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Impact of epilepsy surgery on the quality of life of a low-income population through the application of the Qolie-10 scale

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KEYWORDS
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Summary
Objective: To describe the impact of epilepsy surgery on quality of life through the application of the quality of life in epilepsy (QOLIE-10) scale in a low income population.
Methods: We conducted an observational, descriptive, and cross-sectional study. The data for all patients who underwent epilepsy surgery from the aforementioned period were registered retrospectively through a review of their clinical history. Clinical variables of interest for this study were obtained through phone contact, and the QOLIE-10 scale was applied.
Results: This study included a total of 89 patients with whom phone contact was established and who met the inclusion criteria. Of these patients, 30.3% were without anti-seizure medication at the time of the survey's application, and only 19.1% were still under polytherapy. A total of 47.1% of the patients had returned to some work activity that they would have not been able to perform before because of their disease. All of the components of the QOLIE-10 scale improved significantly ($p < 0.05$) after the surgical procedure, except the variable of ''fear of the sudden occurrence of seizures''. The variables with greatest impact after the surgical procedure were depression, work activity, and quality of life in general.
Conclusion: Epilepsy surgery has a positive impact on the quality of life of patients with low resources and in vulnerable social conditions. It is still to be determined if, in this population, work and social reintegration have a greater impact on the quality of life than other clinical and/or paraclinical variables.

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Introduction

Epilepsy is a prevalent disease with a significant social and economic impact and a higher frequency in developing countries (Ngugi et al., 2010). The approximate prevalence for developed countries is 5.8 per 1000, compared with 15.4 per 1000 for developing countries (Ngugi et al., 2010). In Colombia, the general prevalence is estimated to be 11.3 per 1000, except in the east, where the prevalence is 23 per 1000 (Velez and Eslava-Cobos, 2006). Nearly one third of patients with epilepsy lack control of their epileptic seizures with pharmacological management (Espinosa and Sobrino, 2014). It has been shown that one of the most effective interventions, and one that may change the natural history of refractive epilepsy, is epilepsy surgery, which in temporal lobe epilepsy is better than pharmacological management for the control of the seizures (Miller and Hakimian, 2013; Wiebe et al., 2001). The benefits of epilepsy surgery include the following: a 2.4-fold decrease in the mortality rate of patients operated on and free of seizures, improvement in job and study opportunities, ease in interpersonal relationships, social reintegration, and greater independency (Wiebe and Jette, 2012). In addition, in the objective measurement of quality of life in epilepsy using scales such as QOLIE-31 and QOLIE-10, ictal frequency is one of the most significant parameters related to quality of life (Guekht et al., 2007). For this reason, epilepsy surgery has a beneficial impact on the quality of life, as seizure freedom rates of up to 48% have been reported (Wiebe and Jette, 2013). There are not many studies that examine the quality of life after epilepsy surgery in low-income and socially vulnerable individuals. For this reason, there is a need to describe the impact of epilepsy surgery on the quality of life of this population, and considering that the Kennedy Western Hospital is a public hospital in Bogotá, Colombia where the majority of the population is of low socioeconomic resources with a high degree of social vulnerability, and where close to 25% of the patients with epilepsy are illiterate (Espinosa-Jovel et al., in press), it was decided to conduct this retrospective study to describe the impact of epilepsy surgery on the quality of life through the application of the QOLIE-10 scale. We thought that in addition to clinical markers of post-surgical success, such as seizure frequency, psychiatric comorbidities, and type of surgery, among others, in this vulnerable and low income population, there are other social and work variables that should also be considered in defining ''post-surgical success''.

Materials and methods

Study design

We conducted an observational, descriptive, cross sectional study. We retrospectively recorded the data of all patients who underwent epilepsy surgery during the period of 2005-2013 by reviewing their clinical histories. The quality of life in epilepsy scale, QOLIE-10, was applied via phone. The scale was previously validated for the Spanish language by Viteri et al. (2008), and clinical variables of interest to this study were obtained (See Fig. 1).

Study population

Patients who were treated at the Center of Excellence in Epilepsy of the Kennedy Western Hospital in Bogotá, Colombia and underwent surgery during the period of 2005-2013. The Kennedy Western Hospital is a public hospital from the capital district of Bogotá that functions as the tertiary care center for the people of the suburb of Kennedy (Bogotá, Colombia) and its areas of influence, representing an approximate population of 2,741,000 individuals according to state statistics. The majority of individuals are of low-income status, with the highest unemployment rate (16.3%) of all the suburbs of Bogotá, which is above the global unemployment rate for Bogotá (13.1%). Fifty-three percent of the Kennedy population is poor, and 13.3% is destitute (Anon, in press). All of the patients included in this study were evaluated at Kennedy Western Hospital, which mainly cares for low-income and socially vulnerable individuals. Head MRI and neurophysiology studies that included video-telemetry and cognitive evoked potentials were performed for patients for whom these procedures were indicated. All of the patients were evaluated comprehensively and by a multidisciplinary team of doctors in neurology, neurosurgery, neurophysiology, neuropsychology, and psychiatry. The patients were taken to a pre-surgery decisions meeting where it was determined if the patient was a surgical candidate, and if so, it was determined what type of surgical procedure was indicated. The surgical procedure and the histopathological study were always done by the same medical group. The data of the patients included in this study were taken from the database of the epilepsy surgery group of Kennedy Western Hospital. All patients with whom successful phone contact was made and who agreed to participate in the study were included. Patients who provided insufficient data or data that did not correlate with the data recorded in the clinical history, patients who had undergone surgery in the last 6 months, and patients who did not wish to participate in the study were excluded.

The variables analyzed included demographic data such as age and gender; clinical data such as type of surgery, histopathological findings, and therapy with anti-seizure medications, which included the variable of polytherapy (use of two or more medications at maximum tolerable doses at the time of evaluation) and monotherapy (use of one medication at the maximum tolerable dose at the time of evaluation); and social data, such as return to work, which was defined as the reinitiating of any work activity (formal or informal) after the surgical procedure. With respect to the quality of life variables, each of the QOLIE-10 scale items was analyzed before and after the surgery. The total value of the scale was also analyzed, applying the formula for standardizing such results with ranges between 0 and 100 points, where the highest values represent a better quality of life related to health.

Statistical analysis

The data were analyzed using descriptive epidemiology tools: for the quantitative variables, measurements of central frequency and dispersion were calculated, and absolute and relative frequencies were estimated for