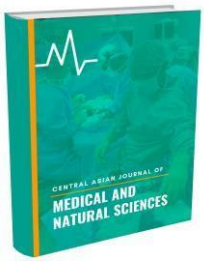

CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES
https://cajmns.centralasianstudies.org/index.php/CAJMNS
Volume: 05 Issue: 04 | October 2024 ISSN: 2660-4159

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Article

Outcomes of epilepsy and assessment of risk factors for patients.

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Abstract: Background Epilepsy is a common and widely recognized neurological problem, but it tends to be poorly understood, misdiagnosed, and inadequately treated. Objective: Our study aimed to assess epilepsy findings and determine risk factors affecting patients with epilepsy. Patients and methods A total of 90 participating samples of epilepsy patients who have ages between 20 – 70 years were recruited. Patient data were collected randomly from different hospitals in Iraq through patient interviews and review of medical records. This study evaluated the outcomes of epilepsy patients in terms of pain rate and quality of life for patients who were followed for one year from the period July 2022 to July 2023. Furthermore, we conducted a logistic regression analysis of the risk factors affecting the outcomes of epilepsy patients. Results Our findings showed that patients who age (61 − 70) years which are the most class with 45.56% of cases, males had 54 cases and females had 36 cases, patients who have BMI > 30.5 were the highest, which include 36 cases, patients have hypertension with 59 cases, and diabetes with 24 cases, 50 patients had sleep duration within 8 - 10 hours and 40 patients had sleep disorder. In assessment of patients' general health were excellent with 10 cases, very good/good with 24 cases, and fair/poor with 56 cases. Conclusion Older, single, and have sleep disorders are more likely to get epilepsy. Moreover, epilepsy risk is lower among those in very good general health.

Keywords: Epilepsy, Risk factors, Complications, Quality of Life, and Epidemiology.

Citation: Muhsin Mohammed Al Najim, Saif Mohammed Muslim, Outcomes of epilepsy and assessment of risk factors for patients.. Central Asian Journal of Medical and Natural Sci-ence 2024, 5(4), 71-77

Received: 26thJun 2024
Revised: 3rdJul2024
Accepted: 10thJul2024
Published: 17thJul2024

1. Introduction

Epilepsy is a brain disorder involving the cerebral cortex in a special way. For its pathological anatomy, neuroimaging studies are used [1,2]. A disorder affecting brain activity over time, leading to recurring seizures and causing neurobiological, cognitive, emotional, and social consequences. The prerequisite for epilepsy diagnosis is the presence of an epileptic seizure [3].

According to the ILAE (International League Against Epilepsy) and WHO (World Health Organisation), epilepsy is interpreted this way from 1973: an ailment characterized by chronic, repetitive paroxysmal episodes (convulsions or epileptic seizures), which are caused by abnormal electrical discharges with varying clinical symptoms, with many causes, incorporation of interictal phenomena (pharmacological traits) and occur sporadically [4-9].

Generalized epileptic seizures have their origin in a certain part of the brain, and then they spread rapidly over the network, bilateralizing all brain hemispheres from the point of projection in a diversified way, thus involving not necessarily all cortical areas [10 -12].

Epilepsy can be defined as a neurological disorder where an individual experiences recurring epileptic seizures which are not caused by any apparent immediate factors. An

epileptic seizure refers to that clinical manifestation that happens due to the abnormal excessive discharge of certain groups of neurons within the brain (Epilepsy Foundation 1). It is worth considering epilepsy in terms of the neurological symptoms but not as a distinct disease. [13]

The World Health Organization says ten people out of 1,000 have epilepsy globally. That would be between 30 million and 60 million epileptic patients worldwide. Yet this 10/1010 estimate is low considering that in developing countries like Mexico, the number is far higher. [14,15]

"We have done several epidemiologic studies in urban, suburban, and rural areas in our country through the Priority Epilepsy Programme (PEP) of the Health Sector in Argentina. A figure close to 18/10006 was found thus similar to what has been reported by different authors among other Latin American countries at 20 - 60/1010 people" [16,17]

Subsequently, a prevalence study was carried out in the population of Germany, where 145,000 inhabitants were studied, reporting a prevalence of 30/1000; studies were also carried out in suburban regions of Spain, where the prevalence was 14/1000 inhabitants. In a study carried out in 40 states of the Brazil Republic in children from people (23,000 individuals). [18 – 20]

2. Materials and Methods

This study employed a cross-sectional design to analyze data gathered from different hospitals in Iraq between July 2022 and July 2023. Data are complex and large-scale civilian surveys conducted jointly by different hospitals in Iraq.

Data, in brief, encompasses a study that employs a stratified, multi-stage probability sampling model to gather samples from Iraqi citizens that are representative of the nutritional state and health of Iraqi adults and children.

Participants in the data questionnaire were required to give two main reasons for taking their prescription medicines for the last forty-day period, as well as mentioning their names of such medicines. We classified those who indicated at least one (1) drug for epilepsy treatment out of two (2) such anti-epileptic medications listed by respondents into those used in severe forms of this disease.

During association analysis, we analyzed some covariates: gender, age, marital status, hypertension, smoking status, diabetes, general health, depression, sleep duration, and sleep disorders. Categories for marital status were married, widowed, divorced, separated, or never married.

It was concluded that the use of antihypertensive drugs, or one suffering from hypertension or a high blood pressure reading past 140/90 during a bodily checkup, amounted to high blood pressure. The National Center for Health Statistics classified this information into three groups: never-smokers (i.e., less than 100 cigarettes over their entire life) and current/ex-smokers (≥100 lifetime cigarettes).

The general health condition was divided into very good/good, excellent, and fair/poor. The depression severity was graded depending on the total score in the Patient Health Questionnaire (PHQ-9) scale, scoring between 0 and 27. No depression to minimal (0–4), mild (5–9), moderate (10–14), and moderately severe to severe (15–27) were the categories of depression severity.

Participants' responses to the question "Number of hours do you usually sleep on weekdays or workdays?" determined the amount of time required for sleeping. Such was grouped into short sleep duration (<8 hours), optimal sleep duration (8 to 10 hours), and long sleep duration (> 10 hours). The 2022–2023 database contained 90 subjects. A total of 90 subjects were taken from the database after selecting those aged 20–70 and removing all incomplete covariate information.

3. Results

Table 1: Identify clinical and demographic characteristics.

Characteristics	Number of patients [n = 90]	Percentage [%]
Age		
20 – 30	8	8.89%
31 – 40	13	14.44%
41 – 50	10	11.11%
51 – 60	18	20.0%
61 – 70	41	45.56%
Gender		
Male	54	60.0%
Female	36	40.0%
BMI, Kg / m2		
< 24.5	24	26.67%
24.5 – 30.5	30	33.33%
> 30.5	36	40.0%
Smoking status		
Yes	67	74.44%
No	23	25.56%
Comorbidities		
Hypertension		
Yes	59	65.56%
No	31	34.44%
Diabetes		
Yes	24	26.67%
No	66	73.33%
Anemia		
Yes	4	4.44%
No	86	95.56%
Heart failure		
Yes	36	40.0%
No	54	60.0%
Sleep duration, hours		
< 8	30	33.33%
8 - 10	50	55.56%

> 10	10	11.11%
Sleep disorder		
Yes	40	44.44%
No	50	55.56%
Marital status		
Married	38	42.22%
Widowed/divorced/separated	30	33.33%
Never married	22	24.44%

Table 2: Identify the main causes that lead to patients developing epilepsy.

Parameters	*Number of patients [n = 90]*	*Percentage [%]*
Genetic predisposition	18	20.0%
Brain trauma	6	6.67%
Brain tumors	20	22.22%
Stroke	8	8.89%
Infections of the brain	12	13.33%
Developmental disorders	26	28.89%

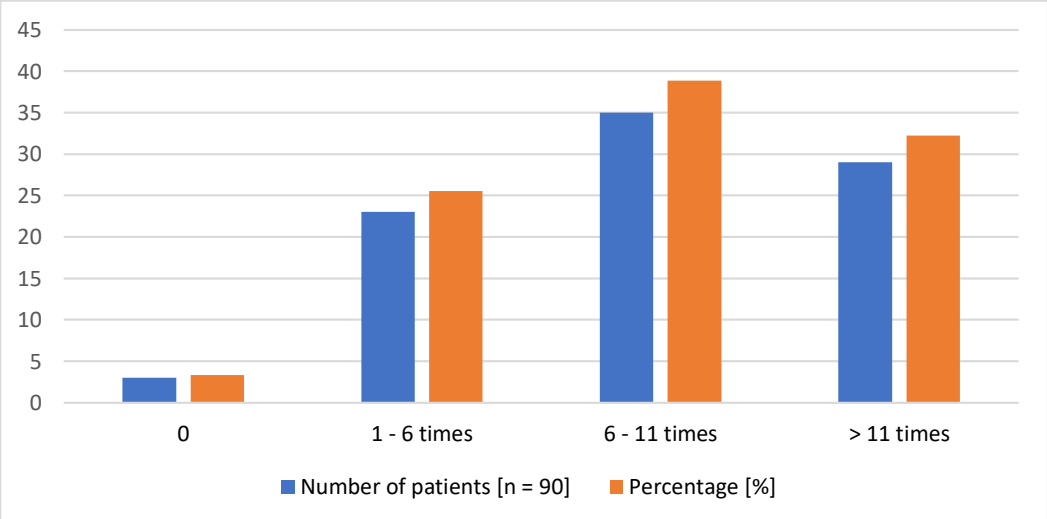

Figure 1: Distribution of recurring seizures in epilepsy patients.

Table 3: Types of seizure.

Type of seizure	**Number of patients [n = 90]**	**Percentage [%]**
Generalized tonic-clonic seizure.	68	75.56%
Focal seizure	12	13.33%
Seizure without convulsion	4	4.44%
Unclassified seizure	6	6.67%

Table 4: Assessment of psychological functions in epilepsy patients by PHQ-9 depression score.

Items	**Number of patients [n = 90]**	**Percentage [%]**
Moderately severe or severe (15–27)	69	76.67%
Moderate (10–14)	13	14.44%
Mild (5–9)	5	5.56%
None or minimum (0–4)	3	3.33%

Table 5: Assessment of quality of life for general health in patients with epilepsy.

Items	**Number of patients [n = 90]**	**Percentage [%]**
Excellent	10	11.11%
Very good/good	24	26.67%
Fair/poor	56	62.22%

Table 6: A performing logistic regression analysis of risk factors affecting patients with epilepsy.

Variables	**OR**	**CI 95%**
Gender [Male]	1.2	0.3 – 1.5
Age [61 – 70]	2.2	1.3 – 3.5
Marital status [Married]	1.4	0.9 – 4.6
Hypertension	0.6	0.2 – 0.9
Smoking	0.8	0.4 – 1.2
Diabetes	0.6	0.1 – 2.0
General Health	1.4	0.6 – 3.4
Sleep duration, [8 - 10] hours	0.7	0.4 – 1.0
Sleep disorder	0.4	0.3 – 0.7
Brain tumors	1.6	0.7 – 2.9

6. Discussion

The prevalence and incidence of epilepsy often vary with age, showing a bimodal distribution whereby the risk is highest among two specific age groups: the elderly and babies. Our study has also discovered that senior citizens are significantly more likely to develop epilepsy. [21 – 22]

The study's participants with epilepsy (PWE) were all > 20 years old, which may not accurately represent the prevalence of children and youngsters. In addition, due to the constraints on the included cases and the unequal age distribution, there could be bias in selection. [23]

Current reference to cross-sectional surveys with high sample sizes shows that little attention has been given to the mental health status as well as marital status of persons with epilepsy (PWE) [24]. As far as that is concerned, it was noted that never marrying was one of the riskiest factors for epilepsy, but having very good/good overall health acted as a protective one. As indicated in previous literature reviews, never marrying was identified as a major risk for epilepsy due to the following reasons. [25]

People that have epilepsy might feel like they are going through life in general shame due to experiencing seizures, which is unlikely to be free from doubt within themself, be isolated by other people as well as question the importance of their existence. According to another study that investigated the impact of epilepsy on life, 35 percent of those interviewed had hidden their condition from other people, fearing stigma, and 46 percent felt that the public should remain unaware. [26]

Sleep is crucial for human physical activity along with cognition yet sleep problems have emerged as an important global health issue. There are many kinds of sleep disturbances in patients with epilepsy, and the complicated relationship among sleep issues and epilepsy caused widespread concern. [27]

On the one hand, persons with epilepsy had longer REM (rapid eye movement) sleep latency as well as less REM sleep; nevertheless, greater non-REM sleep which leads to sleep-wake cycle disruptions and decreased sleep efficiency. On the contrary, sleep problems may have an impact on seizures, with sleep deprivation exacerbating seizures and making it difficult to fall asleep. [28]

Furthermore, some seizures mostly occur during sleeping. A German study of 220 adults with epilepsy found that the patients' sleep structures were disturbed. [29]

Another study examined 480 people who had partial seizures and discovered that the rate of sleep problems in PWE was twice that of controls. Consistent with prior study, our results revealed that no sleep issue was a risk factor for epilepsy. [30]

Conclusion

According to the clinical trials for epilepsy, advanced age plus having never married are high-risk factors, whereas general health is classified as very good, sparingly as protective against it. These findings are important for public health as they enable clinicians in formulating patient-centered interventions aimed at enhancing their well-being.

REFERENCES

1. Falco-Walter J, Scheffer I, Fisher R. The new definition and classification of seizures and epilepsy. Epilepsy Research. 2018;139:73–79.
2. Fisher R, et al. ILAE Official Report: A practical clinical definition of epilepsy. Epilepsia. 2014;55:475–482.
3. Fisher R, et al. Epileptic Seizures and Epilepsy: Definitions Proposed by the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE) Epilepsia. 2005;46:470–472.
4. Nunes V, Sawyer L, Neilson J, Sarri G, Cross J. Diagnosis and management of the epilepsies in adults and children: summary of updated NICE guidance. BMJ. 2012;344:e281–e281.
5. Singh A, Trevick S. The Epidemiology of Global Epilepsy. Neurologic Clinics. 2016;34:837–847.

6. De Boer H, Mula M, Sander J. The global burden and stigma of epilepsy. Epilepsy & Behavior. 2008;12:540–546.
7. Prilipko, L. Atlas Epilepsy care in the world 2005. (World Health Organization, 2005).
8. WHO. Epilepsy in The Who African Region: Bridging the Gap. (World Health Organization, 2004).
9. Tekle-Haimanot R, et al. Attitudes of rural people in central Ethiopia toward epilepsy. Social Science & Medicine. 1991;32:203–209.
10. Tekle- Haimanot R, et al. Community-Based Study of Neurological Disorders in Rural Central Ethiopia. Neuroepidemiology. 1990;9:263–277.
11. Wilson SJ, et al. Indications and expectations for neuropsychological assessment in routine epilepsy care: Report of the ILAE Neuropsychology Task Force, Diagnostic Methods Commission, 2013-2017. Epilepsia. 2015;56:674–81.
12. Sillanpää M, Schmidt D. Long-term outcome of medically treated epilepsy. Seizure. 2017;44:211–6.
13. Kwan P, Schachter SC, Brodie MJ. Drug-Resistant Epilepsy. N. Engl. J. Med. 2011;369:919–26.
14. Tefera GM, Woldehaimanot TE, Angamo MT. Poor treatment outcomes and associated factors among epileptic patients at Ambo Hospital, Ethiopia. Gaziantep Medical Journal. 2015;21:9–16.
15. Dua T, De Boer HM, Prilipko LL, Saxena S. Epilepsy care in the world: Results of an ILAE/IBE/WHO Global Campaign Against Epilepsy survey. Epilepsia. 2006;47:1225–31.
16. Scott RA, Lhatoo SD, Sander JW. The treatment of epilepsy in developing countries: Where do we go from here? World Heal. Organ. Bull. World Heal. Organ. 2001;79:344–51.
17. Jones RM, Butler JA, Thomas VA, Peveler RC, Prevett M. Adherence to treatment in patients with epilepsy: Associations with seizure control and illness beliefs. Seizure. 2006;15:504–8.
18. Mbuba CK, Ngugi AK, Newton CR, Carter JA. The epilepsy treatment gap in developing countries: A systematic review of the magnitude, causes, and intervention strategies. Epilepsia. 2008;49:1491–503.
19. Hovinga CA, et al. Association of non-adherence to antiepileptic drugs and seizures, quality of life, and productivity: Survey of patients with epilepsy and physicians. Epilepsy Behav. 2008;13:316–22.
20. Shen C, et al. Factors predictive of late remission in a cohort of Chinese patients with newly diagnosed epilepsy. Seizure. 2016;37:20–4.
21. Mohanraj R, Brodie MJ. Early predictors of outcome in newly diagnosed epilepsy. Seizure. 2013;22:333–44.
22. So, EL. Predictors of outcome in newly diagnosed epilepsy: Clinical, EEG and MRI. Neurol. Asia. 2011;16:27–9.
23. Sperling MR. The Consequences of Uncontrolled Epilepsy. CNS Spectr. 2004;9:98–109.
24. Laxer KD, et al. The consequences of refractory epilepsy and its treatment. Epilepsy Behav. 2014;37:59–70.
25. Fanta T, Azale T, Assefa D, Getachew M. Prevalence and factors associated with perceived stigma among patients with epilepsy in Ethiopia. Psychiatry journal. 2015;201:1–7.
26. Horne R, Weinman J, Hankins M. The beliefs about medicines questionnaire: The development and evaluation of a new method for assessing the cognitive representation of medication. Psychol. Health. 1999;14:1–24.
27. Mostafavi F, Najimi A, Sharifirad G, Golshiri P. Beliefs About Medicines in Patients with Hypertension: The Instrument Validity and Reliability in Iran. Mater. Socio. Medica. 2016;28:298.
28. Morisky DE, Green LW, Levine DM. Concurrent and predictive validity of a self-reported measure of medication adherence. Med. Care. 1986;24:67–74.
29. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Pub (2013).
30. Manford M. Recent advances in epilepsy. J. Neurol. 2017;264:1811–24.