



Prevalence of epilepsy, beliefs and attitudes in a rural community in Mexico: A door-to-door survey



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ABSTRACT

Objective: The study aimed to establish the prevalence of seizure history (SH) and epilepsy in a rural community in Hidalgo, Mexico and determine the patients' beliefs and attitudes towards the disease and its initial medical treatment.

Methodology: A transverse, descriptive, door-to-door epidemiological study (April 2011–November 2012) was conducted with 863 inhabitants from Xocotitla, Huejutla, Hidalgo, Mexico (162 housing units). Patients with SH were identified with an adaptation of the WHO protocol for epidemiological studies of neurological diseases. Afterwards, the subjects identified with seizure history (SH) or epilepsy were interviewed with a 20-question Likert type questionnaire regarding the management and belief set of their SH. The interviews were conducted in Spanish and Nahuatl.

Results: The prevalence of epilepsy and isolated nonrecurring seizures was 38.2/1000 and 25.4/1000, respectively. Out of the total population of 863 inhabitants, 33/863 were identified with SH: only 39.3% were able to identify an epileptic seizure as such, 48.5% sought medical attention upon the first seizure, 33.3% used a traditional healer, 15.2% took no action, 3% sought a religious representative, 85% lacked any lab analysis, and 60% received no antiepileptic drugs. Only 39% received free local medical attention, 69.7% considered seizures and epilepsy to be a consequence of divine intervention, and 94% reported some type of discrimination.

Conclusions: A high prevalence of epilepsy and SH was found in this rural community in Mexico. Divine/religious beliefs, discrimination, scarce access to basic health services and inadequate medical management of epilepsy and SH persist.

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1. Introduction

Epilepsy is the most common major chronic neurological disorder that affects people of all ages. There are approximately 50 million people affected [1]; 80% in the developing world [2], 60% live undiagnosed or have no access to appropriate treatments and medical services [3], and 5 million in South America and the Caribbean. In Mexico, an estimated 1 to 2 million people live with epilepsy, a prevalence reported between 10.8 and 20/1000 inhabitants [3–6]; however, neither the true urban nor rural prevalence is known. Epilepsy incidence is generally

reported as higher in lower-income economies; while prevalence may or may not be higher, comparisons are limited by lack of door-to-door prevalence studies and variations in the definition of active epilepsy [7].

According to the new Pan American Health Organization strategy and action plan regarding epilepsy, the relationship between health-care services and traditional attention systems, especially in marginal and indigenous communities, has been underdeveloped, Mexico being a clear example of this shortcoming [8]. In rural areas and different cultures around the world, epilepsy is conceived as a consequence of divine interventions and/or of supernatural causes. Readily accessible traditional medicine and religion play an important role in this perception [9,10]. Amid this context, people tend not to seek initial medical attention with a health-care professional, which delays diagnosis and treatment [3,10–12].

We report a door-to-door study of epidemiology data and a description of rural beliefs in Mexico.

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2. Materials and methods

A door-to-door transversal study was conducted from April 2011 to November 2012 in a rural community in Mexico.

2.1. Description and selection of sample

The community of Xocotitla, part of the Huejutla de Reyes municipality, state of Hidalgo, Mexico, was selected for its convenient location and previous experience with providing social service to the community (Fig. 1) [13]. According to the 2010 census conducted by the National Statistics, Geography and Informatics Institute (INEGI), the population included 863 people distributed in 162 low socioeconomic status households, out of which: 30.2% had a dirt floor, 31.5% were constituted by a sole room, 85.2% with a latrine, 91.3% lacked drainage, 29.5% were illiterate, and 1.8% had electricity [13]. Regarding access to health-care services: 83.3% were not entitled to any medical care, and 16.3% had social security (Mexican Institute of Social Security or Institute for Security and Health Services for State Workers) [13].

2.2. Methods

An adult (>18 years old) or the head of 162 households was interviewed; if no one was home, the interviewer returned the next day. Following informed consent, the WHO protocol: Epidemiologic Studies of Neurologic Disorders questionnaire was administered for the identification of neurologic risk factors and epilepsy diagnosis frequency according to the International Classification of Disease, 10th Rev. ICD-10 (G40.0-G40.3 and G40.6-G40.7). Afterwards, the subjects identified with seizure history (SH) or epilepsy were interviewed with a 20-question Likert type questionnaire regarding their treatment and the belief set of their SH. The latter questionnaire provided information with respect to: age at the time of the first epileptic seizure, capacity to identify symptoms, reaction of family members, SH, professional evaluation (lab studies: complete blood count, blood urea nitrogen, creatinine, uric acid, chloride, potassium, sodium, glucose, cholesterol and triglycerides), causal attribution, and discrimination. Epilepsy was defined according to the 2005 Task Force of the International League Against Epilepsy, in which more than two unprovoked seizures with more than 24 h between seizures are required [14]. This questionnaire was validated as a pilot test in 30 subjects from the same rural community [15].

The instruments were applied by S.A., who daily visited the community and fluently spoke Spanish and Nahuatl. All of the procedures in this study received academic approval from the Ethics in Investigation Committee from the Universidad Autónoma de Tamaulipas and local approval by the rural delegate.

2.3. Statistical analysis

Descriptive statistics were utilized (rates, frequency, and percentages) to characterize the study subjects and to identify the distribution of clinical variables; χ^2 with statistical significance of $p < 0.05$ was used for nonparametric variables (SPSS V. 17.0). The prevalence rates were calculated per 1000 inhabitants.

3. Results

All households were queried. Out of the total population of 863 inhabitants, 33 inhabitants with SH were identified. The prevalence rate of epilepsy and isolated nonrecurring seizures were 25.4/1000 and 38.2/1000 inhabitants, respectively.

The first seizure presented before the age of 10 years in 81.1% of cases. Regarding kinship, 60.6% of the inhabitants with SH were offspring of the interviewee. Sixty-six percent of the subjects had more than one epileptic seizure (epilepsy).

Etiology, age distribution, and usage of lab studies are shown in Table 1. Sixty percent of people with SH received no antiepileptic drug (AED) treatment. Among the 40% who did receive treatment: 92% received it after the first seizure, and 39% acquired it free of charge in the local health-care center. Adherence to treatment was reported in 92.3% of cases. Only 1 patient reported poor adherence to treatment (consumption less than 50% of prescribed AEDs per week) due to lack of resources to acquire it. Hospitalization was required in 9.1% of cases after their first epileptic seizure.

Regarding the interviewee or their kin's capacity to identify the signs and symptoms of an epileptic seizure (Table 2), only 39.4% could identify it as such upon its first presentation. Commonly, upon identifying an epileptic seizure, patients were brought to a traditional healer (38.5%), similar to the group in which the epileptic seizure was not identified as such (30%) ($p = 0.736$).

The group in which the family members could not identify the first epileptic seizure as such tended to utilize health services (60%) more than the group that did identify the seizure (30%) ($p = 0.045$). A single



Fig. 1. Children in the Xocotitla community, Huejutla de los Reyes, Hidalgo, Mexico.

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