

Caught in the crossfire: Ecuador's safety crisis impact on teen and young adult mental health




Atrapados en el fuego cruzado: el impacto de la crisis de seguridad de Ecuador en la salud mental de adolescentes y adultos jóvenes

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Abstract

Introduction: During the past decade, Ecuador has become one of the most dangerous countries in Latin America, with a significant rise in violence impacting mental health. This study investigates hospital admissions for mood disorders among adolescents and young adults in Ecuador from 2021 to 2022. **Methods:** We used public access data from the National Institute of Census and Statistics (INEC) to analyze hospital admissions for mood disorders in individuals aged 12 to 21, categorized using the International Classification of Diseases (ICD-10) codes F30 to F39. **Results:** Results show a female predominance in admissions, with a female-to-male ratio of 3:1 by 2022. Admissions for depressive episodes accounted for 66.5% of cases, peaking in 2022. The regions with the highest admission rates were the Galapagos Islands and Pichincha. A notable reduction in admissions was observed in 2020, likely due to the COVID-19 pandemic's impact on healthcare access. **Discussion:** The study's findings highlight significant gender disparities, diagnostic trends and regional differences in mood disorder admissions. The increasing trend, particularly for depressive episodes, underscores the need for enhanced mental health resources. **Conclusion:** The study concludes that the escalation of violence in Ecuador significantly impacts mental health, emphasizing the urgency of addressing social determinants of health and focussing efforts on regions most affected by conflict.

Keywords: mental health, adolescent medicine, violence, mood disorders, global health

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Resumen

Introducción: Durante la última década, Ecuador se ha convertido en uno de los países más peligrosos de América Latina, con un aumento significativo de la violencia que ha impactado la salud mental. Este estudio investiga las admisiones hospitalarias por trastornos del estado de ánimo entre adolescentes y jóvenes adultos en Ecuador desde 2012 hasta 2022. **Métodos:** Utilizamos datos de acceso público del Instituto Nacional de Estadística y Censos (INEC) para analizar las admisiones hospitalarias por trastornos del estado de ánimo en individuos de 12 a 21 años, categorizadas utilizando los códigos de la Clasificación Internacional de Enfermedades (CIE-10) F30 a F39. **Resultados:** Los resultados muestran una predominancia femenina en las admisiones, con una proporción de 3:1 entre mujeres y hombres para 2022. Las admisiones por episodios depresivos representaron el 66.5% de los casos, alcanzando un pico en 2022. Las regiones con las tasas de admisión más altas fueron las Islas Galápagos y Pichincha. Se observó una reducción notable en las admisiones en 2020, probablemente debido al impacto de la pandemia de COVID-19 en el acceso a la atención médica. **Discusión:** Los hallazgos del estudio destacan disparidades de género significativas, tendencias diagnósticas y diferencias regionales en las admisiones por trastornos del estado de ánimo. La tendencia creciente, particularmente para los episodios depresivos, subraya la necesidad de recursos mejorados para la salud mental. **Conclusión:** El estudio concluye que el aumento de violencia en Ecuador impacta significativamente la salud mental, enfatizando la urgencia de abordar los determinantes sociales de la salud y enfocar los esfuerzos en las regiones más afectadas por el conflicto.

Palabras clave: salud mental, medicina adolescente, violencia, trastornos del estado de ánimo, salud global.

Introduction

During the past decade, Ecuador has become one of the most dangerous countries in Latin America, with alarming statistics showing 40 homicides per 100,000 people. Attributed to multiple factors including the earthquake that hit the coastal region in 2016, presence of drug cartels in multiple cities, the proliferation of drug trafficking routes, and failed prison model. Mood disorders encompass a range of conditions, with major depressive disorder and bipolar disorder being among the most prevalent in teenagers and young adults. Violent environments have detrimental effects on adolescent development, wellbeing and life opportunities, and mental health. This study describes the impact of violent experiences and exposure to community violence during adolescence and early adulthood on hospital admissions for mood disorders in Ecuador over the past decade.

Methods

For this study, public access data from the INEC from 2012 to 2022 was examined, focusing on hospital admissions for mood disorders in individuals aged 12 to 21 years old¹. The age of 12 marks the recommended starting point for depression screening according to guidelines of the American Aca-

demy of Pediatrics (AAP), and the adolescent years are considered more appropriate for correctly identifying bipolar disorders. Mood disorders were categorized based on ICD-10 codes F30 to F39.

Results

We examined hospital admissions for mood disorders in teenagers and young adults from 2012 to 2022, considering sex, diagnosis, region, and year. Patients were included regardless of their ethnicity or country of origin.

Our data suggest a clear female predominance for admissions across all years, with a female-to-male ratio of 3:1 by 2022. The number of admissions remained stable until 2016 and then showed an increasing trend towards 2022. We found that 66.5% of all hospital admissions (4080 out of 6129) were due to a depressive episode, with the highest rate in 2022 (2.41 per 10.000 inhabitants). Less than 1% of patients were diagnosed with a manic episode (50 out of 6129). Throughout the studied period, the regions with the highest admission rates were the Galapagos Islands (8.69 per 10.000 inhabitants) and Pichincha (8.32 per 10.000 inhabitants), which includes the capital city and is

the second most populated province. A disruption in the increment pattern was observed in 2020, with a 40.5% reduction in admissions from 2019 (N=809) to 2020 (N=481).

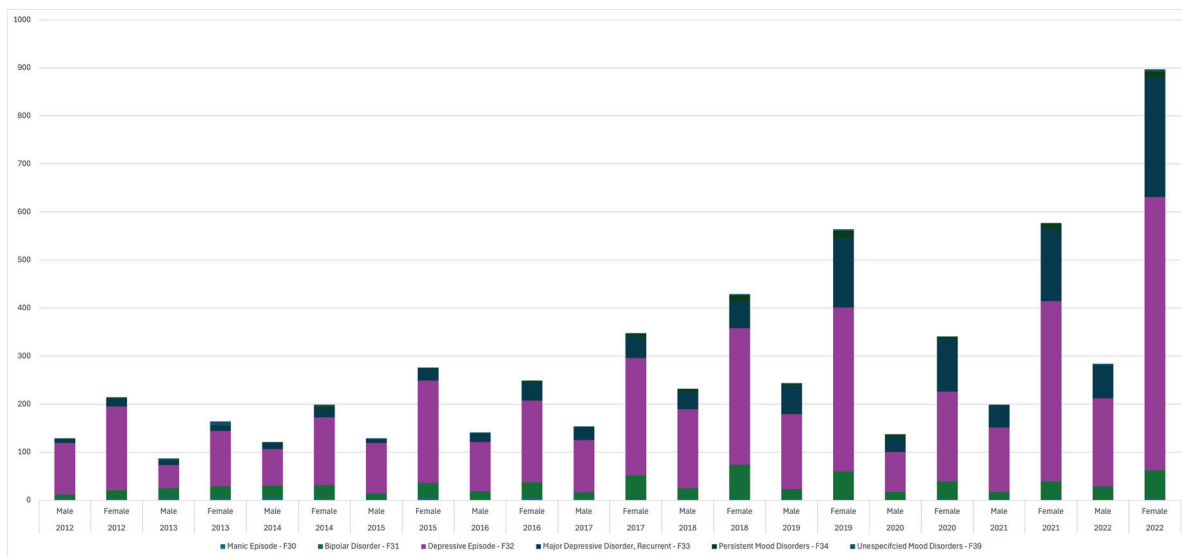


Figure 1. Hospital Admissions for Mood Disorders in Teenagers and Young Adults by Gender (2012-2022). The data shown in the above graph provides insight on the changes in hospital admissions for mood disorders across the studied period categorized by gender.

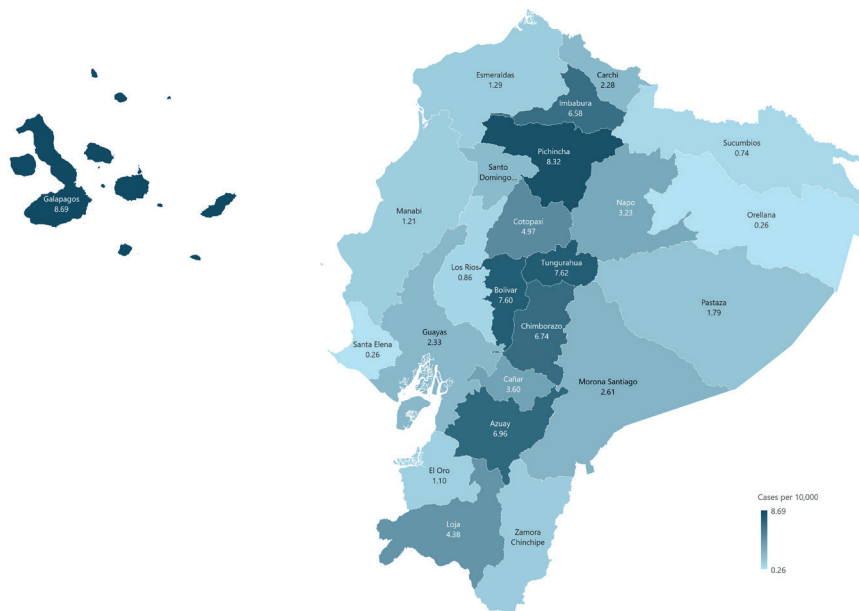


Figure 2. Hospital Admissions for Mood Disorders in Teenagers and Young Adults by Region in 2022. The information shown in the above graph highlights the rate of hospital admissions in general mood disorders as cases per 10.000 habitants in 2022.

Discussion

In this study, we describe the trends in hospital admissions for mood disorders among teenagers and young adults in Ecuador from 2012 to 2022, considering sex, diagnosis, region, and year.

After analyzing the available data, we observed a significant shift in the demographic and diagnostic landscape of mood disorder admissions over the considered decade. There was a pronounced female predominance for all mood disorder diagnoses with a female-to-male ratio as high as 3:1 by 2022. This finding is consistent with existing literature and has been well described, which shows a higher prevalence of mood disorders among females, likely due to a combination of biological, psychological, and sociocultural factors². The trend in admission numbers remained stable until 2016, followed by an increase toward 2022. Consistent with the rise in violence nationwide and other escalating societal stressors.

Depressive episodes constituted the majority of admissions, accounting for 66.5% (4080 out of 6129) of the total cases. The situation reached a critical peak in 2022, with the highest recorded rate of 2.41 per 10,000 inhabitants. Several factors can contribute to this alarming trend. A significant contributing factor is the economy, research shows that common mental disorders, like depression and anxiety, are more prevalent among economically disadvantaged groups³. This means that as financial stress increases, so does the likelihood of experiencing mental health issues. In Ecuador, during the COVID-19 pandemic, the economy suffered greatly with the economic and mobility restrictions implemented to stop the virus from spreading. While the unemployment rate in Ecuador averaged 4.7% in the decade leading up to 2022, which is lower than 8.2% average for Latin America, economic problems are still a big challenge^{2,3}. Another contributing factor that is also closely linked to the economy is armed conflict³.

Regions experiencing armed conflict usually face high levels of stress, trauma and insecurity, which can increase the risk of mental health disorders such as depression. Political violence and armed conflict have been recognized as precipitators of mood disorders in the general population, with children and adolescents being more vulnerable in low-income countries, where the prevalence of depression ranges between 21 to 80%⁵. The impact extends beyond individuals to encompass communities and social institutions, leading to breakdown of families and social networks. In Ecuador's context, localized armed conflicts related to drug trafficking and incidents involving armed groups have been reported. These violent situations contribute to the overall stress and insecurity experienced by communities⁶. Benjet et al.⁷ found strong associations between neighborhood-level violence and individual mental disorders in a large sample of young adults in urban locations across Latin America, including cities from Argentina, Brazil, Colombia, Mexico and Peru; a scenario similar to that in Ecuador. Although depression can have several causes, armed conflict and economic instability can be considered predominant contributors. Adolescents and young adults carry the burden of violence with them even after migrating to a safer environment, and the stress associated with migration adds up to their previous negative experiences⁸.

In contrast, manic episodes comprised less than 1% of admissions (50 out of 6.129). This could be due to the fact that bipolar disorder is relatively uncommon in children and teenagers and the diagnosis is challenging because some of the diagnostic criteria overlap with those of other disorders, or patients may fulfill criteria for more than one disorder^{9,10}. Recognition of disruptive symptoms is especially difficult as insight is diminished in younger patients, and they often blame others for what happens in their lives^{9,11}. The diagnosis of mania is usually historical, as many patients are not expe-

riencing an acute episode at the time they are being evaluated, and parents may exaggerate or minimize the symptoms.

When analyzed by region, the Galapagos Islands and Pichincha had the highest rates of hospital admissions for mood disorders, at 8.69 and 8.32 per 10,000 inhabitants, respectively. The population sizes of these regions significantly differ. The elevated rates in these regions could be caused by the increasing dangers related to drug trafficking and consumption affecting the entire nation¹², as well as those specific to each region, including population density, accessibility to mental health services, and regional stressors.

The Galapagos Islands, despite their lower population density, face unique environmental and social challenges that differ from those in rural mainland communities, contributing to the rising mood disorder rates reported in this study¹³. Higher stress levels experienced by the islander population are related to economic pressure, limitations in food and water resources, and geographic isolation, this widely influences households and translates in rising admissions for mood disorders in the young population¹⁴. A small study by Jahnke et al.¹⁵ demonstrated augmented rates of stress and depression among young women in the Galapagos, primarily associated with abuse and violent environments. As a consequence, there is a dual burden context in which these factors can lead to overnutrition/undernutrition, infectious diseases, and increasing maternal distress that has been shown to further worsen mental health when compared to the continent population^{13,16}.

A notable disruption in the trend of increasing admissions for mood disorders was observed in 2020, with a 40.5% reduction from the previous year (from 809 admissions in 2019 to 481 admissions in 2020). Contrary to our findings, multiple authors reported that during the pandemic, mental health and psychiatric disorders spiked in the general

and pediatric population¹⁷⁻¹⁹. The apparent decrease in hospital admissions reported in Ecuador is probably due to healthcare services focusing mainly on fighting the COVID-19 pandemic, which may have led to reduced access to mental health services. Several factors affected the availability of healthcare services, especially in developing countries where resources were scarce, and lockdowns made it challenging for patients to attend to hospitals or primary care services for mental health-related problems^{18,20}.

Addressing mental health in the adolescent and young adult population remains challenging and requires comprehensive public health policies for immediate action. Acknowledging the existence of the problem is the first step towards identifying its causes and eventually establishing solutions. The most conflict-affected regions should be prioritized, with mental health services provided alongside measures towards ensuring safety. The study provides a detailed overview of hospital admissions for mood disorders among teenagers and young adults in Ecuador over a decade, revealing significant gender disparities, diagnostic trends, and regional differences. The increasing trend in admissions, particularly for depressive episodes, calls for enhanced mental health resources and directed interventions.

Conclusion

Violent environments have a well-documented devastating impact on mental health. This study sheds light on the significant increment on hospital admissions for mood disorders for teenagers and young adults, mirroring the escalation of internal conflict. The findings highlight the urgent need for intervention to address social determinants of health, particularly by focusing efforts on regions most affected by conflict.

Conflictos de Interés

Los autores declaramos no tener ningún conflicto de interés personal, financiero, in-

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Contribución de los autores

VA: Concepción y diseño del trabajo.

GC: Recolección de datos y obtención de resultados.

M-M K: Análisis e interpretación de datos.

VA, GC, MM-K: Redacción del manuscrito.

MM-K: Revisión crítica del manuscrito.

MM-K: Aprobación de su versión final.

MM-K: Aporte de pacientes o material de estudio.

VA: Obtención de financiamiento.

VA: Asesoría estadística.

VA: Asesoría técnica o administrativa.

Aspectos éticos

Este trabajo de investigación fue desarrollado, con carácter observacional con datos anonimizados y cumpliendo con el carácter de confidencialidad y de privacidad de la información individual de los sujetos en investigación, se puede considerar una investigación sin riesgos. En los casos de investigaciones sin riesgo, estas pueden considerarse como exentas de evaluación y aprobación por parte de un Comité de Ética de Investigación en Seres Humanos (CEISH).

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