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Quality of life among women with epilepsy during their reproductive years

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A R T I C L E I N F O

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A B S T R A C T

Purpose: The purpose of this study was to assess the health-related quality of life (HRQoL) of women with epilepsy during their reproductive years.
Method: A cross-sectional study comparing two groups, one with and another without epilepsy, was conducted. Semistructure questionnaires regarding socioeconomic, demographic, and clinical profiles were used. The HRQoL was measured using the Quality of Life in Epilepsy Inventory (QOLIE-31), for comparison within the group with epilepsy, and World Health Organization of Quality of Life (WHOQOL)-bref, for comparison between the groups with and without epilepsy. Statistical analysis was performed using Fisher's exact test, Mann–Whitney test, and multivariate linear regression. A measure of significance was considered as $p < 0.05$.
Results: Eighty women were included (40 with epilepsy and 40 without epilepsy) with mean age of 28.2 ± 6.51 years. Women of childbearing age with epilepsy tend to have lower quality of life than those without epilepsy (with epilepsy: 85.15 ± 13.50 *vs.* without epilepsy: 90.75 ± 12.17, $p = 0.051$). The groups were similar in relation to most sociodemographic characteristics, with the exception of the percentage of women with epilepsy outside the labor market (with epilepsy: 57.5% *vs.* without epilepsy: 30%, $p = 0.012$) and with clinical (with epilepsy: 27.5% *vs.* without epilepsy: 7.5%, $p = 0.018$) and psychiatric comorbidities (with epilepsy: 20% *vs.* without epilepsy: 0%, $p = 0.003$). However, logistic regression showed no influence of these variables on the HRQoL of women with epilepsy. The clinical variables associated with the worsening of HRQoL were seizure control and antiepileptic drugs (AEDs) adverse effects.
Conclusion: Epilepsy has a negative impact on the HRQoL of women of childbearing age, and the clinical variables controlling seizures and adverse effects of AEDs influenced HRQoL in this population.

1. Introduction

Epilepsy is a chronic neurological disease that affects approximately 65 million people worldwide, with a higher prevalence in developing countries [1]. The problems related to the disease go beyond the signs and symptoms, with the possible limitation in daily activities and in the health-related quality of life (HRQoL) of people with epilepsy [2,3].

Previous studies have shown worse HRQoL in women with epilepsy compared to men [4–6]. Women diagnosed as having epilepsy deserve special attention because of hormonal variations, sexual issues, and reproductive planning issues and their relation with seizures and use of antiepileptic drugs (AEDs) [7].

The treatment of women with epilepsy should be focused not only on the disease. The health professional who cares for these women should be aware of the particularities, roles and priorities each individual patient has for their lives. Career, work, education of children, family and home could affect the quality of live. The healtcare professional should help them manage these challenges, what can result in better HRQoL [8]. Therefore, the objective of this research was to test the hypothesis that epilepsy may interfere with the HRQoL among women in reproductive years.

2. Material and methods

2.1. Study design

A cross-sectional study comparing groups and using quantitative approaches was conducted. Data collection was performed from April to September 2017 at Centro Médico in the city of Salvador, Bahia, Brazil. The protocol was approved by the institutional review

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2.2. Participants

One group corresponded to the women enrolled and seen in the epilepsy outpatient clinic, and the other group to the women followed in the general gynecology and sexual and reproductive health clinics. All clinics were from the same medical center in order to reduce the discrepancy of the socioeconomic profile. The gynecology outpatient clinic was chosen because of the profile of the public, who usually attends routine consultations. Thus, it was more possible to recruit healthy women.

The inclusion criteria were as follows:

Group with epilepsy: 1) are between 18 and 44 years; 2) have a diagnosis of epilepsy according to ILAE (International League Against Epilepsy) [9]; 3) are not pregnant; 4) are able to answer the questions; and 5) agree to participate in the study by signing the Free and Informed Consent Term (FICT).

Group without epilepsy: 1) are between 18 and 44 years; 2) do not have a diagnosis of epilepsy; 3) are not pregnant; 4) are able to answer the questions; and 5) agree to participate in the study by signing the FICT.

The exclusion criteria were as follows: women who had chronic active systemic diseases that had an impact on the quality of life and who had psychological changes that prevented them from responding to the questionnaires.

Women diagnosed as having epilepsy who participated in the research were evaluated by outpatient psychologists for neuropsychological and psychological assessments through the following validated instruments: Neupsilin [10], WASI [11], Beck anxiety and depression inventories [12].

2.3. Variables and methods of assessment

For the group with epilepsy, the evaluation was performed in a single interview using three instruments: 1) semistructured questionnaire with demographic, clinical, and socioeconomic data; 2) World Health Organization of Quality of Life (WHOQOL)-bref questionnaire assessing quality of life; and 3) Quality of Life in Epilepsy Inventory (QOLIE)-31 questionnaire assessing the impact of epilepsy on HRQoL. For the group without epilepsy, two instruments were used: 1) semistructured questionnaire with demographic, clinical, and socioeconomic data and 2) WHOQOL-bref questionnaire.

The socioeconomic and demographic data were dichotomized to facilitate the understanding of ethnicity: white and not white; marital status: single (single and divorced) and married (married and widowed); religion: yes (Catholic, spiritist, Protestant, African Matrix, and Jehovah's Witness) and not (without Klaus); schooling: <10 years (illiterate to incomplete mean) and >10 years of study; economically active: yes (works with and without a formal contract) and no (unemployed, sick, and retired); family income (<3 minimum wage and >3 minimum wage); clinical comorbidities (yes and no); and psychiatric comorbidities (yes and no).

Clinical data were as follows: type of epilepsy (focal or other types: generalized, combined, and unknown); refractory (yes or no); history of bilateral clonic–tonic seizure; treatment (monotherapy or polytherapy); seizure control (based on seizure frequency: one year without seizures was considered as controlled); associated comorbidities (clinical, psychiatric or clinical, and psychiatric); and presence of adverse effects related to AEDs.

World Health Organization of Quality of Life-bref is an instrument developed by the WHO to evaluate quality of life and can be applied in healthy or unhealthy populations. The structure is composed of four domains of quality of life: physical, psychological, social, and environmental. Higher scores denote higher values of quality of life, so each domain evaluated denotes an individual perception of quality of life. The domain score was calculated from the average item score of each domain [13]. In this research, we present the values converted on a scale from 0 to 100 according to the inventory.

Quality of Life in Epilepsy Inventory-31 is an instrument developed to evaluate HRQoL in people with epilepsy. Its structure is composed of seven domains: concern with crises, global quality of life, emotional well-being, energy/fatigue, cognitive function, medication effects, and social function. The values are converted into a scale of 0 to 100 points according to the inventory, and the higher the score, the better the HRQoL [14].

2.4. Statistical analysis

The sample size was 40 women for each group (a total of 80 participants), calculated to detect a difference of 10%, considering a prevalence of changes in the quality of life around 20%, alpha error of 0.05, test power of 90%, and sample loss of 10% [15].

Statistical analysis was done by recording the questionnaires in digital databases using the software Statistical Package for the Social Sciences 17.0 for Windows (SPSS, Chicago, IL, USA). Data were presented in tables according the mean frequency and standard deviation for each group. Fisher's exact test was used for categorical variables (race/color, economically active, marital status, religion, schooling, family income, and clinical and psychiatric comorbidities). For the numerical variables (WHOQOL-bref and QOLIE-31 scales), the Mann–Whitney test was performed between the groups. Multivariate linear regression was performed considering the dependent variables (Quality of Life and QOLIE-31 domains that presented significance: cognitive function, social function, emotional wellbeing, and energy/fatigue) and the independent variables (economically active, clinical comorbidity, psychiatric comorbidity, crisis management, and adverse effects). The level of significance was set at 5%.

3. Results

Eighty-eight women were invited. In the group with epilepsy, four women were excluded because of psychological and/or cognitive alterations, and in the nonepilepsy group, four women were also excluded because of sickle cell anemia, lupus erythematous, psoriasis, and endometriosis. Thus, 80 women were included, 40 in each group.

3.1. Comparisons between groups with and without epilepsy

The mean age in both groups was similar (group with epilepsy: 28.2 ± 6.51 years *vs.* group without epilepsy: 29.50 ± 6.99 years, $p = 0.452$). The comparative analysis of socioeconomic and demographic characterizations showed that the groups were similar for race/color, marital status, religion, schooling, and family income (US$260.00). The only difference between groups was related to economic activity (group with epilepsy: 57.5% were unemployed or receiving health benefit while in the group without epilepsy: 30%, $p = 0.012$). In the comparative analysis of the clinical characterization, eight women (20%) in the group with epilepsy presented controlled psychiatric comorbidities at the time of research. In the group without epilepsy, no subject reported psychiatric comorbidity. This difference was statistically significant ($p = 0.002$). Regarding clinical comorbidities, eleven women (27.5%) in the group with epilepsy had controlled comorbidities, and three women (7.5%) in the group without epilepsy had controlled comorbidities; this difference was also significant ($p = 0.018$) (Table 1).

The WHOQOL-bref questionnaire was used to compare the quality of life between the groups with and without epilepsy. The HRQoL tend to be worst among women with epilepsy (with epilepsy: 85.15 ± 13.50 *vs.* without epilepsy: 90.75 ± 12.17, $p = 0.051$). In this analysis, the group with epilepsy had lower scores in Physical_100 (58.48 *vs.* 70.71,