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Differential perspective between public and private healthcare in epilepsy reference centers in Mexico

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Abstract

Background: Public and private healthcare in epilepsy are two different systems for citizens to enjoy health.

Aims: The objective was to compare epidemiological and social data between public and private hospitals in epilepsy care in Mexico.

Methods: Descriptive, prospective, observational, and longitudinal study. Inclusion criteria were patients with epilepsy from March 2021 to December 2022 in a tertiary private hospital (1) and public hospitals (89) in Mexico. Study variables were age, gender, type of epilepsy, etiology, number of seizures, paraclinical studies, and treatment. We compare epidemiological and social data between public and private hospitals in epilepsy care. Information was captured in Excel and analyzed in SPSS.

Results: A total of 554 patients from the private hospital and 10,852 patients from the public hospitals were treated.

In private hospitals, we found that there is a smaller sample of patients, less family history of epilepsy, and increased diagnosis of epileptic syndromes. Also, there are more genetic etiologies, less structural etiologies, and less drug resistance. Besides, more epilepsy surgery, and access to paraclinical studies.

In public hospitals, we found that there is a larger sample of patients, more family history of epilepsy, and fewer diagnoses of epileptic syndromes. Also, there are fewer genetic etiologies, more structural etiologies, and more drug resistance. Besides, less epilepsy surgery, and less access to paraclinical studies.

Conclusion: In private hospitals, we found more epilepsy surgery and access to paraclinical studies than in public hospitals. In Mexico, programs have been created to unify both systems and achieve the same diagnostic and treatment opportunities.

Keywords: Epilepsy; Public hospitals; Private hospitals; Anterior Temporal Lobectomy; Electroencephalogram

1. Introduction

Epilepsy is a brain disease characterized by the neuronal predisposition to generate seizures¹.

In Mexico, an estimated prevalence of epilepsy is 10 to 20 per 1,000 people², every patient treated must follow the guidelines for managing the clinical record³ and ideally have a reference system and counterreference⁴.

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Multiple factors affect epilepsy care; among others, the cost of antiepileptic drugs, their limited availability, the socioeconomic level of the patients, the inequality between health centers in the private and public sector, the shortage of neurologists and epileptologists, as well as the limitations in certain sectors of access to medical care and methods of diagnosis².

Public and private healthcare in epilepsy are two different systems for citizens to enjoy health.

Achieving the possibility of having the healthiest possible life and being able to count on adequate care are the purposes of healthcare in its most basic definition.

Each country organizes its health care based on its economic growth.

Hollingsworth found that public hospitals could provide medical services in a more efficient way than private ones in Europe and the United States by reviewing 317 published papers⁵.

On the other hand, Brown⁶ reported a higher efficiency of private hospitals than public hospitals.

In Mexico, there is a significant discrepancy in epidemiology and access to resources between public and private hospitals.

That is why in recent years, Epilepsy care centers of the Epilepsy Priority Program⁷ have been formed, to homogenize care.

Private hospitals cover one-third of the country's hospital capacity, but their coverage is concentrated in the main cities of the most developed states, unlike the public hospital sector which also covers medium-sized cities.

The private hospital sector has a total of 2,855 private hospitals. The vast majority (91%) are small hospitals (2,598 hospitals) (24 beds or less); 158 are medium-sized hospitals (25 to 49 beds); and large ones (50 beds or more) are a total of 99 hospitals⁸.

On the other hand, public hospitals are smaller in number -a total of 1,380- but they are larger and have the double capacity, covering two-thirds (67%) of their capacity since they are large hospitals with 60 beds on average and they are located not only in large urban areas but also in medium-sized cities.

Here the vast majority are from the Secretaria de Salud (762), followed by the IMSS (269) with larger hospitals, ISSSTE (111), IMSS BIENESTAR (80), state hospitals (50), those of SEDENA (45), SEMAR (33), PEMEX (23), as well as university hospitals (7)⁹.

To obtain the ranking of private hospitals, it was explained that -under the collection and validation of information among the hospitals themselves- five domains were measured at the national and regional level: processes, technology, medic.

Likewise, additional ranking is carried out focused on public hospitals to evaluate the government sector that is organized differently and with different capacities and categories, talent, results, and perception of specialist doctors.

In this study, we will analyze the differences, advantages, and disadvantages of both systems, to unify the clinical practice of care.

The objective was to compare epidemiological and social data between public and private hospitals in epilepsy care in Mexico.

2. Methods

This was a descriptive, prospective, observational, and longitudinal study.

Inclusion criteria were patients with epilepsy from March 2021 to December 2022 in a tertiary private hospital (1) and public hospitals (89) in Mexico. The exclusion criteria were the files with incomplete data.

Data were obtained from clinical records.

Study variables were age, gender, type of epilepsy, etiology, number of seizures, paraclinical studies, and treatment.

We compare epidemiological and social data between public and private hospitals in epilepsy care in Mexico.

Information was captured in Excel.

Tests (measures of central tendency: mean, median, average, standard deviation, chi-squared test) were applied in the SPSS program.

3. Results

In the period from March 2021 to December 2022, a total of 554 patients from the private hospital and 10,852 patients from the public hospitals were treated.

The mean age of the private hospital was 23.3 years old, $DE \pm 22.03$, range 1-84 years old (0-10 and 51-60).

The mean age of the public hospitals was 12 years old, range 0-95 years old (6-22).

The female gender was predominant with 55% in private hospitals and the male gender was predominant with 51% in public hospitals.

The most frequent records were the pediatric population in private hospitals (57%) and in public hospitals (70%).

A family history of epilepsy was found in 4% in private hospitals and 15.8% in public hospitals and those with febrile seizures in 6.7% in private hospitals and 9.1% in public hospitals.

According to the type of seizures, 60.4% presented seizures of focal onset in private hospitals and 51.1% in public hospitals.

An epileptic syndrome was identified in 18.6% (103 patients) of private hospitals, mainly Lennox-Gastaut (25), infantile epileptic spasms (25), and typical absence seizures (20).

An epileptic syndrome was identified in 11.6% (1,262 patients) of public hospitals, mainly Lennox-Gastaut (285), infantile epileptic spasms (263), and juvenile myoclonic epilepsy (171).

The etiologies were mainly unknown (55.5%), structural (25.7%) and genetic (13.3%) in private hospitals.

The etiologies were mainly unknown and structural, with more than 40% each and about 10% being genetic in public hospitals.

Cerebral atrophy and stroke were the most frequent structural etiology with 11% and 22% each in private hospitals.

Hypoxic-ischemic encephalopathy was the most frequent structural etiology with 981 patients (21.6%), followed by cerebral malformations with 916 (20.2%), as well as mesial temporal sclerosis and cerebral atrophy with 7.8% each in public hospitals.

Comorbidities occurred in 84.9%, mainly attention deficit hyperactivity disorder and autism spectrum disorder in private hospitals.

Comorbidities occurred in 6,326 patients (58.3%), mainly intellectual disability in 2,362 (21.8%) in public hospitals.

More than 60% were on monotherapy with antiseizure medication (ASM) in both types of hospitals.

Drug resistance had a frequency of 17.4% in private hospitals and 18.9% in public hospitals.

Epilepsy surgery was performed in 4% of private hospitals with the use of a vagal stimulator in 1.8%.

Epilepsy surgery was performed in 275 patients (2.5%), and the main ones were temporal lobectomy, lesionectomies, subpial resection, and callosotomy in public hospitals.

In private hospitals, of the paraclinical studies, 95% of patients had at least one electroencephalogram; 94% with computed tomography or magnetic resonance imaging of the brain; 40% with video electroencephalogram; while the spectroscopy, computed tomography single photon emission, emission tomography of positrons and invasives represented 9%.

In public hospitals, of the paraclinical studies, 79.3% of patients had at least one electroencephalogram; 76.9%, with computed tomography or magnetic resonance imaging of the brain; 4% with video electroencephalogram; while the spectroscopy, computed tomography single photon emission, emission tomography of positrons and invasives represented 1%.

In private hospitals, we found more epilepsy surgery than in public hospitals with a statistical significance ($X^2 = 282.146$) ($p < 0.05$).

In private hospitals, we found more access to paraclinical studies than in public hospitals with a statistical significance ($X^2 = 3.744$) ($p < 0.05$).

4. Discussion

In the new healthcare model -presented in 2015 by Secretaria de Salud of Mexico- strategies have been established for compliance with this right, whose main objective is to achieve levels of high coverage, however, this has not been enough.

In the case of patients with epilepsy, there is currently a high demand for the third level of care¹⁰.

Despite this, most of them, instead of being referred from the first and second level of care and by hospitals public, they are sent from the third level of care and by doctors with private practice.

Finally, this generates a failure in the reference system in which the patient sees increased time to access diagnosis, treatment, and timely follow-up, as well as diagnostic technologies and supply of antiseizure medications.

The 73.3% of patients with active epilepsy who reside in rural areas of low -and middle-income countries do not receive treatment or receive it inadequately; this is known as a gap in the treatment of epilepsy or treatment gap¹¹.

In our study, we found differences, including advantages and disadvantages, between public and private hospitals.

In private hospitals, we found that there is a smaller sample of patients, less family history of epilepsy, and increased diagnosis of epileptic syndromes. Also, more genetic etiologies, and fewer structural etiologies. Of the structural etiologies, the most common was stroke. More frequency of attention deficit hyperactivity disorder, and autism spectrum disorder. Besides, less drug resistance, more epilepsy surgery, and access to paraclinical studies.

In public hospitals, we found that there is a larger sample of patients, more family history of epilepsy, and fewer diagnoses of epileptic syndromes. Also, less genetic etiologies, and more structural etiologies. Of the structural etiologies, the most common was hypoxic-ischemic encephalopathy, with more frequency of intellectual disability. Besides, more drug resistance, less epilepsy surgery, and less access to paraclinical studies.

In private hospitals, we found more epilepsy surgery and access to paraclinical studies than in public hospitals with statistical significance.

In Mexico, programs have been created to unify both systems and achieve the same diagnostic and treatment opportunities^{12,13}. More strategies are required to achieve greater unification of medical systems, as well as a greater number of neurologists trained in Epilepsy, with counter-referral systems and the formation of reference centers for patients with Epilepsy, whether public or private.

5. Conclusion

Epilepsy is a brain disease characterized by the neuronal predisposition to generate seizures.

Every patient treated must follow the guidelines for managing the clinical record and ideally have a reference system and counter-reference.

In private hospitals, we found more epilepsy surgery and access to paraclinical studies than in public hospitals.

In Mexico, programs have been created to unify both systems and achieve the same diagnostic and treatment opportunities.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest.

Statement of ethical approval

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted by the Declaration of Helsinki, and the protocol was approved by the Ethics Committee.





Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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