# Sociodemographic of Patients with Mood Disorders 2012-2021, Córdoba, Colombia

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### DOI: 10.22517/25395203.25470

### **Abstract**

**Objective**: To characterize sociodemographic characteristics of patients suffering from mood disorders in a mental health institution in Monteria, department of Cordoba, Colombia, correlating this diagnosis with variables of interest.

**Materials and Methods**: descriptive, retrospective-longitudinal study, which correlated sociodemographic variables with mood disorders in 729 patients hospitalized in an IPS, from municipalities of the department of Córdoba, in the period 2012- 2021-I.

**Results**: Men with an average age of 23 years presented a higher frequency of mood disorders n=689 than women n= 40; mostly from municipalities such as Monteria, Puerto Libertador, Valencia, Tierralta and Canalete; Monteria being the municipality with the largest population and lowest prevalence; factors such as place of origin, lack of family support and stress were those that influenced relapses, registering a decrease in hospitalization of these patients during the COVID-19 pandemic.

**Conclusion**: There is a correlation between sociodemographic variables such as place of origin in the department of Córdoba, lack of family support

and stress as determinants for the occurrence of the diagnosis of mood disorders in patients coming from municipalities characterized by high and medium levels of violence, low educational coverage and multifunctional poverty in vulnerable population.

**Keywords**: Mood Disorders, Violence, Emotions, Vulnerable Populations, Patients.

### Resumen

Objetivo: caracterizar sociodemográficamente pacientes que padecen trastornos del estado de ánimo en Institución Prestadora de Servicios (IPS) de salud mental en Montería, departamento de Córdoba - Colombia, correlacionando este diagnóstico con variables de interés.

**Materiales y métodos:** estudio descriptivo, retrospectivo-longitudinal, que correlacionó variables sociodemográficas con trastornos del estado de ánimo en 729 pacientes hospitalizados en una IPS, procedentes de municipios del departamento de Córdoba, en el período 2012- 2021-l.

**Resultados:** hombres con edad promedio de 23 años presentaron mayor frecuencia de trastornos del estado de ánimo n=689 que mujeres n= 40; en su mayoría procedentes de municipios como Montería, Puerto Libertador, Valencia, Tierralta y Canalete; siendo Montería el municipio con mayor población y menor prevalencia; factores como lugar de procedencia, falta de apoyo familiar y estrés fueron quienes incidieron en recaídas, registrándose disminución en hospitalización de estos pacientes durante la pandemia COVID-19.

**Conclusión:** existe correlación entre variables sociodemográficas como lugar de procedencia del departamento de Córdoba, falta de apoyo familiar y estrés como determinantes para la ocurrencia del diagnóstico de trastornos del estado de ánimo, en pacientes que proceden de municipios caracterizados por niveles de violencia alto y medio, baja cobertura educativa y pobreza multifuncional en población vulnerable.

**Palabras clave:** Trastornos del estado de ánimo, violencia, emociones, poblaciones vulnerables, pacientes.

### Introduction

Emotions like fear, sadness, uncertainty, isolation are emotional states that, when they become intense and habitual, become risk factors that allow the development of physical and mental diseases (1). This state is aggravated by sociodemographic variables that are experienced in stressful situations or others that are conditioned by the context.

Mood disorders are frequent psychiatric diseases in the general population, including depressive disorders (mainly major depression and dysthymia) and bipolar disorder (manic or depressive), whose main characteristic is the alteration of mood (2-4). The World Health Organization has classified depression as the main factor contributing to global disability and suicide deaths. In this regard, in 2015, more than 322 million people worldwide were estimated to suffer from depression, equivalent to 4.4% of the world population (5).

In Colombia, according to the National Mental Health Survey, in 2015, affective disorders, depression or bipolar disorders are more prevalent in people aged between 18 and 44 years (6). It should be noted that in the country, bipolar affective disorder (BAD) occupies 1.2% of the disease burden. In Medellin-Colombia, a study on family aggregation and characteristics of patients with BAD found that 70% were women (7, 8). Similarly, a study conducted in Peru shows a higher prevalence of depression in women (9, 10).

In the general population of Colombia there are 2.6 women with the diagnosis for every man (11). The above is confirmed in the mental health bulletin in 2015 MinSalud, where it was reported that 70.4% of the people attended with a diagnosis of moderate or severe depression were female, while 29.6% were men, on the other hand, in the first year of the pandemic by COVID-19, the global prevalence of anxiety and depression, increased by 25% (12, 13).

The sociodemographic variables considered in the study were place of origin, lack of family support and stress, such variables together with other factors that occurred during the COVID-19 pandemic caused fear and uncertainty in people, contributing to the increase of mental pathologies. Regarding the provision of services, the World Health Organization (WHO) reported that 93% of the countries saw how the pandemic affected the provision of mental health services, which were already suffering from funding shortfalls (14-16).

The aim of this study was to characterize sociodemographic characteristics in patients with mood disorders in order to correlate them with their variables of interest in a vulnerable population from municipalities in the department of Córdoba-Colombia and to observe their prevalence by age and gender.

### Methodology

Descriptive-observational and retrospective-longitudinal study, where sociodemographic variables of the population of interest were correlated, coming from the municipalities of the department of Córdoba, with mood disorders hospitalized in a mental health IPS (by its acronym in Spanish) of Montería, during the period 2012 to 2021-I, the confidentiality of the patients was taken into account for the analysis of the information.

**Study population:** 3,394 patients with different diagnoses hospitalized in a mental health IPS in the city of Monteria during the years 2012 to 2021.

**Study sample:** all patients with the diagnosis of mood disorders from municipalities of the department of Córdoba, there were 729 patients hospitalized in a period of time between 45 and 90 days. This database was given to the researchers, with the prior approval of the institution providing the service. This research activity did not compromise any name, person or other condition that affects or injures health; the work was carried out with databases.

**Inclusion principle:** patients hospitalized with mood disorders in the IPS of the study, whose origin are from municipalities of the department of Córdoba from the years 2012 to 2021-I.

**Principle of exclusion:** patients who do not have mood disorders, patients with this diagnosis who do not come from the department of Córdoba, and patients who were not hospitalized in the IPS.

**Unit of analysis:** the clinical records of hospitalized patients with mood disorders systematized in the IPS were reviewed. Since it is a database where specific cases are not mentioned, informed consent was not applied for the development of the research, it was evaluated in the ethics committee of the Faculty of Health Sciences of the University of Córdoba and approved, according to resolution 008430 of 1993 and 2378 of 2008, classified as minimal risk for not having direct contact with people.

### Macro variable of study:

**Sociodemographic:** place of origin of patients, lack of family support, age, socioeconomic stratum, occupation, sex, schooling.

**Diagnosis:** mood disorders.

The information on the study variables was collected and processed for analysis in a spreadsheet in the Microsoft Excel program of the Office 365 package, tabulating the qualitative and quantitative variables of interest. For the analysis of the sociodemographic variables and diagnoses, a table was

prepared with the following characteristics: age, gender, marital status, so-cioeconomic stratum, level of schooling, occupation, social security, place of origin and frequency of diagnoses of mood disorders (bipolar affective disorder, moderate depressive episode and severe depressive episode with psychotic symptoms). Finally, descriptive statistical analysis was performed and tests used with R version 4.1.2 and SPSS 25.0 considering p-values < 0.05 significant.

### **Results**

The sociodemographic characteristics of 729 patients with mood disorders were described, which according to the international classification of diseases ICD-11 refer to a higher grouping of bipolar and depressive disorders, users of a mental health IPS of Montería-Colombia. The sociodemographic variables of the study were: age, gender, marital status, socioeconomic stratum, level of schooling, occupation, social security and diagnosis of mood disorders (Table 1).

The diagnosis of mood disorders in this study included bipolar affective disorder (BAD), moderate depressive episode and major depressive episode with psychotic symptoms. The study showed that, for mood disorders, the majority were young people with an average age of 23 years, who presented a higher prevalence of bipolar affective disorder BAD, on the other hand, patients with moderate depressive episode were presented in the ages between 50 and 60 years in users who attended this institution.

**Table 1.** Sociodemographic characteristics of patients with mood disorders, Department Córdoba-Colombia 2012-2021-I n = 729

Average Age of Patients with Mood Disorders		23 years old	
		No. Patients	%
Gender	Male	689	95
	Female	40	5
Marital Status	Single	328	45
	Married	256	35
	Unmarried	80	11
	Divorced	36	5
	Widowed	29	4
Socioeconomic Status	1	620	85
	2	73	10
	3	36	5
Education Level	Illiterate	22	3
	Elementary school	342	47
	High School	299	41
	Bachelor	66	9
Occupation	With income	167	23
	Without income	562	77
Social Security	Subsidized regime	693	95
	Contributory Regime	36	5
Mood Disorders	Bipolar affective disorder (BAD)	400	55
	Moderate depressive episode	103	14
	Major depressive episode with psychotic symptoms	226	31

**Source:** author's own authorship, based on the database provided by the Mental Health Service Provider Institution for the study.

The 729 patients come from municipalities in the department of Córdoba with public order problems (Table 2).

**Table 2.** Proportion and confidence interval of the place of origin of patients with a diagnosis of mood disorder

Origin	N	n	Proportion	Lower Limit	Upper Limit
Montería	447716	307	0,07%	0,06%	0,08%
Tierralta	102348	152	0,15%	0,13%	0,17%
Valencia	43956	73	0,17%	0,13%	0,20%
Puerto Libertador	49179	138	0,28%	0,23%	0,33%
Canalete	22036	59	0,27%	0,21%	0,35%

**Source:** author's own authorship, based on the database provided by the Mental Health Service Provider Institution for the study.

The table above shows that the proportion and confidence interval for patients with mood disorders is higher in municipalities such as Puerto Libertador, Valencia, Tierralta and Canalete compared to Montería, which is the municipality with the largest population. In turn, a 95% confidence interval is shown for each proportion. Another fact that can be pointed out about these municipalities is that only in Canalete there are female patients in a ratio of 2:1 for each male patient.

When analyzing the P-value and confidence interval for the difference in proportions between Monteria and the different municipalities of origin of the mood disorder, it shows that the municipalities of Puerto Libertador, Canalete, Valencia, and Tierralta have statistically different proportions than Monteria (capital of the department of Cordoba, with a larger population), as for the place of origin of patients with mood disorders and as the confidence limits for the difference in proportions have both negative values for these municipalities, it is concluded that at a significance level of 95% these proportions are statistically higher than for the municipality of Monteria despite the fact that this is the municipality that contributed the most patients with this diagnosis to the study (n= 307).

It can be inferred with this sociodemographic and diagnostic information that they belong to a vulnerable, impoverished population, belonging to the department of Córdoba that in the last decades has experienced problems of public order, with high rates of violence, which is considered a population subjected to strong pressures, fears and fear whose mental health status is not guaranteed, considering that health is "the state of complete physical, mental and social well-being, not merely the absence of disease", a WHO concept of health given at its creation in the International Sanitary Conference, New York in 1946 (17), conceiving it as a process of dynamic

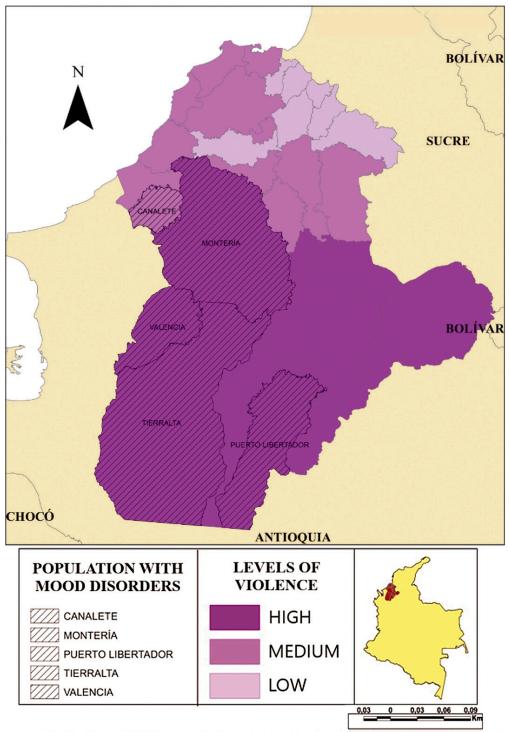
and unstable equilibrium between the individual, the community and the environment (18).

## Relationship of patients with mood disorders, place of origin and levels of violence in the department of Córdoba

Considering that the municipalities of origin of patients with mood disorders are mostly the same with a common pattern of violence and population displacement due to armed conflicts, with a high relative proportion of this mental pathology (Table 2), the possibility of this risk factor as a trigger for the development of these pathologies can be inferred, since these municipalities are also characterized by few interventions with promotion and prevention strategies that help improve mental health at the municipal and departmental level.

For a better understanding of the results, the research team decided to superimpose the place of origin of patients with the diagnosis of mood disorders and the respective areas of the department of Córdoba marked by high, medium and low levels of violence, taking into account the mental pathologies duly diagnosed in the institution of the study, making a referencing of the most common areas of origin. These are shown in the following map of the Department (19) (Figure 1).

Figure 1. Mood Disorders and Zones of Violence in Córdoba - Colombia



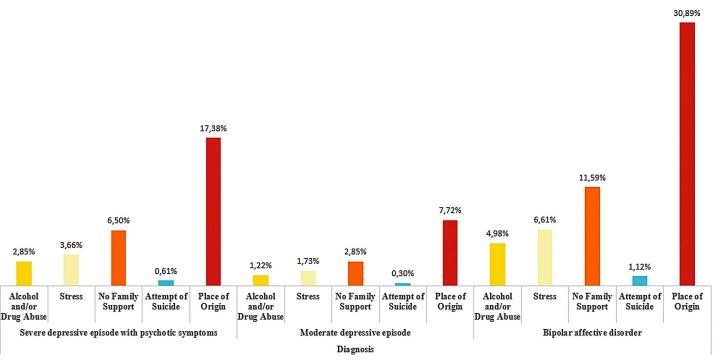
Source: Modified from CINEP/ Program for Peace: Land and territory in the state of Córdoba in the postconflict scenario. ISBN 978-958-644-208-4; 2016. Bogotá D.C., Colombia

Córdoba is divided into 30 municipalities, 311 townships, in addition to a number of hamlets and populated areas. When correlating the variables mood disorders, area of origin and levels of violence in the Department, it was found that there is a relationship in the results obtained, where it was

determined that the municipalities most affected by the mental disorders studied are the same municipalities that report high rates of violence, as shown in the previous figure.municipalities such as Monteria, Puerto Libertador, Tierralta and Valencia have high levels of violence, while Canalete has medium levels of violence. These municipalities have a total territory of 11,625 km² of the Department's total, distributed as follows: 3,141 km² Montería, 2,062 km² Puerto Libertador, 5,025 km² Tierralta, 914 km² Valencia. This is equivalent to 46% of Cordoba's territory, according to the Agustín Codazzi Geographic Institute. Data from the Department of Córdoba. Colombia.

The factors that influence the relapse of the diagnosis Mood Disorders can be seen in Figure 2.

**Figure 2.** Comparison of the diagnosis Mood Disrorders with factors influencing patient relapse



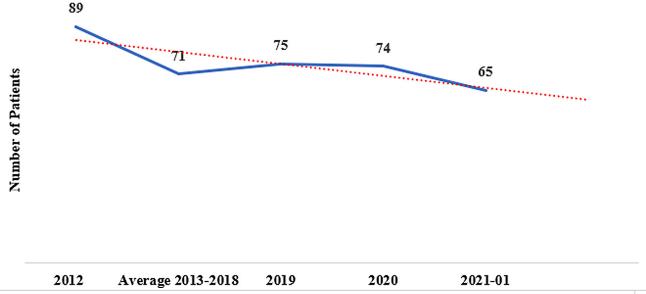
Source: Own authorship, based on the database provided by the Mental Health Service Provider Institution for the study

It was shown that the most common factors affecting relapse in the patients of the IPS of the study were the place of origin, which presented the highest percentages, according to graphed data, for all diagnoses of mood disorders with 55.9% for patients; in addition, in order, it was found that another factor affecting relapse for any diagnosis is the lack of family support, with 21%; followed in order as the third factor of relapse, stress

with 12%. These patients characterized in a sociodemographic way in the department of Córdoba came mostly from municipalities with high levels of violence.

The trend of patients admitted to mental health IPS of the study with mood disorders, period 2012-2021-I can be seen in Figure 3.

Figure 3. Trends Patients Admitted in the Period of Study 2012-2012-I



Source: Own authorship, based on the database provided by the Mental Health Service Provider Institution for the study

The figure above shows the number of patients in relation to the years and the average of these in the 10 years of study, showing that it starts in 2012 with 89 patients and maintaining an average admission in the mental health IPS until 2019 of 127 patients per year; then occurs in pandemic by COVID-19 a decrease to only 17 patients in 2020 (decrease of 85%) with a small increase in June 2021 (65 patients).

### Results discussion

Over time, mood disorders have become mental health diseases with a higher incidence; they will occupy the first place in the global burden of disease in 2030, according to the World Federation of Mental Health (20-21).

When correlating the variables mood disorder, area of origin and levels of violence in the department, it was found that there is a relationship in the results obtained. It was determined that the municipalities most affected by the mental disorders studied are the same municipalities that report high rates of violence with a total territory of 11,625 km² of the total of the department, which is equivalent to 46% of the territory of Cordoba.

There are studies which conclude that people exposed to war events are more at risk of suffering mental disorders, even many years after the traumatic events (22-24), this research presents similarities with the results obtained due to the fact that patients diagnosed with mood disorders come from municipalities of the department of Córdoba, characterized above. It could be observed from the CINEP/Program for Peace report that patients from the municipalities of Tierralta, Puerto Libertador, Valencia, Montería and Canalete belong to areas affected by the armed conflict (25). The study population is of socioeconomic stratum 1, with multifunctional poverty, which could be influencing the diagnosis of mood disorders.

The sociodemographic characteristics of the study show that the male gender is the one that suffers the most from mood disorders, with an average age of 23 years, being considered a productive stage for the human being, which coincides with a study conducted in 2017 at the Universidad de la Sabana in Colombia, but differences are shown in the social economic level and occupation, due to the fact that in the study conducted it was found that people from socioeconomic level 1, unemployed and coming from municipalities with high levels of violence, are those who suffer from this diagnosis, contrary to the study of the Universidad de la Sabana where it is suffered more by people from socioeconomic level 2 and employed people (26).

According to the bulletin of the population in conflict during 2019 of the Ministry of Health in Córdoba 324,180 people suffer from the armed conflict, which is equivalent to 17.7% in the Department (27). The same happens in the Department of Antioquia presenting according to the bulletin of 1,534,192 people victims of the conflict equivalent to 23.0%, being also areas of origin of patients with mood disorders user of the IPS of the study: Turbo, Carepa, Apartadó and Caucasia.

Considering the above, it can be reasonably inferred that patient relapses are due, in the first instance, to the place of origin, followed by the lack of family support, which is evidenced in little attention to compliance or non-adherence to treatment, as shown in the results.

Another aspect that was observed was the correlation of the number of patients with the years of the study. The study began in 2012 with 89 patients who presented mood disorder with a downward trend in the following years until the year 2021-01 with 65 patients; useful epidemiological information for the IPS and the municipality of Monteria, in the sense of

predictable projections for the following periods.

It should be noted that 984 patients with mood disorders were admitted to the IPS during the study period, of which 729 patients came from municipalities in the department of Córdoba, as shown in Figure 3; outside this study, Antioquia and Sucre had 206 and 49 patients, respectively. These last two departments have municipalities of origin in the area of influence to the IPS of the study.

Another finding found by the study was that in the research on mood disorders in Córdoba and that declared by the WHO there is a contrast, in the sense that depression for the WHO is the most prevalent diagnosis in the world, while in the study carried out it was bipolar affective disorder (28).

### **Conclusions**

It was recorded that within the mood disorder, the most diagnosed was bipolar affective disorder, with a higher prevalence in males and an average age of 23 years, being this a productive stage, constituting an emotional burden for families and an affectation for the household economy, This is contrary to the findings of Freeman and Freeman and other authors who report that women are more likely to develop borderline personality disorder and eating disorders, while the prevalence of conduct disorder and antisocial personality disorder is higher in men (29-31).

According to most research and as stated by the WHO, depression is the most prevalent mood disorder, however, in the study conducted is bipolar affective disorder, the worldwide prevalence is higher in women than in men (32-33).

The study generated valuable public health information to establish criteria for the characterization of patients with the diagnosis of mood disorder, in the IPS and in the municipalities of the department of Córdoba, making known the sociodemographic characteristics of these patients, factors that may influence the diagnosis and relapse, in order to implement mental health policies at the departmental level.

The mitigating factors that seem to influence the relapse of mood disorders in the IPS under study are extreme poverty, little opportunity for personal development and lack of family support, which are risk factors that influence and are considered in various studies, especially the phenomenon of displacement in the last two decades, as a determinant in the mental health of the population; in addition, men are mostly recruited by the different actors of the conflict (34-36).

Conflicts of interest: none.

Funding: self-financed.

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