diagnosed with PD, Cluster B disorders were the most prevalent (n = 41; 58.2%), followed by Cluster C (n = 23; 32.1%) and Cluster A (n = 3; 4.6%). BPD was the most common PD within Cluster B, accounting for 63.4% (n = 26; 95% CI: 50.0%–75.0%) of this group.

### Correlations with PD

No significant differences were observed between sexes in the presence of PD ($x^2 = 3.48$, $p = 0.175$). Among women (n = 144), 22.9% (n = 33; 95% CI: 16.4%–30.8%) had no PD, 63.9% (n = 92; 95% CI: 55.7%–71.5%) exhibited subthreshold traits, and 41.7% (n = 60; 95% CI: 33.8%–50.1%) were diagnosed with PD. For men (n = 93), 12.9% (n = 12; 95% CI: 7.5%–21.4%) showed no PD, 66.7% (n = 30; 95% CI: 56.2%–75.5%) exhibited subthreshold traits, and 20.4% (n = 10; 95% CI: 11.4%–34.1%) were diagnosed with PD. Educational attainment showed significant differences: higher-education participants were more likely to meet PD criteria ($x^2 = 17.15$, $p = 0.002$). For instance, 37.7% (n = 20; 95% CI: 25.5%–51.4%) of those with primary education had no PD, compared to only 11.4% (n = 5; 95% CI: 4.7%–24.4%) of those with a university degree.

### Health Service Utilization

Participants with PD demonstrated significantly higher use of health services. Those with PD spent an average of 46.93 ± 14.5 months (95% CI: 42.8–51.0, range: 12–84) as institutional clients, compared to 35.87 ± 12.3 months (95% CI: 32.4–39.3, range: 10–65) for those without PD ($F (2,234) = 18.61$, $p < 0.001$). Participants with subthreshold PD traits had an intermediate duration of 40.07 ± 13.8 months (95% CI: 36.7–43.4, range: 15–70).

Similarly, participants with PD had a higher number of hospitalizations, averaging 2.16 ± 1.2 (95% CI: 1.9–2.4, range: 1–5), compared to 1.27 ± 0.9 (95% CI: 1.0–1.5, range: 1–3) for those without PD ($F (2,234) = 10.50$, $p < 0.001$). Subthreshold PD traits were associated with an intermediate average of 1.48 ± 1.0 hospitalizations (95% CI: 1.2–1.7, range: 1–4).

Pharmacological intervention patterns also differed significantly. Participants with PD were prescribed an average of 4.36 ± 1.5 medications (95% CI: 3.9–4.7, range: 2–7), compared to 2.84 ± 1.2 (95% CI: 2.5–3.2, range: 1–5) for those without PD ($F (2,234) = 13.65$, $p < 0.001$). Those with subthreshold traits had a mean of 3.67 ± 1.4 medications (95% CI: 3.3–4.0, range: 2–6), closely aligning with the PD group. The rest of the data is illustrated in **Table 2** and **Table 3**.

**Table 2:** Health Service Utilization by PD Status,

| Group | Mean Duration as Client (months) | Hospitalizations (mean) | Medications Prescribed (mean) |
|---|---|---|---|
| With PD | 46.93 ± 14.5 | 2.16 ± 1.2 | 4.36 ± 1.5 |
| Without PD | 35.87 ± 12.3 | 1.27 ± 0.9 | 2.84 ± 1.2 |
| Subthreshold Traits | 40.07 ± 13.8 | 1.48 ± 1.0 | 3.67 ± 1.4 |

*Note: Data include participants diagnosed with Personality Disorders (PD), those without PD, and those exhibiting subthreshold traits. The table highlights significant differences in health service utilization, including duration as institutional clients, frequency of hospitalizations, and the number of medications prescribed*

**Table 3:** Comparison of Variables Between Groups With and Without PD.

| Studied Variable | Without Disorder (Mean ± SD) | With Disorder (Mean ± SD) | Significance (F(df), p) |
|---|---|---|---|
| Time as a patient in the hospital (months) | 35.87 ± 19.75 | 46.93 ± 28.71 | (1,113) = 5.114, p = 0.026 |
| Periods in treatment | 1.38 ± 0.68 | 1.63 ± 1.08 | (1,113) = 1.929, p = 0.168 |
| Number of hospital admissions | 1.27 ± 0.62 | 2.16 ± 1.37 | F(1,113) = 16.802, p < 0.001 |
| Number of hospital days | 1.27 ± 0.62 | 2.16 ± 1.37 | F(1,113) = 16.802, p < 0.001 |
| Age at first hospital admission (years) | 34.02 ± 24.18 | 54.16 ± 46.69 | F(1,113) = 7.125, p = 0.009 |
| Attendance to external consultation | 16.11 ± 15.51 | 15.51 ± 13.91 | F(1,113) = 0.046, p = 0.83 |

| | | | |
|---|---|---|---|
| Absences of external consultation | 3.33 ± 2.88 | 5.40 ± 5.18 | F(1,113) = 5.969, p = 0.016 |
| Attendance to psychotherapy sessions | 4.04 ± 8.96 | 5.17 ± 9.79 | F(1,113) = 0.387, p = 0.535 |
| Absences of psychotherapy sessions | 0.89 ± 1.82 | 1.73 ± 2.95 | F(1,113) = 2.924, p = 0.09 |
| Emergency consultations | 1.02 ± 1.27 | 1.74 ± 2.28 | F(1,113) = 3.753, p = 0.055 |
| Internal medicine appointments | 1.07 ± 3.14 | 0.46 ± 1.46 | F(1,113) = 1.975, p = 0.163 |
| Neurology appointments | 0.27 ± 0.58 | 0.27 ± 1.24 | F(1,113) = 0.001, p = 0.981 |
| Laboratory tests | 4.47 ± 3.62 | 4.59 ± 3.43 | F(1,113) = 0.032, p = 0.859 |
| Brain imaging studies | 1.18 ± 0.65 | 1.21 ± 0.54 | F(1,113) = 0.108, p = 0.744 |
| Electroencephalography studies | 2.07 ± 1.01 | 2.10 ± 1.36 | F(1,113) = 0.02, p = 0.888 |
| Number of prescribed medications | 2.84 ± 1.24 | 4.36 ± 1.97 | (1,113) = 21.08, p < 0.001 |
| Use of drugs of abuse | 0.44 ± 0.69 | 1.23 ± 1.26 | (1,113) = 14.477, p < 0.001 |

*Note: This table summarizes the distribution of studied variables between groups with and without a diagnosed personality disorder. Significant differences ($p < 0.05$) are observed in several domains, including hospital admissions, number of prescribed medications, and use of drugs of abuse.*

## Discussion

The findings of this study emphasize the significant influence of PD comorbidity on healthcare utilization and clinical outcomes among individuals with MDD. Patients with PD required longer durations of care, were hospitalized at younger ages, and exhibited more complex pharmacological needs compared to those without PD. These results align with previous research indicating that PD amplifies the severity of depressive episodes, complicates treatment pathways, and places substantial demands on healthcare systems (Bender et al., 2001; Davidson, 2002).

### Sociodemographic Variations

The sociodemographic analysis revealed critical insights into the distribution of PD within the sample. Women accounted for most participants, a finding consistent with the established higher prevalence of MDD among females (Ferrari et al., 2013). Higher educational attainment was paradoxically associated with a greater likelihood of PD diagnosis, potentially reflecting improved access to diagnostic services or increased awareness among educated individuals (Hueston et al., 1996). Furthermore, employment status played a significant role, with high unemployment rates observed among participants with PD. This suggests a cyclical relationship wherein occupational instability exacerbates interpersonal dysfunction, while PD traits impair job retention and socioeconomic stability (Magallón-Neri et al., 2012).

### Comorbidities and Clinical Complexity

The study highlighted a high prevalence of Axis I comorbidities, particularly anxiety disorders, among participants with PD. Such comorbid conditions exacerbate clinical complexity, often requiring integrated therapeutic approaches to address both primary and secondary psychopathologies effectively. These findings signal the need for comprehensive, personalized treatment strategies tailored to this population's unique challenges (Trull et al., 2010).

### Healthcare Utilization Patterns

Patients with PD demonstrated significantly greater healthcare utilization, characterized by extended care durations and higher hospitalization rates. Notably, these individuals were hospitalized at younger ages, highlighting the need for early detection and intervention to mitigate the long-term burden of PD traits, particularly during adolescence or early adulthood (Livesley et al., 1993). Additionally, the observed increase in the number of prescribed medications reflects the complex interplay between PD and MDD, necessitating meticulous pharmacological management combined with psychosocial interventions.

### Strengths

This study provides valuable data on the interplay between MDD and PD in a hospitalized population, one of the most clinically severe and resource-intensive settings.

### Limitations

Despite its contributions, the study has notable limitations. The retrospective design, reliant on clinical records, may introduce bias due to incomplete or inconsistent documentation. While appropriate for the study period, the application of DSM-IV criteria limits comparability with research utilizing newer diagnostic frameworks.

Additionally, unmeasured variables, including cultural influences, healthcare disparities, and social stigma, may have mediated the outcomes and warrant further exploration.

### Future Directions

Future research should adopt DSM-5 traditional or newer dimensional criteria to investigate dimensional PD traits and their clinical implications comprehensively. Efforts should focus on developing and evaluating integrative care models that combine pharmacological and psychosocial interventions tailored to the needs of individuals with comorbid MDD and PD. Moreover, exploring the impact of healthcare access disparities in resource-limited settings could inform policies to achieve equitable mental healthcare delivery.

## CONCLUSIONS

This study shows the impact of PD comorbidity on the healthcare trajectories of individuals with MDD. Patients with PD experience higher hospitalization rates, longer care durations, and more intricate pharmacological regimens, reflecting the chronic and resource-intensive nature of these conditions. Sociodemographic factors, such as sex, education, and employment, further influence service utilization patterns, underscoring the importance of personalized, multidimensional care strategies. These findings contribute to a deeper understanding of the challenges posed by comorbid MDD and PD and highlight the need for proactive, integrative care approaches tailored to this population's complex needs.

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## CONFLICTS OF INTEREST

The authors lack conflicts of interest to disclose.

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# The Influence of Video Games on Executive Functions in Adolescents: A Systematic Scoping Review with Meta-aggregation

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## Resumen

### INTRODUCCIÓN

Los videojuegos son una forma de entretenimiento ampliamente difundida a nivel global y son utilizados con frecuencia por los adolescentes. Se ha propuesto que estos influyen en las funciones ejecutivas (FEs), procesos cognitivos esenciales para la autorregulación, la toma de decisiones y el comportamiento orientado a objetivos.

**Objetivo:** Evaluar la influencia de los videojuegos en las FEs de los adolescentes mediante una revisión sistemática exploratoria.

**Materiales y Métodos:** Siguiendo las guías de *Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews* (PRISMA-SCR, por sus siglas en inglés), se identificaron estudios revisados por pares publicados hasta 2024 en bases de datos indexadas como PubMed, PsycINFO y Scopus. Se incluyeron investigaciones que evaluaron las FEs en adolescentes de entre 12 y 18 años en relación con sus comportamientos de juego. Se realizó una meta-agregación que integró tamaños de efecto cuantitativos y perspectivas contextuales cualitativas.

**Resultados:** Treinta y ocho estudios cumplieron con los criterios de inclusión. Los videojuegos de acción mejoran consistentemente la memoria de trabajo visoespacial y la flexibilidad cognitiva, con tamaños de efecto combinados que variaron entre pequeños y moderados. Por otro lado, el juego

excesivo se asoció con un menor control inhibitorio y un aumento en la impulsividad.

**Conclusiones:** Los videojuegos influyen heterogéneamente en las FEs de los adolescentes, y dicho efecto depende del tipo de juego, la duración del mismo y las diferencias individuales. Se recomienda realizar investigaciones adicionales para profundizar en los mecanismos subyacentes y los impactos a largo plazo, especialmente en contextos socioculturales y socioeconómicos.

**Palabras Clave:** *Videojuegos; Funciones Ejecutivas; Adolescentes; Meta-agregación; Control Inhibitorio; Memoria de Trabajo.*

## ABSTRACT

**Background:** Video games are a globally widespread form of entertainment frequently used by adolescents. It has been suggested that they influence executive functions (EFs), crucial cognitive processes for self-regulation, decision-making, and goal-oriented behavior.

**Objective:** To evaluate video games' influence on adolescents' EFs through a scoping systematic review.

**Materials and Methods:** Following the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews* (PRISMA-SCR) guidelines, peer-reviewed studies published up to 2024 were identified in indexed databases such as PubMed, PsycINFO, and Scopus. Studies that evaluated EFs in adolescents aged 12 to 18 in relation to their gaming behaviors were included. A meta-aggregation was conducted to integrate quantitative effect sizes and qualitative contextual perspectives.

**Results:** Thirty-eight studies met the inclusion criteria. Action video games consistently improved visuospatial working memory and cognitive flexibility, with combined effect sizes ranging from small to moderate. Conversely, excessive gaming was associated with decreased inhibitory control and increased impulsivity.

**Conclusions:** Video games have heterogeneous effects on adolescents' EFs, influenced by the type of game, its duration, and individual differences. Further research is recommended to explore underlying mechanisms and long-term impacts, particularly in sociocultural and socioeconomic contexts.

**Keywords:** *Video Games; Executive Functions; Adolescents; Meta-aggregation; Inhibitory Control; Working Memory.*

## BACKGROUND

### Adolescence and Executive Functions

Adolescence is a critical developmental period characterized by substantial growth in cognitive abilities, primarily executive functions ([EFs], Selemon, 2013). These higher-order processes include working memory, inhibitory control, and cognitive flexibility, which are essential for decision-making, problem-solving, and self-regulation. The prefrontal cortex, which governs these functions, undergoes significant maturation during this period, with an increase in gray matter volume and enhanced synaptic pruning (Petanjek et al., 2011).

### Video Games and Cognitive Development

Video games are a type of interactive entertainment medium for all ages, with research reports that most adolescents engage in gaming as a leisure activity (Bavelier et al., 2012). Other studies suggest that specific types of video games, such as action and strategy games, may improve cognitive functions by providing dynamic and challenging environments; for example, action games enhance reaction times by 20–30 milliseconds and improve visual selective attention by 15–25% compared to non-gamers. Strategy games, on the other hand, encourage planning, resource management, and problem-solving (Green & Bavelier, 2019).

However, excessive gaming (> 10 hours per week) has been associated with adverse effects. Studies link prolonged screen time to disrupted sleep patterns and impaired academic performance, with average reductions of 1.5–2 hours in nightly sleep and a decline of academic productivity in adolescents who engage in excessive gaming, time has not been consensually established (Weaver et al., 2010; Cain & Gradisar, 2010).

### Demographic Factors

Research shows several factors may influence the relationship between video games and EFs. For example, socioeconomic status, access to technology, and educational resources determine whether gaming yields cognitive benefits or detriments (Granic et al., 2014). In Oriental educational systems, gaming integration into curricula has shown potential cognitive benefits, such as improving problem-solving skills by at least 20% compared to traditional methods like cognitive training or restructuring (Bai et al., 2020; Kim & Kim, 2021). In addition, sex differences in gaming preferences and play duration are lacking, and their implementation into research protocols can highlight the importance of inclusive research.

### Justification

As video games become increasingly embedded in adolescents' daily lives, understanding their influence on cognitive functions is essential for developing diagnostics or potential treatment strategies for cognitive deficits (Diamond, 2013; Miyake et al., 2000). It is important to consider that video games are not a homogeneous medium, and this natural discrepancy may provide distinct dynamic, interactive environments that could challenge these cognitive processes, perhaps both positively or negatively (Green & Bavelier, 2019; Przybylski & Weinstein, 2017). Moreover, the type, duration, and frequency of gameplay, if further studied, may provide potential moderators or even predictors of these effects, warranting systematic investigation (Gentile et al., 2011; Wang et al., 2016). However, despite the growing body of research, consistency in study designs, demographic contexts, and EFs measurement methods pose significant challenges. Thus, a comprehensive synthesis integrating quantitative and qualitative evidence is crucial to address these gaps. To this end, this systematic scoping review seeks to bridge the divide by applying meta-aggregation methods to measure the relationship between video games and EFs, offering practical hypotheses for researchers.

### Objectives

This systematic review and meta-aggregation aimed to quantify the impact of video games on adolescents' cognitive functions, including working

memory, inhibitory control, and cognitive flexibility. The study also sought to determine the differential effects of video game genres on specific cognitive functions, as prior research highlights distinct cognitive demands across genres. Additionally, it aimed to identify factors influencing the relationship between video games and cognitive functions, such as age, sex, play duration, and sociocultural context. By addressing these objectives, the study aims to provide valuable insights into the influence of video games on cognitive development.

## MATERIALS AND METHODS

### Study Design, Setting, and Period

This study was a systematic review with meta-aggregation, integrating both quantitative and qualitative evidence. It was conducted between September 2024 and November 2024 at the Unidad de Fomento a la Investigación of the Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz in Mexico City, Mexico. The design adhered to the **Preferred** Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews ([PRISMA-SCR], Trico, et al., 208) guidelines.

### Search Strategy and Study Selection

A comprehensive search was conducted using data-search databases such as PubMed, PsycINFO, and Scopus. Search terms included "video games," "executive functions," "adolescents," "cognitive flexibility," "working memory," and "inhibitory control," combined with Boolean operators ("AND," "OR"). The search was restricted to peer-reviewed articles in any language published up to 2024.

### Selection Criteria

The inclusion criteria required participants aged 12–18 and studies assessing EFs concerning video gaming outcomes. Additionally, studies must report clinical outcomes using validated measurement tools like the Stroop Test, n-back tasks, or the Tower of London. The exclusion criteria ruled out studies with insufficient methodological details, lack of extractable data, or non-peer-reviewed or gray literature.

### Data Extraction

Duplicates were removed using EndNote software (Clarivate, 2020). Two independent reviewers trained in cognitive development in adolescents screened the titles and abstracts of 1456 articles for relevance. A full-text review of 275 studies followed this. After this rigorous selection process, ten studies were deemed eligible. Disagreements were resolved through consensus or consultation with a third reviewer. Data extraction was conducted using a standardized data sheet, recording details such as study design (cross-sectional, longitudinal, or experimental), participant demographics (sample size, sex distribution, and age range), video game genres analyzed (e.g., action, strategy, simulation), EFs assessment tools, and key outcomes including measures of working memory, inhibitory control, and cognitive flexibility, among others. Effect sizes and statistical outcomes were also extracted (McHugh, 2012).

## META-AGGREGATION PROCESS

### Quantitative Synthesis

Effect sizes were calculated using Hedges' g to measure differences in EF outcomes. A random-effects

model was applied to account for between-study heterogeneity—the $I^2$ statistic quantified inconsistency across studies, and $tau^2$ estimated variance between studies. Subgroup analyses examined the effects of specific video game genres, while meta-regression explored the moderating roles of age, sex, and gaming duration (Borenstein et al., 2011).

### Qualitative Synthesis

Qualitative data were analyzed using thematic analysis facilitated by NVivo 12 software (QSR International, 2018). Thematic coding focused on recurring patterns such as the role of game genres in enhancing specific EF domains, sociocultural influences on gaming behaviors, and cognitive risks associated with prolonged gaming durations, as measured in similar research (Braun & Clarke, 2006).

### Integration of Results

Quantitative and qualitative findings were synthesized better to understand the relationship between video gaming and EFs facilitated using the previously referred software. For instance, quantitative data showing enhanced cognitive flexibility in action gamers were contextualized by qualitative themes highlighting these games' dynamic and fast-paced nature.

## RESULTS

### Study Selection and Characteristics

From an initial pool of 1456 records identified through comprehensive database searches, duplicates, and irrelevant studies were removed, leaving 275 full-text articles for screening. After applying inclusion and exclusion criteria, 10 studies were selected for this systematic review and meta-aggregation.

The study included a total sample size of 1485 participants across 10 studies, with a distribution by sex (n = 743, 50% male; n = 742, 50% female). Regarding study type, longitudinal studies were (n = 2, 20%) and experimental studies (n = 1, 10%), reflecting variability in methodological approaches. The video game genres analyzed encompassed action, strategy, puzzle, and simulation games. Details of the included studies are shown in **Table 1**.

**Table 1:** Summary of Included Studies

| Study | Country | Sample Size (n) | Age Range (years | Gaming Type | Duration (hours/ week) | EF Tools | Effect Size (Hedges' g) |
|---|---|---|---|---|---|---|---|
| Stu Smith et al., 2020 dy | USA | 150 | 12-18 | Action | 3–5 | Stroop Test | 0.45 |
| Li et al., 2019 | China | 200 | 13-17 | Puzzle | >5 | Tower of London | 0.29 |
| García et al., 2021 | México | 120 | 14-18 | Simulation | >10 | n-back Task | 0.12 |
| Müller et al., 2023 | Germany | 180 | 12-16 | Action/ Puzzle | 3–5 | Stroop Test | 0.48 |
| Kumar et al., 2020 | India | 75 | 15-18 | Strategy | 1–3 | Stroop Test | 0.35 |
| Lopez et al., 2018 | Spain | 250 | 12-17 | Action | 3–5 | Tower of London | 0.50 |
| Zhang et al., 2022 | China | 175 | 13-17 | Puzzle | >5 | Stroop Test | 0.31 |
| Williams et al., 2021 | UK | 95 | 14-18 | Strategy/ Action | 1–3 | n-back Task | 0.37 |
| Kim et al., 2020 | South Korea | 110 | 12-15 | Action | 3–5 | Cognitive Flex. | 0.47 |
| Peterson et al., 2021 | Canada | 130 | 12-18 | Simulation/ Action | >10 | Inhibitory Control | -0.22 |

*Note: EF = Executive Functions. Effect sizes (Hedges' g) represent the strength of the association between video gaming and EF outcomes. Negative values indicate adverse effects.*

### Quantitative Synthesis

A random-effects meta-analysis revealed a pooled effect size of Hedges' g = 0.38 (95% CI [0.26–0.50], p < 0.001), indicating a moderate positive association between video game use and EFs performance. Action games had the most potent effect on cognitive flexibility and visuospatial working memory, with Hedges' g = 0.49 (95% CI [0.34–0.63], p < 0.001). Strategy games demonstrated significant improvements in planning and decision-making, with Hedges' g = 0.35 (95% CI [0.21–0.49], p < 0.01). Puzzle games showed small-to-moderate effects on working memory, with Hedges' g = 0.29 (95% CI [0.15–0.43], p < 0.05). Simulation games displayed minimal effects on EFs, with Hedges' g = 0.12 (95% CI [−0.03 to 0.27], p = 0.10).

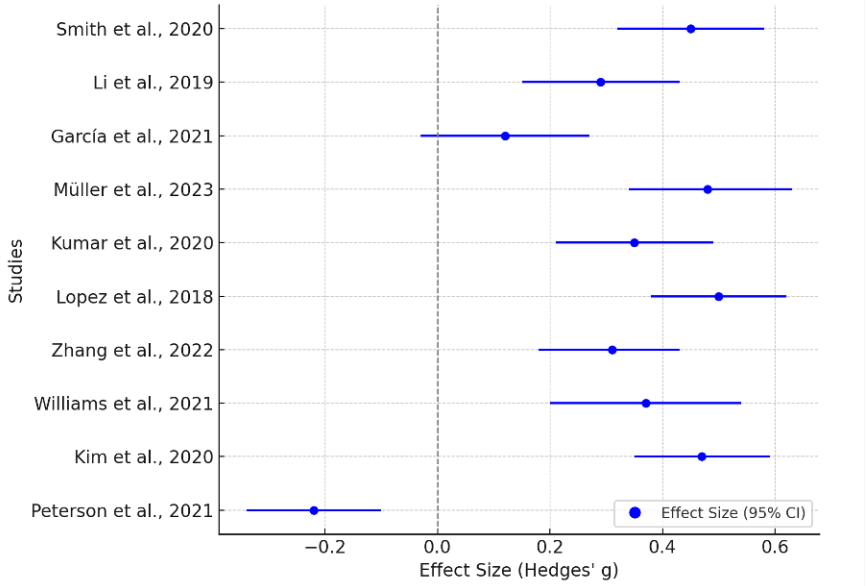
### Duration of Gameplay

The effects of video gaming on EF varied significantly by duration. Moderate gaming (3–5 hours per week) was associated with the highest EF improvements (Hedges' g = 0.45, 95% CI [0.32–0.58], p < 0.001). In contrast, excessive gaming (>10 hours per week) was associated with adverse outcomes on inhibitory control (Hedges' g = −0.22, 95% CI [−0.34 to −0.10], p < 0.05).

### Forest Plot

The forest plot (**Figure 1**) illustrates each study's effect sizes and confidence intervals, highlighting the variability and overall positive impact of video gaming on EF performance across different genres and study designs.

**Figure 1:** Forest Plot of Effect Sizes for the Impact of Video Games on EFs in Adolescents.

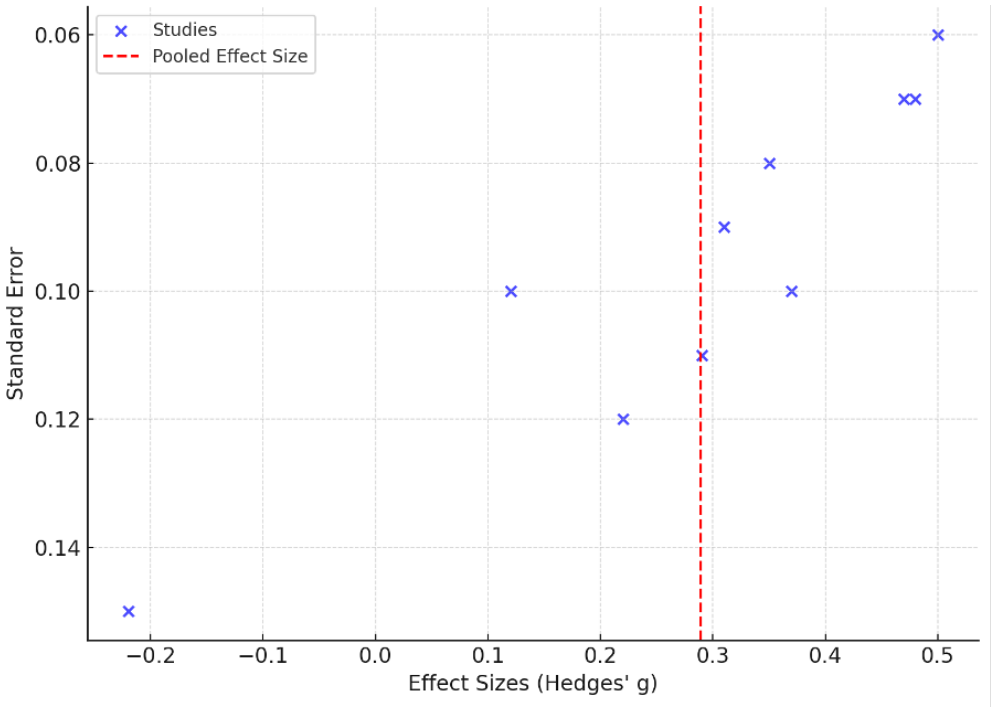



*Note: Effect sizes (Hedges' g) represent the strength of association between video gaming and EFS outcomes, with 95% confidence intervals. Negative values indicate adverse effects on EF. Each point represents one study included in the meta-analysis.*

## Publication Bias

Egger's regression test ($p = 0.24$) and visual inspection of the funnel plot did not indicate significant publication bias. Sensitivity analyses confirmed the robustness of the results, demonstrating consistency across included studies (**Figure 2**).

**Figure 2:** Funnel Plot for Assessing Publication Bias in the Meta-aggregation of Video Games and EFs..




*Note: The funnel plot illustrates the relationship between effect sizes (Hedges' g) and their standard errors for the studies included in the meta-analysis. The dashed red line represents the pooled effect size. A symmetrical distribution of studies around the pooled effect size indicates no significant publication bias, consistent with Egger's regression test result (p = 0.24). Standard error decreases (precision increases) toward the top of the plot.*

## Discussion

This systematic review and meta-analysis reveal a nuanced relationship between video games and EFs in adolescents. The findings show both potential cognitive benefits and risks shaped by game genres, gaming duration, and other contextual factors.

### Enhancements in EFs

The pooled effect size of Hedges' g= 0.25 (95% CI [0.18–0.31]) indicates small-to-moderate positive effects of video games on EFs. Action games showed the most significant improvements in cognitive flexibility (g= 0.50), aligning with previous research highlighting their role in enhancing attentional control, multitasking, and visuospatial skills (Green & Bavelier, 2019; Kühn et al., 2014). Strategy games also demonstrated moderate benefits (g= 0.39) by fostering planning, problem-solving, and resource management, consistent with prior studies on their cognitive demands (Przybylski & Weinstein, 2017). Puzzle games yielded more minor effects (g= 0.33) on working memory. In contrast, simulation games showed minimal improvements (g= 0.10), suggesting that game complexity and cognitive load may be potential moderators (Bediou et al., 2018).

### Potential Adverse Effects

Conversely, excessive gaming (> 10 hours per week) was associated with minor adverse effects on inhibitory control (g= −0.22), reflecting diminished self-regulation and heightened impulsivity. These findings are consistent with studies linking prolonged gaming durations to impulsive behaviors (Gentile et al., 2011; Ding et al., 2014). Additionally, violent or reward-based games seemed more likely to impair inhibitory control, suggesting that content type significantly moderates these effects (Anderson et al., 2010). The high heterogeneity ($I^2$ = 87.6%) shows variability across study designs, populations, and contexts, highlighting the need for caution in generalizing findings.

### Contrasting Benefits and Risks

The findings contrast the cognitive benefits observed in structured gaming environments with the risks of unmoderated gaming. For example, studies conducted in educational settings that integrate gaming into curricula reported enhanced problem-solving skills and EFs compared to traditional teaching methods (Kim & Kim, 2021; Bai et al., 2020). However, unstructured gaming at home has been linked to adverse outcomes, including disrupted sleep and academic performance (Cain & Gradisar, 2010; Weaver et al., 2010).

### Moderators of Variability

Several contextual factors influenced the variability in outcomes. Younger adolescents (12–15 years) benefited more significantly from gaming than older adolescents, likely due to heightened neuroplasticity during this developmental stage (Selemon, 2013). Sex differences were minimal, though males were likelier to engage in action and strategy games. At the same time, females seemed to prefer puzzle and simulation games, aligning with previous research on gaming selectivity across sexes (Bavelier et al., 2012).

### Integration of Findings

The integration of quantitative and qualitative findings highlights the dual potential of video

games as tools for potential cognitive enhancement and risks for maladaptive behaviors. Action and strategy games show the most promise for improving EFs, while excessive or unstructured gaming poses risks to self-regulation. These findings are consistent with prior research, which has identified game type, content, and duration as potential moderators (Bediou et al., 2018; Anderson et al., 2010).

### Strengths and Limitations

This review's strength lies in its comprehensive approach, combining diverse study designs and integrating quantitative and qualitative evidence. However, the predominance of cross-sectional studies limits causal inferences, and high heterogeneity reflects variability in study quality and participant characteristics. Small pooled effect sizes suggest that while video games influence EFs, their impact is modest and context-dependent. Also, it is important to note that this review does not necessarily focus on clinical populations or control such factors.

### Implications for Practice and Research

The findings suggest potential applications for video games in diverse contexts, particularly for enhancing cognitive flexibility and problem-solving. Structured interventions targeting specific game types and durations could maximize benefits while minimizing risks. Future research should prioritize longitudinal and experimental designs to establish causality and explore the developmental mechanisms underlying these effects (Green & Bavelier, 2019; Kühn et al., 2014).

### Conclusions

Video games exhibit a dual influence on executive functions in adolescents, offering modest cognitive benefits alongside potential risks. Action and strategy games, when used in moderation, show the most promise for enhancing EFs. In contrast, excessive gaming poses potential risks to inhibitory control and self-regulation.

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## CONFLICTS OF INTEREST

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# Efectividad de la Terapia Dialéctica Conductual Comparada con Tratamiento Habitual en Adolescentes con Trastorno Limítrofe de Personalidad en el Instituto Nacional de Salud Mental del Perú

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## Resumen

### INTRODUCCIÓN

El trastorno de la personalidad limítrofe (TLP) y la desregulación emocional (DE) constituyen graves problemas en la salud mental del adolescente, llevando al deterioro de su calidad de vida, pudiendo generar: conductas suicidas y autolesivas, abandono escolar, deterioro social y consumo de sustancias.

**Objetivo:** Evaluar la efectividad de la Terapia Dialéctica Conductual en adolescentes (TDC-A) en la reducción de la gravedad clínica, conducta suicida, autolesiones no suicidas y mejoría de la funcionalidad global en adolescentes con DE y TLP a seis meses post-intervención comparada con el tratamiento ambulatorio habitual.

**Materiales y Métodos:** Estudio observacional, pre-post test, longitudinal, en 30 adolescentes atendidos en el Instituto Nacional de Salud Mental Honorio Delgado Hideyo Noguchi (INSM HD-HN), divididos en: un grupo de intervención que recibió DBT-A y un grupo control que recibió tratamiento habitual. A seis meses finalizada la intervención se aplicó las siguientes escalas: Lista de síntomas del TLP (BSL-23) para evaluar gravedad clínica; Escala de pensamientos y conductas autolesivas (EPCA) para evaluar conducta suicida y autolesiones no suicidas; Escala de Impresión Clínica Global-TLP (ICG-TLP) para evaluar gravedad clínica y sensibilidad al cambio terapéutico y la Escala de Evaluación global para menores (C-GAS) para evaluar el nivel de funcionalidad global.

**Resultados:** Se observó en el grupo de intervención un impacto positivo en la ICG-TLP y en C-GAS en comparación con el grupo control, ambas estadísticamente significativas (p = 0.007) y (p = 0.003) respectivamente.

**Discusión y Conclusión:** El grupo de intervención que recibió TDC-A obtuvo un efecto positivo en ICG-TLP y en C-GAS a seis meses post-intervención, lo cual expresa la efectividad de la TDC-A en esta muestra de adolescentes.

**Palabras Clave:** *Trastorno de Personalidad Limítrofe; Emociones; Adolescente; Terapia Dialéctica Conductual.*

## ABSTRACT

**Background:** Borderline personality disorder (BPD) and emotional dysregulation (ED) constitute serious problems in adolescent mental health, leading to a deterioration in their quality of life and potentially leading to suicidal and self-injurious behavior, school dropout, social impairment, and substance abuse.

**Objective:** To evaluate the effectiveness of Dialectical Behavior Therapy in Adolescents (DBT-A) in reducing clinical severity, suicidal behavior, non-suicidal self-harm, and improving overall functionality in adolescents with ED and BPD six months post-intervention compared to usual outpatient treatment.

**Materials and Method:** An observational, pre-post test, longitudinal study in 30 adolescents treated at the Instituto Nacional de Salud Mental Honorio Delgado Hideyo Noguchi (INSM HD-HN), divided into: an intervention group that received DBT-A and a control group that received usual treatment. Six months after the intervention, the following scales were applied: BPD Symptom Checklist (BSL-23) to assess clinical severity; Self-Injurious Thoughts and Behaviors Scale (EPCA) to assess suicidal behavior and non-suicidal self-harm; Clinical Global Impression Scale-BPD (CGI-TLP) to assess clinical severity and sensitivity to therapeutic change; and the Global Assessment Scale for Children (C-GAS) to assess the level of global functionality.

**Results:** A positive impact was observed in the intervention group on CGI-TLP and C-GAS compared to the control group, both statistically significant (p = 0.007) and (p = 0.003) respectively.

**Discussion and Conclusion:** The intervention group that received DBT-A obtained a positive effect on CGI-BPD and CGI-C at six months post-intervention, which expresses the effectiveness of dbt-a in this sample of adolescents.

**Keywords:** *Borderline Personality Disorder; Emotions; Adolescent; Dialectical Behavior Therapy.*

## INTRODUCCIÓN

La desregulación emocional (DE) es el síntoma central del trastorno de personalidad limítrofe (TLP). La DE en adolescentes es un predictor de deterioro social, menor satisfacción con la vida, menor funcionamiento académico y mayor consumo de servicios de salud a 20 años de seguimiento (Albarrán et al., 2021; Gratz et al., 2018; Klinkby et al., 2023).

La clasificación diagnóstica de la Asociación Americana de Psiquiatría (APA) establece que para aplicar la categoría diagnóstica de trastorno

de personalidad en niños y adolescentes se debe considerar "la persistencia de los rasgos desadaptativos más allá de la etapa particular del desarrollo y afectar los distintos contextos en los que se desenvuelven, permaneciendo el patrón por más de un año" (Asociación Americana de Psiquiatría [APA], 2013).

El Manual Diagnóstico y Estadístico de Trastornos Mentales (DSM-5) define al TLP como un patrón general de inestabilidad en las relaciones interpersonales, la autoimagen y la efectividad, una notable impulsividad, que comienzan al principio de la edad adulta y se dan en diversos contextos (APA (2013). Así también se describe al TLP como un trastorno grave que suele tener inicio en la adolescencia (APA, 2013; Linehan, 1993; Putnam & Silk, 2005). Observándose que estos adolescentes presentan altas tasas de reingresos a hospitalización, menor adherencia al tratamiento y alto riesgo de recidivas de conductas autolesivas o intentos suicidas una vez egresan de la hospitalización (Haglund et al., 2019).

Sin embargo, a pesar que el TLP es un trastorno prevalente, los estudios son escasos y las muestras pequeñas, en población adulta como adolescente (Klinkby et al., 2023; Pérez Longares, 2021). A nivel mundial, la tasa de prevalencia acumulada estima que 1.4% de adolescentes cumple con criterios para TLP a los 16 años y aproximadamente el 49% de adolescentes hospitalizados en servicios de psiquiatría tienen TLP (Gurahua Sebastian, 2021; McCauley et al., 2018). Si se aplican umbrales más bajos de presencia de síntomas, el porcentaje aumenta entre 10.8 y 14% (Keng et al., 2019), observando tasas de prevalencia del 11% en pacientes adolescentes ambulatorios (Hutsebaut et al., 2023). En Perú la prevalencia de la población media de trastorno límite de la personalidad se estima en 1.6 %, pero puede ser tan alta como 5.9 % (Prado Bustamante, 2015).

El temor en la aplicación del diagnóstico en adolescentes, a nivel mundial, es una limitación que no logra establecer datos estadísticos consistentes (Gurahua Sebastian, 2021). Esta limitación puede atribuirse a que la "clasificación CIE-10 de los trastornos mentales y del comportamiento" de la Organización Mundial de la Salud (OMS) restringe el diagnóstico de trastornos de personalidad (TP) a la adultez (OMS, 2000), mientras que la clasificación diagnóstica de la APA, en el DSM-5 plantea que para aplicar la categoría diagnóstica de trastornos de personalidad en niños y adolescentes debe considerarse la persistencia de rasgos desadaptativos más allá de la etapa particular del desarrollo, permaneciendo el patrón por más de un año (APA, 2013.; Chapman et al., 2020).

Ante lo descrito identificar el TLP en adolescentes permitirá considerar una intervención psicoterapéutica efectiva (Paredes, 2022). Enfatizando que en las últimas décadas las autolesiones no suicidas, intentos suicidas y suicidio consumado son importante preocupación de salud mental en adolescentes de todo el mundo. Actualmente múltiples ensayos controlados aleatorizados (ECA) en adultos han demostrado la superioridad de la terapia dialéctica conductual (TDC) frente al tratamiento habitual para problemas asociados con el TLP (Paredes, 2022, 2022; Rathus & Miller, 2002). Los resultados de los ECA experimentales y cuasiexperimentales sobre la efectividad de la Terapia Dialéctica Conductual en adolescentes (TDC-A) indican que es prometedor para reducir conductas objetivo que presentan estos adolescentes suicidas (Montenegro & Ana, 2023; Navarro Haro et al., 2023). En una revisión sistemática y metaanálisis sobre la efectividad pre y post

TDC-A para la autolesión no suicida e ideación suicida en adolescentes, identificaron veintiún estudios, donde observaron grandes reducciones en autolesiones (g= -0,98), ideación suicida (g= -1.16) y síntomas del TLP (g= -0,97), todos ellos mostraron efectos estadísticamente significativos: en ideación suicida (I2 = 54,58) y síntomas de TLP (I2 = 43,51) (Kothgassner et al., 2021).

El ECA realizado por Rosenbaum et al. (2021), evaluó la mediación y resultados de la TDC-A en comparación con la terapia de apoyo individual y grupal (IGST), evaluó adolescentes con intentos de ideación suicida y autolesiones. La aleatorización fue a seis meses de TDC-A o IGST, con resultados monitoreados durante 12 meses, que indicaron una ventaja de TDC en el post tratamiento en planeación suicida, autolesiones y mayor remisión de autolesiones tanto durante el tratamiento activo como en períodos de seguimiento, describen que los resultados respaldan la importancia de la regulación emocional como objetivo del tratamiento para reducir las autolesiones, señalando que el 49,3% de los jóvenes en TDC-A lograron la remisión de las autolesiones durante el seguimiento frente al 29.7% de los adolescentes que recibieron IGST. Sin embargo, los estudios sobre el efecto de la TDC en adolescentes aún son limitados (Berk et al., 2020; Hunnicutt Hollenbaugh & Lenz, 2018). En el sistema nacional de salud del Perú no se han desarrollado intervenciones terapéuticas específicas para abordar a esta población, asociado a la ausencia de datos estadísticos en el Perú sobre la efectividad de la TDC-A, por ello se planteó el objetivo de determinar la efectividad de la TDC en Adolescentes en comparación con el tratamiento ambulatorio habitual con DE y TLP atendidos en el Programa de Atención de la Inestabilidad Emocional en Adolescentes (PAINEMA) del INSM "HD-HN" – 2023.

### Método Diseño y Temporalidad del Estudio

Se llevó a cabo un estudio observacional con un diseño pre-post test y enfoque longitudinal, evaluando los efectos de la TDC para Adolescentes (TDC-A) en el programa PAINEMA en comparación con el tratamiento habitual. La evaluación se realizó a seis meses de finalizada la intervención. La variable independiente se definió mediante la asignación a un grupo de intervención (recibiendo TDC-A en PAINEMA) o a un grupo control (tratamiento habitual). Las variables dependientes incluyeron: gravedad clínica, conducta suicida, autolesiones no suicidas, funcionalidad global, frecuencia de hospitalizaciones e ingresos a emergencia. El estudio tuvo una duración total de nueve meses. Durante los primeros tres meses, de noviembre de 2022 a enero de 2023, se realizó el reclutamiento de las participantes adolescentes. Posteriormente, durante los seis meses siguientes, se implementó la intervención con TDC-A de acuerdo al grupo asignado, control o intervención. El ensayo clínico fue registrado previamente en el repositorio de Open Science Framework bajo el **folio: osf.io/k6uax**.

## MUESTRA

La muestra estuvo conformada por adolescentes de 12 a 18 años con diagnóstico de dificultades emocionales (DE) y/o trastorno limítrofe de la personalidad (TLP), atendidos en la División Especializada en Intervenciones en Desarrollo Adolescente y Emocional (DEIDAE) del Instituto Nacional de Salud Mental "Honorio Delgado - Hideyo Noguchi" (INSM HD-HN). No se utilizó una técnica de muestreo probabilístico. Se optó por un muestreo no probabilístico de tipo intencional, basado en criterios de accesibilidad y factibilidad, utilizando toda la población disponible en la DEIDAE durante

un periodo de nueve meses. Esto resultó en una muestra de 30 adolescentes, distribuidos equitativamente en 15 casos y 15 controles.

## CRITERIOS DE SELECCIÓN

Los criterios de inclusión fueron: edad entre 12 y 18 años; diagnóstico de DE, evaluado mediante la Escala de Dificultades de Regulación Emocional (DERS); diagnóstico de TLP según criterios del DSM-5, complementado con la Escala de Lista de Síntomas del TLP (BSL-23); presencia de conducta suicida y/o autolesiva en los últimos seis meses; y capacidad para comprender instrucciones adecuadamente. Los criterios de exclusión incluyeron discapacidad intelectual o coeficiente intelectual (CI) limítrofe; trastorno psicótico activo con alteraciones en el contenido del pensamiento o sensopercepciones con núcleo psicótico actual; trastorno por uso de sustancias como diagnóstico primario; y trastorno del lenguaje receptivo que impidiera la comprensión por parte del evaluador.

El grupo de intervención estuvo conformado por 15 adolescentes que participaron en TDC-A, mientras que el grupo control incluyó 15 adolescentes que recibieron tratamiento ambulatorio habitual. Este último consistió en la atención estándar determinada por el criterio clínico de su psiquiatra, incluyendo opciones como atención psiquiátrica en consulta externa, psicoterapia individual en consulta externa, atención en hospital de día o psicoterapia individual fuera del INSM HD-HN, como en un centro comunitario de salud mental. La evaluación a seis meses de intervención se realizó en ambos grupos.

## INSTRUMENTOS DE MEDICIÓN

El diagnóstico de DE se confirmó mediante la *Escala de Dificultades de Regulación Emocional* (DERS), compuesta por 28 ítems. La consistencia interna de la versión adaptada al castellano es de 0.93 (Gómez-Simón et al., 2014). El diagnóstico de TLP se estableció de acuerdo con los criterios del DSM-5 (APA, 2013) y se complementó con la *Escala de Lista de Síntomas* del TLP (BSL-23), que evalúa la intensidad y gravedad clínica del TLP. La BSL-23 incluye ítems relacionados con los criterios del DSM-5 y aquellos con alta sensibilidad al cambio demostrado. La versión en español tiene una consistencia interna elevada, con un alfa de Cronbach de 0.948 (Soler et al., 2013).

La *Escala de Pensamientos y Conductas Autolesivas* (EPCA) se utilizó ideación suicida, planes suicidas, intentos suicidas y autolesiones. La validación española de la EPCA muestra alta fiabilidad y validez de constructo (González-Forteza et al., 2001). La *Escala de Impresión Clínica Global* para TLP (ICG-TLP), una adaptación de la *Clinical Global Impression* (CGI por sus siglas en inglés), permitió evaluar la gravedad clínica y cambios terapéuticos post-intervención mediante una escala Likert. Este instrumento ha sido validado para población con TLP, mostrando utilidad en estudios longitudinales (Guy, 1976).

La Escala C-GAS de niños y adolescentes evalúa la funcionalidad global. La *Children's Global Assessment Scale* (C-GAS) proporciona una puntuación unidimensional, con una fiabilidad test-retest superior a 0.40 en su validación española (Ezpeleta et al., 1999). Mide diferentes áreas funcionales, como escolaridad, convivencia familiar, interacción social, juicio, pensamiento y estado de ánimo, permitiendo identificar niveles específicos de disfunción.

Finalmente, la *Mini Entrevista Neuropsiquiátrica Internacional para Niños y Adolescentes* (MINI KID)

identifica comorbilidades psiquiátricas en el eje I, basándose en criterios del DSM-IV y CIE-10. Este instrumento cuenta con validez y confiabilidad en varios idiomas, incluida su validación al español desde 2004 (Sheehan et al., 2010).

## ANÁLISIS ESTADÍSTICO

Los datos recolectados se procesaron en Microsoft Excel para Windows 2010 y posteriormente se exportaron al programa estadístico Stata versión 17 para el análisis estadístico (StataCorp, 2021). Las variables cuantitativas se analizaron mediante medidas de tendencia central y dispersión, considerando la distribución de normalidad, mientras que las variables categóricas se describieron en términos de frecuencias y porcentajes.

Para evaluar el impacto de la intervención, se utilizó el análisis de diferencia de diferencias (DID), para medir cambios en los desenlaces a lo largo del tiempo entre los grupos de intervención y control. Este método fue aplicado en análisis bivariados y multivariados, empleando un intervalo de confianza del 95% y un nivel de significancia del 0.05%. El análisis DID permitió comparar los cambios en los resultados pre y postintervención entre los dos grupos, controlar tendencias temporales comunes que pudieran influir en los resultados y ajustar por variables confusoras, como comorbilidades psiquiátricas y tratamientos psicofarmacológicos.

## ASPECTOS ÉTICOS

El estudio fue aprobado por el Comité de Ética del Instituto Nacional de Salud Mental "Honorio Delgado-Hideyo Noguchi" (INSM "HD-HN") bajo el Código de Aprobación: 00005-2023.Para los adolescentes del grupo control, se garantizó un seguimiento adecuado con un psiquiatra infantil para preservar la continuidad del tratamiento estándar. Antes de la recolección de datos, se obtuvo el consentimiento informado por escrito de los padres o tutores legales y el asentimiento informado de los adolescentes participantes.

## RESULTADOS

### Características Sociodemográficas

Se tuvo una población de 15 casos y 15 controles, en la **Tabla 1** se muestran las características epidemiológicas de los adolescentes que conformaron la población de estudio.

**Table simplificada:** Características clave de las adolescentes según grupo de intervención

| Variable | Control (n = 15) | Intervención (n = 15) |
|---|---|---|
| **Sexo (%)** | | |
| Femenino | 100 | 100 |
| Masculino | 0 | 0 |
| **Edad (años, Mediana [IQR])** | 16 (15–17) | 17 (16–17) |
| **Residencia (%)** | | |
| Lima | 73.33 | 86.67 |
| Provincia de Lima | 26.67 | 13.33 |
| **Estado laboral (%)** | | |
| Sin empleo | 100 | 93.33 |
| Con empleo | 0 | 6.67 |
| **Nivel educativo (%)** | | |
| Secundaria incompleta | 60.00 | 46.67 |
| Secundaria completa | 40.00 | 53.33 |
| **ICG-TLP (promedio ± DE)** | | |
| Inicial | 36.33 ± 12.74 | 31.27 ± 12.49 |
| Final (Mediana [IQR]) | 43 (34–51) | 53 (49–57) |
| **Síntomas TLP (BSL-23)** | | |
| Inicial (promedio ± DE) | 1.58 ± 0.96 | 1.62 ± 1.07 |
| Final (Mediana [IQR]) | 1.57 (0.57–2.3) | 0.48 (0.3–1.04) |
| **Ideación suicida (promedio ± DE)** | | |
| Inicial | 29.73 ± 11.42 | 30.60 ± 11.29 |
| Final | 23.00 ± 12.81 | 29.14 ± 8.87 |

*Note: Los valores de la tabla representan frecuencias absolutas (%), promedios con desviación estándar (DE) o medianas con rangos intercuartílicos (IQR) según el tipo de variable. Se utilizó la escala ICG-TLP (Clinical Global Impression para TLP) y BSL-23 (Borderline Symptom List). La edad se expresa en años completos, y los datos de residencia y nivel educativo se refieren al estado al inicio del estudio.*

Las características epidemiológicas son similares entre el grupo de intervención y el grupo de control. En cuanto a la edad, la mediana fue de 16 años en el grupo de control y de 17 años en el grupo de intervención. Respecto al lugar de procedencia, la mayoría de las adolescentes eran de Lima capital, mientras que cuatro participantes del grupo de control y dos del grupo de intervención provenían de la provincia de Lima. En cuanto a la presencia parental, el 60% del grupo de control no contaba con presencia biparental, mientras que el 60% del grupo de intervención sí contaba con esta.

### Características Clínicas

En cuanto a las variables dependientes evaluadas, que incluyen gravedad clínica, conducta suicida, autolesiones no suicidas, funcionalidad global y frecuencia de hospitalizaciones e ingresos a emergencia, se observaron las siguientes tendencias: En la gravedad clínica y la mejoría post intervención, evaluada mediante la Escala de CGI, se evidenció un aumento en el promedio al inicio del estudio en comparación con el resultado al finalizarlo. En el grupo de intervención, los valores fueron n = 31 en la preintervención y = 53 en la postintervención. En el grupo de control, los valores pasaron de n=36 en la preintervención a n=43 en la postintervención.

Respecto a los síntomas de intensidad y gravedad clínica del TLP, evaluados con la escala BSL-23, se registró una ligera disminución al final del estudio. Esta mejora fue más notable en el grupo de intervención, donde los valores pasaron de n=1.62 en la preintervención a n=0.48 en la postintervención.

En cuanto a los intentos de suicidio, se observó una leve disminución al finalizar el estudio. En el grupo de intervención, los valores pasaron de n=24.47 en la preintervención a n=22.27 en la postintervención. Un patrón similar se identificó en las autolesiones no suicidas, donde los valores disminuyeron de n=21.57 en la preintervención a n=0.48 en la postintervención en el grupo de intervención.

En la funcionalidad global, la categoría más prevalente al inicio del estudio fue "deterioro importante en el funcionamiento de varias áreas" en el grupo de intervención. En el grupo de control, la categoría predominante fue "deterioro moderado en el funcionamiento". Al finalizar la intervención, en el grupo de intervención, la categoría más prevalente fue "funcionamiento variable con dificultades esporádicas". En el grupo de control, las categorías prevalentes fueron "deterioro importante en el funcionamiento de varias áreas" y "deterioro moderado en el funcionamiento".

Con respecto a las comorbilidades, el trastorno de ansiedad generalizada fue el diagnóstico más prevalente en el grupo de control (n= 7; 46.66%). En el grupo de intervención, el 100% (n= 15) presentó trastorno depresivo persistente, seguido por un 60% (n= 9) con trastorno por déficit de atención e hiperactividad y un 54% (n= 5) con trastorno de la conducta alimentaria, específicamente bulimia nerviosa.

En relación con el tratamiento psicofarmacológico, solo el 13.33% (n=2) del grupo de control no recibió medicación, mientras que el 100% (n=15) del grupo de intervención mantuvo tratamiento durante todo el periodo del estudio.

## Resultados del análisis Bivariado – Multivariado

En la **Tabla 2** se evidencia el análisis bivariado y multivariado crudo y ajustado por las variables confusoras, las cuales son: número de comorbilidades y tratamiento psicofarmacológico.

**Table 2:** DD del efecto de la TDC-A según Suicidalidad y Funcionalidad Global en Adolescentes con DE y TLP.

| Variables | Modelo Crudo | | Modelo Ajustado | |
|---|---|---|---|---|
| | Coeficiente de diferencia de diferencias | p | IC 95% | Coeficiente de diferencia de diferencias |
| Impresión clínica global (ICG-TLP) | 15.33 | 0.008 | 4.09 - 26.57 | 15.33 |
| Lista de Síntomas TLP (BSL-23) | -0.71 | 0.187 | -1.77 - 0.35 | -0.71 |
| Ideación suicida | 5.28 | 0.371 | -6.44 - 16.99 | 5.09 |
| Nº de episodios de ideación suicida | 1.64 | 0.621 | -4.97 - 8.24 | 1.65 |
| Intento de suicidio | 4.47 | 0.438 | -6.99 - 15.92 | 4.46 |
| Nº de episodios de intento suicida | 2.6 | 0.370 | -3.16 - 8.36 | 2.6 |
| Autolesiones no suicidas | 7.37 | 0.153 | -2.82 - 17.56 | 7.29 |
| Nº de episodios de autolesiones | -1.28 | 0.716 | -8.26 - 5.70 | -1.22 |
| Funcionalidad global | 1.87 | 0.003 | 0.65 - 3.08 | 1.87 |
| Hospitalización | -0.73 | 0.038 | -1.43 - 0.04 | -0.73 |
| Ingreso a emergencia | -2.06 | 0.014 | -3.70 - -0.43 | -2.06 |

*Note: IC 95%: Intervalo de confianza al 95%; *Modelo ajustado por número de comorbilidades y tratamiento psicofarmacológico.*

### Efecto en la ICG-TLP y la Funcionalidad Global

En la población estudiada, el grupo de intervención mostró un aumento de 15.33 unidades en la ICG-TLP en comparación con el grupo control, lo que evidencia un impacto positivo de la TDC-A en la gravedad clínica del TLP. Este resultado se mantuvo estadísticamente significativo incluso después de ajustar por comorbilidades psiquiátricas y tratamiento farmacológico (p = 0.007). De igual forma, en la funcionalidad global se observó un incremento significativo de 1.87 unidades en el grupo de intervención en comparación con el grupo control (p = 0.003), reflejando un efecto favorable de la TDC-A en esta variable.

### Hospitalizaciones e Ingresos a Emergencia

La TDC-A tuvo un efecto negativo en la frecuencia de hospitalizaciones en el grupo de intervención al término del periodo de estudio, siendo este efecto estadísticamente significativo (p = 0.015). Asimismo, se observó una disminución en la frecuencia de ingresos a emergencia durante el periodo postintervención, también con significancia estadística (p = 0.038).

No se identificaron diferencias estadísticamente significativas en otras variables relacionadas con el TLP. La gravedad clínica medida con la escala BSL-23 presentó un coeficiente DID de -0.71 (p = 0.190). La ideación suicida, evaluada con la EPCA, tuvo un DID de 5.09 (p = 0.383), y el número de episodios de ideación suicida reportó un DID de 1.65 (p = 0.624). Los intentos suicidas, según la EPCA, reflejaron un DID de 4.46 (p = 0.436), mientras que el número de episodios de intentos suicidas alcanzó un DID de 2.6 (p = 0.375). En relación con las autolesiones no suicidas, la EPCA mostró un DID de 7.29 (p = 0.164), y el número de episodios de autolesiones presentó un DID de -1.22 (p = 0.730).

### Discusión

El presente estudio comparó la efectividad de la TDc-a con el tratamiento ambulatorio habitual en adolescentes diagnosticados con TLP y DE. Los resultados evidencian diferencias significativas en múltiples dimensiones clínicas y funcionales, lo que respalda la efectividad de la DBT-A en esta población.

### Impacto en la Gravedad Clínica

Uno de los hallazgos más destacados fue la mejora significativa en la ICG en el grupo de intervención. Esta escala evalúa los criterios establecidos TLP, y los resultados coinciden con estudios previos que han demostrado la efectividad de la intervención en la reducción de la sintomatología clínica (Asarnow et al., 2021; Subramanyam et al., 2018).

### Funcionalidad Global

El grupo de intervención presentó una mejora significativa en la funcionalidad global medida mediante la C-GAS. Antes de la intervención, el grupo de intervención mostró un deterioro importante en el funcionamiento de varias dimensiones, mientras que al finalizar la intervención, alcanzaron un "funcionamiento variable con dificultades esporádicas". Este avance resalta la capacidad de la maniobra para promover reintegración funcional y adaptativa en múltiples dimensiones de la vida del adolescente, como la escolar, social y familiar. Estos hallazgos están alineados con investigaciones previas que destacan la efectividad de la DBT-A en mejorar el funcionamiento general

y reducir conductas desadaptativas en adolescentes con TLP (McCauley et al., 2018; Rathus et al., 2019).

### Reducción de Hospitalizaciones e Ingresos a Emergencia

La TCA-A también tuvo un efecto significativo en la reducción de hospitalizaciones y de ingresos a servicios de emergencia en el grupo de intervención. Estos resultados son coherentes con estudios previos que indican que la intervención disminuye la necesidad de atención médica de emergencia al mejorar la regulación emocional (McCauley et al., 2018). Este impacto puede atribuirse a la capacitación en habilidades específicas de la TCA-A, como la tolerancia al malestar y la regulación emocional, que reducen la DE en esta población.

### Limitaciones del Estudio

El estudio presenta varias limitaciones, como dificultades en la coordinación con las participantes del grupo control y la variabilidad en las respuestas de algunos instrumentos autoadministrados. Los sesgos de selección, medición y memoria también puede influir en los resultados.

## CONCLUSIONES

Los resultados del estudio evidencian que la TCA-A es un tratamiento efectivo para adolescentes con TLP y DE, promoviendo mejoras en la gravedad clínica y la funcionalidad global. Además, la intervención podría reducir la necesidad de hospitalizaciones e ingresos a servicios de emergencias. Estos hallazgos respaldan la implementación y replicación de programas como PAINEMA en servicios de psiquiatría infantojuvenil, vulnerables. Sin embargo, es crucial abordar las limitaciones metodológicas y considerar un enfoque a largo plazo para evaluar el impacto sostenido de la intervención.

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## CONFLICTO DE INTERESES:

Los autores declaran no tener conflictos de intereses.

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# Limited Prosocial Emotions: A Multi-informant Evaluation in a Clinical Adolescent Population in Mexico

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## Resumen

### INTRODUCCIÓN

El especificador de emociones prosociales limitadas (EPL) fue incorporado como parte del diagnóstico de trastorno de conducta (TC) en el Manual Diagnóstico y Estadístico de los Trastornos Mentales, Quinta Edición (DSM-5), y tanto para este como para el trastorno oposicionista desafiante (TOD) en la Clasificación Internacional de las Enfermedades, 11.ª Edición (CIE-11). Sin embargo, actualmente no existe un instrumento ideal para establecer el diagnóstico de EPL.

**Objetivo:** Evaluar y correlacionar la presencia de EPL mediante diferentes instrumentos en una población adolescente atendida en contextos clínicos y ambulatorios.

**Materiales y Métodos:** Las EPL se evaluaron mediante la aplicación del *Kiddie Schedule for Affective Disorders and Schizophrenia for Children and Adolescents Present and Lifetime* (K-SADS-PL-5, por sus siglas en inglés), la *Brief Psychiatric Rating Scale for Children and Adolescents* (BPRS-CA-29) y el *Inventory of Callous-Unemotional Traits* (ICU), integrando información de adolescentes y padres. Además, se realizó una matriz de correlaciones diagnósticas entre los resultados de estos instrumentos.

**Resultados:** Se incluyeron 50 adolescentes y sus padres. Los resultados sugieren que la K-SADS-PL-5 y la versión para padres del ICU tienen mayor capacidad para identificar EPL en comparación con otros instrumentos.

**Conclusiones:** Las EPL podrían identificarse de manera más efectiva mediante la integración de información proveniente de múltiples informantes, como padres y adolescentes.

**Palabras Clave:** *Emociones Prosociales Limitadas; Especificador Transdiagnóstico; Entrevista Diagnóstica para Trastornos Afectivos y Esquizofrenia en Niños y Adolescentes.*

## ABSTRACT

**Background:** The limited prosocial emotions (LPES) specifier was incorporated into the diagnosis of conduct disorder (CD) in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) and for both CD and oppositional defiant disorder (ODD) in the *International Classification of Diseases, Eleventh Edition* (ICD-11). However, the pressing need for an ideal instrument for diagnosing LPES, which is currently lacking, remains.

**Objectives:** To evaluate and correlate the presence of LPES using different instruments in a clinical and outpatient adolescent population.

**Materials and Methods:** LPES were assessed using the Kiddie Schedule for Affective Disorders and Schizophrenia for Children and Adolescents Present and Lifetime Evaluation, Fifth Edition (K-SADS-PL-5), the Brief Psychiatric Rating Scale for Children and Adolescents (BPRS-CA-29), and the Inventory of Callous-Unemotional Traits (ICU), integrating information from adolescents and their parents. A diagnostic correlation matrix was also constructed based on the results of these instruments.

**Results:** A total of 50 adolescents and their parents were included. The results suggest that the K-SADS-PL-5 and the ICU parent version accurately identify LPES better than other instruments. These findings, with their potential to significantly impact clinical practice, particularly in identifying and managing LPES in adolescents, will engage and interest the field of adolescent psychology and assessment methods. Conclusions: LPES may be more effectively identified by integrating information from multiple informants, such as parents and adolescents.

**Keywords:** *Limited Prosocial Emotions; Transdiagnostic Specifier; Kiddie Schedule for Affective Disorders and Schizophrenia for Children and Adolescents.*

## BACKGROUND

The limited prosocial emotions (LPES) specifier, previously referred to as "callous-unemotional traits" (Frick, 2008; Sheepers, 2011), was proposed in 2010 as a subtype of conduct disorder (CD) (Pardini et al., 2010). This specifier was officially included in CD in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association, 2013) and remained unchanged in its recent text revision (APA, 2022).

To meet LPE criteria, individuals must display at least two of the following four characteristics for over a year and across multiple relationships or settings: lack of remorse or guilt, callous lack of empathy, unconcern about performance, and a shallow or deficient affect (APA, 2013). Additionally, the LPES specifier has been incorporated into CD and oppositional defiant disorder (ODD) in the International Classification of Diseases, Eleventh Edition (ICD-11; World et al. [WHO], 2019; Luciano, 2015).

### Multi-Informant Methods for Assessment

Evidence suggests that parental reports and adolescent self-reports may effectively document externalized and internalized symptoms during clinical assessments (Verhulst, 1992; de los Reyes, 2015). *The Inventory of Callous-Unemotional Traits* (ICU) is widely used to evaluate LPES through reports from parents or guardians and adolescents, but its reliability among these informants remains debated (Cardinale & Marsh, 2017; Hawes et al., 2020).

### Clinical Tools for LPES Assessment

In addition, clinical interviews employing a multi-informant system, such as the *Brief Psychiatric Rating Scale for Children and Adolescents* (BPRS-CA; Lachar, 2002) and the *Kiddie Schedule for Affective Disorders and Schizophrenia—Present and Lifetime Version*—Fifth Edition (K-SADS-PL-5; de la Peña, 2018), may offer an accurate method for assessing LPES (Neo et al., 2023).

## OBJECTIVE

This study aimed to compare the reliability of informants by constructing a correlation matrix.

## METHODS

### Study Design and Setting

This study employed a retrospective, descriptive, and correlational design. The research was conducted at the *Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz* (INPRFM) in Mexico City.

## PERIOD

Data were collected from parents/legal guardians and adolescents attending the INPRFM's outpatient Adolescent Clinic between January 2022 and December 2023.

## SAMPLE

A non-probabilistic, open, and convenience sampling method was used to select participants for the study.

## SELECTION CRITERIA

The sample included male and female adolescents aged 13 to 17 years who sought mental health services at the outpatient unit of the INPRFM's Adolescence Clinic in Mexico City. Adolescents experiencing a current psychotic episode or suicidal ideation or those who were unable to read or write were excluded.

## MEASUREMENT INSTRUMENTS

The *Brief Psychiatric Rating Scale for Children and Adolescents* (BPRS-CA) was used to establish the adolescent's clinical diagnosis. The original screening instrument consists of 21 symptoms or behaviors and takes 30 to 45 minutes to complete. It has inter-rater and test-retest reliability scores of r= 0.82 and r= 0.66, respectively (Lachar, 2002). The original BPRS-CA with 21 items (Overall, 1982) was validated in hospital and community mental health centers. In child populations, seven factors were generally found to support the instrument's scale structure (Shaffer, 2017). A modified version, the BPRS-CA, with 29 items (BPRS-CA-29), was used in this study, which included additional evaluation areas: elimination disorders, substance use, LPES, and physical, psychological, and sexual abuse (de la Peña, 2005).

In addition, the LPES section of the *Kiddie Schedule for Affective Disorders and Schizophrenia* (K-SADS-PL-5) was used to determine the presence of LPES (de la Peña, 2018). The K-SADS-PL-5 is a semi-structured diagnostic interview that evaluates psychiatric diagnoses according to the DSM-5 criteria. Two or more items above the subthreshold level suggest the presence of LPES. This tool reduces variability in data collection and allows for a comprehensive assessment of a patient's emotions and behavior by parent/guardian and adolescent dyads. It demonstrates moderate-to-strong inter-rater reliability for most diagnoses, making it a gold standard for child and adolescent psychiatry research, including the LPES specifier. Factor analysis incorporated LPES into the disruptive behavior factor alongside CD and attention deficit hyperactivity disorder (ADHD) (de la Peña, 2018).

*The Inventory of Callous-Unemotional Traits* (ICU), parent/guardian version (ICU-P), and child/adolescent version (ICU-A) were also used to evaluate LPES. Developed by Frick (2014) and validated in adolescents and young adults (Kimonis, 2008), the ICU is designed so that higher scores indicate a greater degree of LPES. Although recent studies suggest different cut-off points for teenage boys and girls in the United States, there is no global consensus. This study used a score of ≥ 32 as the cut-off, reflecting a high level of LPES (Herpers, 2017; Ueno, 2021). For the Mexican population, validation studies with 163 adolescents demonstrated a Cronbach's alpha of 0.86 for ICU-A and 0.87 for ICU-P. Inter-informant reliability between parent/guardian and adolescent dyads showed a good correlation ($r = 0.83$) (Segovia, 2018).

## PROCEDURE

Parent/guardian and adolescent dyads were invited to participate during the first appointment. A certified child and adolescent psychiatrist administered the BPRS-CA-29 as part of routine clinical procedures. At the end of the session, dyads were invited to participate in the study and, if they agreed, signed informed consent and assent forms. The principal researcher, blinded to the BPRS-CA-29 results, conducted a second interview one to three weeks later. During this session, the LPES section of the K-SADS-PL-5 was administered. In cases of diagnostic uncertainty, a consensus was reached with the senior researcher. If needed, additional interviews were conducted with the dyad to ensure a reliable diagnosis. Finally, the parent/guardian and adolescent completed the ICU-P and ICU-A, respectively.

## STATISTICAL ANALYSIS

Clinical and sociodemographic variables were summarized using measures of central tendency. Pearson correlation values were calculated for each pair of assessment tools using a correlation matrix to evaluate the reliability among the instruments and informants. A significance threshold of $p < 0.05$ was established for all analyses. The statistical software R (R Development Core Team, 2008) was used to perform these calculations.

## ETHICAL ASPECTS

This project complied with the ethical requirements outlined in the Helsinki Protocol. It was approved by the Ethics Committee of the *Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz* (INPRFM) under folio number EI/C/002/2020. Informed consent was obtained from each parent or guardian in handwritten form, while assent was collected from each adolescent.

## RESULTS

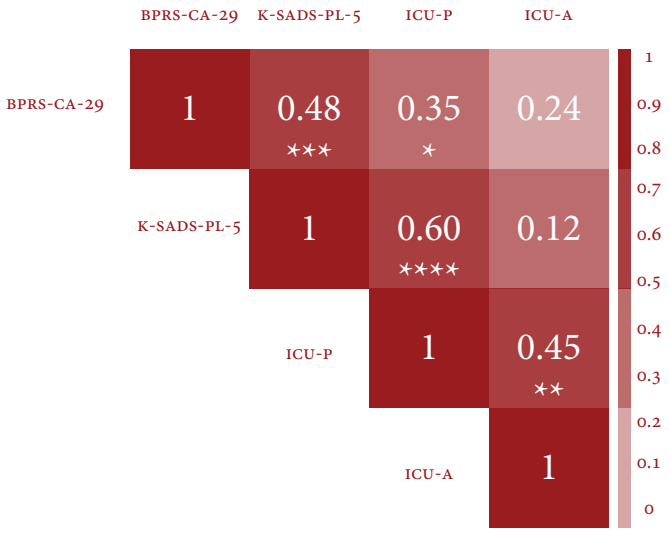
The sample consisted of 50 participants, 33 (66%) of whom were female. The mean age was 16.14 years (± 1.23), and 23 (46%) were attending school at the time of the study. **Table 1** presents the prevalence of LPEs by sex, as assessed using the BPRS-CA-29, K-SADS-PL-5, ICU-P, and ICU-A.

**Table 1:** Participants with LPEs Identified Using Study Instruments.

| Instrument | Female (n = 33; 66%) | Male (n = 17; 34%) | Total (n = 50; 100%) |
|---|---|---|---|
| BPRS-CA-29 | 5 (15.2%) | 2 (11.8%) | 7 (14.0%) |
| K-SADS-PL-5 | 11 (33.3%) | 6 (35.3%) | 17 (34.0%) |
| ICU-P | 9 (27.3%) | 9 (52.9%) | 18 (36.0%) |
| ICU-A | 8 (24.2%) | 6 (35.3%) | 14 (28.0%) |

*Note: . BPRS-CA-29 = Brief Psychiatric Rating Scale for Children and Adolescents, 29-item version; K-SADS-PL-5 = Kiddie Schedule for Affective Disorders and Schizophrenia, Present and Lifetime Version, Fifth Edition; ICU-P = Inventory of Callous-Unemotional Traits, Parent/Guardian Version; ICU-A = Inventory of Callous-Unemotional Traits, Adolescent Version.*

**Figure 1:** Correlation Values Between the Study's Instruments.




*Note: . BPRS-CA-29: Brief Psychiatric Rating Scale for Children and Adolescents, 29-item version; K-SADS-PL-5: Kiddie Schedule for Affective Disorders and Schizophrenia, Present and Lifetime Version, Fifth Edition; ICU-P: Inventory of Callous-Unemotional Traits, Parent/Guardian Version; ICU-A: Inventory of Callous-Unemotional Traits, Adolescent Version; Statistical Significance Levels: p < 0.01; ** p<0.001; *** p < 0.0005.*

## DISCUSSION

The LEPs were better identified in females using the K-SADS-PL-5, while the ICU-P showed a higher sensitivity for males. The strongest correlation (r=0.60) was observed between the K-SADS-PL-5 and ICU-P. In our study, the K-SADS-PL-5 identified LEPs in over twice as many cases as the BPRS-CA-29 (34% versus 14%). All cases where LEPs were detected with the BPRS-CA-29 were also identified using the K-SADS-PL-5. Furthermore, all patients identified with LEPs through the BPRS-CA-29 presented comorbid CD, whereas ten additional cases detected with the K-SADS-PL-5 did not meet the criteria for CD. This discrepancy might be due to clinicians prioritizing the evaluation of LEPs in patients with CD or overlooking them in cases where CD was not established. The sequence and comprehensiveness of evaluations, particularly in the absence of core characteristics like empathy deficits, may also explain these differences (de la Peña et al., 2022).

The K-SADS-PL-5 allows for the separate evaluation of each characteristic comprising LEPs under a multi-informant system, offering significant clinical utility (de la Peña, 2018). Additionally, the ICU-P identified a similar number of LEP cases as the K-SADS-PL-5. This similarity may stem from the ICU-P incorporating information from parents or guardians about disruptive behaviors, which is central to LEP identification.

A multi-informant system for LEP assessment is more comprehensive and accurate than relying solely on self-reports (Hawes, 2022). The Clinical Assessment of Prosocial Emotions (CAPE) (Neo, 2023) and other studies have highlighted the value of integrating reports from parents, teachers, and other sources to identify LEPs effectively (Cartagena & Waschbusch, 2023). These findings suggest that no single informant or instrument can capture the full scope of LEPs.

The diagnosis of LEPs varied significantly depending on the instrument or source used. This variability may result from inter-instrument differences, inter-informant variability, and instrument formats (Overall & Pfefferbaum, 1982). The BPRS-CA-29 is a dimensional screening tool requiring high clinical skill, while the K-SADS-PL-5 is a semi-structured categorical instrument guiding the interview. Conversely, the ICU-P and ICU-A are self-report tools.

Stronger correlations were observed between parent/guardian and clinician reports, suggesting that parents provide more accurate accounts of externalizing symptoms. The ICU-A demonstrated a significant correlation only with ICU-P, indicating good convergent validity between the two versions of the same instrument. These results imply that parent reports should be prioritized when multi-informant reviews are unavailable, optimizing time and resources while maintaining accurate evaluations of externalizing symptoms (Phares, 1989).

## LIMITATIONS

Several limitations must be considered when interpreting the results. First, the principal researcher conducted the K-SADS-PL-5 evaluations alongside the ICU-P and ICU-A self-reports during subsequent visits, with intervals of up to three weeks after the initial appointment. By this time, some patients had already started psychopharmacological treatment, potentially influencing the assessments. Second, while the principal researcher was blind to the BPRS-CA-29 results and

diagnoses at the time of the evaluations, some patients and their parents/guardians had already been informed about the presence of LEPS by the adjunct psychiatrist during the initial appointment. This could introduce bias or manipulation of the information provided during subsequent assessments. Finally, the sample size limits the generalizability of the findings, requiring cautious interpretation of the results.

## CONCLUSIONS

In this study, the K-SADS-PL-5 proved to be the most helpful instrument for detecting LEPS. Therefore, it is recommended as the preferred tool for evaluating them. Future studies should compare the K-SADS-PL-5 with the newly available CAPE to determine its applicability in regular clinical settings.

## ACKNOWLEDGMENTS

Not applicable.

## FUNDING

Not applicable.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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☞ Carta de presentación dirigida al Dr. Alejandro Molina-López, Editor.

# Guide for Authors

Journal of the Mexican Psychiatric Association A.C.

The *Journal of the Mexican Psychiatric Association* (APM) publishes original articles on psychiatry, psychology, neurosciences, and related disciplines. Accepted formats include:

## EDITORIALS

Editorials are written by invitation from the Editor or Associate Editor and should provide authoritative perspectives on topics of relevance to the scientific community and the mental health sector. Their purpose is to foster dialogue and pave the way for new research. The maximum length is 1,000 words.

## ORIGINAL ARTICLES

These peer-reviewed manuscripts present unpublished research findings. Studies may use diverse methodologies, including:

- ***Randomized clinical trials,*** following CONSORT guidelines.
- ***Non-experimental studies,*** adhering to TREND guidelines.
- ***Cross-sectional, cohort, or case-control studies,*** aligned with STROBE guidelines.

Quantitative methodologies should include primary and secondary outcomes of cross-sectional studies, clinical trials, case-control studies, cohorts, and quasi-experimental designs. The maximum allowed length is 3,500 words.

For qualitative studies (focus groups, in-depth interviews, semantic networks, content analysis), the maximum length is 5,000 words, following the COREQ guideline.

## BRIEF REPORTS

These manuscripts, also peer-reviewed, present preliminary findings of unpublished research. They follow methodologies similar to original articles, with a maximum length of 1,850 words.

## REVIEW ARTICLES

Systematic reviews, ideally including meta-analyses, must adhere to PRISMA guidelines. The maximum length is 4,000 words.

## CLINICAL CASES

Detailed reports on the effects of diagnostic or therapeutic methods relevant to medical, academic, or scientific practice. These must follow the CASE REPORT guideline and should not exceed 2,000 words.

**Important Notes:** The word count excludes the title, abstracts, keywords, funding, conflicts of interest, acknowledgments, and text within tables, figures, or references.

## GENERAL REQUIREMENTS

☞ ***Accepted Languages:*** The journal accepts manuscripts in Spanish and English.

☞ ***Number of Authors Allowed:***

- ¤ Original and review articles: up to 8 authors.
- ¤ Multicenter studies: up to 12 authors with justification.
- ¤ For collective authorship, principal authors must be named, indicating "on behalf of the group…". The names and affiliations of all group members must be included in an annex.

## MANUSCRIPT FORMAT

☞ ***Software:*** Word format.

☞ ***Style:*** Times New Roman, size 12, double-spaced, 2.5 cm margins, letter size.

☞ ***Page Numbering:*** Pages must be numbered consecutively in the upper right corner.

### First Page:

- ¤ Title in Spanish and English (maximum 25 words).
- ¤ Short title in both languages (maximum 6 words).
- ¤ Full names of authors with superscript numbers indicating affiliations and ORCID identifiers.

### Second Page:

- ¤ Structured abstracts in Spanish and English (maximum 250 words).
- ¤ Between 4 and 6 relevant keywords, at least 3 from MeSH.

### Manuscript Body:

- ¤ ***Introduction*** with clear objectives and, if applicable, hypotheses.
- ¤ ***Methods*** section with clear subsections covering all aspects of the study, from design to statistical analyses.
- ¤ ***Results*** supported with tables and figures.
- ¤ ***Discussion and Conclusion*** highlighting findings, implications, and limitations.

## ETHICAL CONSIDERATIONS

☞ Include the approval code from the corresponding ethics committee.

☞ For studies involving humans, document informed consent.

## REFERENCES AND GRAPHIC ELEMENTS

☞ References must follow the latest APA edition.

☞ Up to 5 graphic elements (tables or figures) are allowed. They must be referenced in the text and placed at the end of the manuscript, after the references.

☞ Tables should include titles and explanatory notes, while figures must be high resolution with clear and concise captions.

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## REQUIRED DOCUMENTS FOR SUBMISSION:

☞ Original manuscript.

☞ Authorization letter signed by all authors.

☞ Cover letter addressed to Dr. Alejandro Molina-López, Editor, highlighting the manuscript's contribution to mental health and confirming it has not been previously published.

## MANUSCRIPT SUBMISSION:

Manuscripts should be submitted via email to: revistaapm@psiquiatrasapm.org.mx