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Sexual function and related factors in Iranian woman with epilepsy

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ABSTRACT

Purpose: Epileptic women are faced with many sexual challenges in their life due to medical and non-medical factors. The present study was conducted to assess sexual function in epileptic women and its related factors.

Method: The present cross-sectional study was conducted on 196 epileptic married women of reproductive age who were members of the Iranian Epilepsy Association and were selected continuously over six months through convenience sampling. The data collection tools included the Female Sexual Function Index (FSFI) and questions about the causes of sexual dysfunction. The statistical tests including: Chi-square, *t*-test, one-way ANOVA, linear and logistic regression.

Results: According to the results, 74.5% of the participants suffered from sexual dysfunction and scored the lowest in terms of the orgasm and sexual satisfaction dimensions. The factors associated with sexual dysfunction included age over 40, poor education, more than 15 years of marriage, poor economic status, history of infertility and irregular menstruation, several seizures per month, nocturnal seizures, triple or multiple drug therapies and not using anticonvulsant drugs that have no effect on the liver enzymes. From participants' perspective, the most common causes of sexual dysfunction include anxiety and stress, emotional problems with the spouse, dissatisfaction with the experience of unwanted sex and the type of drugs used.

Conclusions: Since the incidence of sexual dysfunction in epileptic women is high and multifactorial, it is recommended for experts and health service providers to not only seek to better control the patients' seizures, but also assess them in terms sexual function.

1. Introduction

Epilepsy is the second most common neurological disorder and is recognized by sudden and recurrent seizures. Based on a meta-analysis study conducted by Sayeh-Miri et al. [1], the prevalence of epilepsy was estimated as 5% in Iran [1]. This prevalence varies from 0.3% to 0.7% in women of fertile ages [2]. Although sexual desires and function are a priority in all marriages, previous studies have shown that sexual dysfunction is common in both epileptic men and women [3]. Sexual dysfunction among women is identified as impaired desire, arousal, orgasm and pain associated with severe distress [4].

Some of the most important consequences of sexual dysfunction and sexual dissatisfaction are psychologic problems such as anger, nervousness, couple emotional separation and family problems. These problems can lead to marital disruption and divorce [5].

Accordingly, A population-based study showed, that sexual dysfunction in Iranian women was 31.5%, that would increase with ageing. Sexual dysfunction risk factors, in this study, were defined as educational level, age of marriage, marital status and chronic disease [1].

Epilepsy is one of the most important chronic neurological diseases that can affect sexual function. Due to the nature of the disease and the use of anticonvulsant drugs and their potential effect on the reproductive and sex hormones, epileptic women are faced with many reproductive (irregular menstruation and infertility) and sexual challenges [7]. Although epileptic women

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can have a normal sex life, studies have estimated that 20% to 60% of them experience impaired sexual desire or arousal and orgasmic dysfunction (8 and 9).

The interaction of epilepsy problems and drug therapy with temporal and frontal lobe involvement, hypothalamus involvement and changes in the hypothalamic-pituitary-ovarian axis can cause sexual hormone imbalance, neurovascular disorders [8] and psychological disorders [9]. Non-medical factors such as social factors, the healthy partner's reaction to the disease [10], the experience of stigmatization, emotional disorders, interpersonal problems such as social isolation and poor social competence, especially in epileptic women [11], also contribute to the sexual response mechanism in epileptic women [12].

It is worth noting that no comprehensive studies have yet been conducted on the sexual problems of Iranian epileptic women. Such problems are subjective and abstract issues that are influenced by complex medical and sociocultural factors and society's values and religion; as a result, the causes of the sexual problems and concerns experienced by this group cannot be identified and alleviated with a single tool [13]. The present study is part of a PhD thesis aiming to investigate sexual function in epileptic women and its related factors. For this purpose, the standardized Persian version of the FSFI was used along with questions posed to identify the root causes of sexual dysfunction from the perspective of the participants.

2. Methods

This descriptive cross-sectional study was conducted on a population consisting of 210 married epileptic women of reproductive ages (18–45 years) who were members of the Iranian Epilepsy Association. The inclusion criteria consisted of having epilepsy and receiving drug therapy since at least a year ago. The exclusion criteria consisted of having other chronic physical and psychological diseases (such as diabetes, hypertension, thyroid disorder, substance abuse and cognitive and neuropsychiatric disorders) and being pregnant or breastfeeding. Continuous convenience sampling was performed over six months from November 2016 to April 2017. Taking into account a type I error of 0.05, an effect size of 0.15 and an attrition of 20%, the sample size was determined as 207, and a total of 196 women were finally included in the study. The data collection tools consisted of a form inquiring about participants' demographic, disease and drug therapy details and asking questions about the causes of sexual dysfunction from participants' perspective. The Persian version of the Female Sexual Function Index was also used, which has had its validity and reliability confirmed in a study of Iranian women by Mohammadi et al. and which has a cut-off point of 28 for sexual dysfunction [15].

The score of the FSFI was obtained by multiplying the sum of the scores in each dimension by a factor number. The dimensions of sexual desire and sexual satisfaction were scored from 1 to 5 and the dimensions of sexual arousal, lubrication, orgasm and intercourse pain were scored from 0 to 5. The total score was obtained by adding the scores of all the six dimensions. The maximum score was 6 for each dimension and 36 for the entire scale. The minimum score was 1.2 for sexual desire, 0 for sexual arousal, vaginal lubrication, orgasm and intercourse pain, 0.8 for sexual satisfaction and 2 for the entire scale.

In addition to these questions, eight more questions were asked to assess the underlying causes of sexual dysfunction in epileptic women, which were scored from 1 to 5. The lower was this score, the less did the subjects consider that item an underlying cause of their sexual dissatisfaction and vice versa. After obtaining a letter of introduction from Shahid Beheshti University of Medical Sciences and presenting it to the Iranian Epilepsy Association, the researcher was introduced to the study subjects. This research was approved by the ethics committee of the International Branch of Shahid Beheshti University (code: IR.SBMU.IASB.REC).

At the beginning of each interview, the researcher introduced herself, explained the study objectives and obtained informed consent from the participants, and ensured them of the confidentiality of the data and their right to withdraw from the study at any stage. Membership in the Iranian Epilepsy Association requires the submission of documents confirming the epilepsy diagnosis (EEG and MRI results) and referral by a trusted neurologist.

2.1. Statistics

The data collected were ultimately analyzed in SPSS-17 using descriptive statistics (mean and standard deviation) and frequency distribution. The Chi-square test was used to compare the frequency of the qualitative and ordinal variables and the independent *t*-test and the one-way ANOVA to compare the mean. The relationship between the questions about the causes of sexual dysfunction from participants' perspective and the scores of the FSFI and its dimensions was assessed using the linear regression. The logistic regression was also used to estimate the risk of sexual dysfunction based on the background variables, disease details and causes of sexual dysfunction from participants' perspective. The level of statistical significance was set at $P \ll 0.05$.

3. Results

A total of 15 of the 210 participating women withdrew from the study, including nine due to their unwillingness to answer the questions, three due to pregnancy, two due to breastfeeding and one due to the discontinuation of the medications due to recovery. The participants had a minimum age of 20 and a maximum of 45 and had a mean age of 35.73 ± 6.21 years. The majority of the subjects (54.9%) had junior high education or high school diploma, were housewife (76.9%), had a poor (45%) or moderate (41.7%) income, had irregular menstruation (39.5%) and a history of infertility (23.6%).

The subjects' mean age at the onset of the disease was 16.47 ± 7.32 years. Most participants had generalized epilepsy (50.8%) with seizures often occurring during the day and in waking hours (63.6%). Almost half of the participants had no recurrence of seizures in the past year or over a longer period (44.6%), and the majority were on single drug therapy (56.3%); (Table 1).

A significant relationship was observed between the seizure intervals and income ($X^2 = 5.90$, $P \ll 0.05$). More than half of the participants (61.5%) who experienced recurring seizures several times per month were financially struggling and those who did not experience recurring seizures as often were mostly well off.

Tables 2 and 3 present the mean and standard deviation of sexual function and its dimensions, and also the frequency of the causes of sexual dysfunction from participants' perspective. Based on the cut-off point of 28 in the FSFI Mohammadi et al. [15], 74.5% of the participants experienced sexual dysfunction. The participants received the lowest scores in the dimensions of orgasm and sexual satisfaction, in respective order, and received almost similar scores in sexual desire and arousal. In 41.5% of the participants, half of or more than half of the sexual encounters in the past month had been unwanted.

Table 4 presents the difference in the mean scores of the FSFI by background variable. The table examines the relationship of the FSFI with age, education, duration of marriage, income, history of irregular menstruation and infertility using the *t*-test and the