RESEARCH
www.commprac.com
ISSN 1462 2815

A STUDY TO ASSESS THE LEVEL OF DEPRESSION AND QUALITY OF LIFE AMONG EPILEPSY PATIENTS

Cecyli. C [1]*, Swetha. R [2], Jagadeeswari J [3], Dayana B.A A [4] and Priyadarsini A [5]

[1,4] Assistant Professor, Department of Medical and Surgical Nursing,
Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu, India.
Email: [1]cecyli.scon@saveetha.com (*Corresponding Author), [4] dayana.scon@saveetha.com
ORCID ID: [1]https://orcid.org/0000-0001-5808-2350,
[2] B.Sc. (N) Final Year Student, Saveetha College of Nursing,
SIMATS, Chennai, India. Email: evangelineswetha023@gmail.com
[3] Assistant Professor, Department of Obstetrics and Gynecology Nursing,
Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu, India.
Email: jagadeeswari.scon@saveetha.com, ORCID ID: https://orcid.org/0009-0002-3710-712X
[5] Assistant Professor, Department of Child Health Nursing, Saveetha College of Nursing, SIMATS,
Thandalam, Chennai, Tamil Nadu, India. Email: priyadarsini.scon@saveetha.com

DOI: 10.5281/zenodo.11229707

Abstract

Introduction: Epilepsy may have significant negative effects on a person's quality of life in terms of their physical, social, and psychological well-being. Primary epilepsy and depression are well-known co-morbid mental conditions. Objective: Comparing depression and QOL among epilepsy patients visiting the epilepsy outpatient clinic was the aim of the current study. Methods: A Cross-sectional study with a total of sixty cases of primary epilepsy patients were recruited in the study, after informed consent. They were interviewed on the self-administered NIDDE and QOLIE-31 questionnaire while they were waiting in the epilepsy outpatient clinic. Patients with a score of over 14 were classified as depressed. Higher scores also denote better quality of life. SPSS version was used to analyze the results. Results: Sixty individuals were evaluated, and 32 (53.33%) had high likely depression and a middling quality of life was experienced by 40 people (66.66%). A negative connection between depression and quality of life is evident based on the estimated Karl Pearson's connection 'r' value of r = -0.365, which is statistically significant at the $p<0.01$ level. Conclusion: Patients with epilepsy reported moderate quality of life, and depression levels were high. Consequently, worse HRQOL was linked to depression ratings. Therefore, healthcare professionals should place more attention on patients who they consider to be stigmatized, who have a higher frequency of seizures, and who have a low degree of social support.

Keywords: Depression, Quality of Life, Epilepsy Patients.

INTRODUCTION

Spontaneous recurrent epilepsy is a chronic neurological disorder affecting 60 million people worldwide. It causes recurrent seizures affecting senses, cognition, mood, and motor function. Despite a thorough patient history, the exact cause remains unclear in half cases [1,2]. Epilepsy rates are higher in the youngest and oldest age groups, with men being slightly more likely than women [3]. Structural brain abnormalities increase the risk of developing epilepsy, which can be detected by neuroimaging and electro clinical assessments. **[**1] Epilepsy patients have a three-fold higher risk of dying than the general population due to various causes such as stroke, brain tumours, head injuries, and inherited genetic flaws. Anti-seizure drugs can cure 70% of patients, but psychiatric comorbidities are more common in epilepsy patients [4]. Depression affects 20-22% of epilepsy patients, with up to 60% in temporal lobe epilepsy [5,6,7]. Psychiatric illnesses are more common in epileptics, with depression affecting 25%-30% [8]. Anxiety is linked to focal/unknown and mesial temporal sclerosis epilepsy and frequently occurs without accompanying depression [9]. Depression is a common issue among epilepsy patients, often linked to suicidal thoughts[10]. This depression

is a significant indicator of low quality of life (QOL)[11,12]. Epilepsy significantly impacts quality of life, with anti-seizure drugs often causing side effects and resistance[13-15]. Poor adherence, self-management, stigma, and co-morbid disorders also negatively impact patients' QOL.[16] Psychological issues like anxiety, sadness, social stigma, lack of support, and unemployment also negatively impact QOL in adults with epilepsy[17,18]. Therefore, the purpose of the current study is to analyse the QOL of patients with epilepsy and descriptively assess the occurrence of depression in patients with epilepsy.

METHODOLOGY

A cross-sectional study was conducted on 60 patients with epilepsy at the OPD, aged 20 or older, had been diagnosed with epilepsy for over a year and receiving antiepileptic medications. Exclusion criteria included mental retardation, psychogenic non-epileptic episodes, alcoholism, serious psychotic disease, and recent seizures within two days of enrolment. The study recorded demographic information, medical histories of epilepsy patients, and their depression levels. It also documented the type of epilepsy, the number of anti-epileptic drugs taken, their side effects, and any prior epileptic surgery. Additionally, noted were the individuals' levels of depression and whether or not they were receiving therapy with antidepressants. The NDDI-E is a reliable tool for detecting major depressive disorder in epilepsy patients, with a score of 14 indicating probable depression. The QOLIE-31 questionnaire evaluates quality of life (QOL) in patients with epilepsy, with higher scores indicating greater HRQOL. This tool is used to assess patients' emotional well-being, social function, energy/fatigue, cognitive function, seizure fear, and pharmaceutical effects. About taking part in the study, the prospective participants were contacted. Participants were informed about the research's goals, procedures, risks, advantages, privacy protection, and withdrawal rights. Data was collected through interviews and questionnaires. SPSS 16 was used for data analysis, with descriptive statistics and chi-squared values used to relate depression and quality of life to demographic factors.

RESULTS AND DISCUSSION

Section A: Description of the demographic & clinical variables of the epilepsy patients.

Most of the patients with epilepsy, 21(35%) were aged between 41 – 50 years, 41(68.3%) were male, 47(78.3%) were married, 40(66.7%) were Hindus, 46(76.7%) belonged to nuclear family, 47(78.3%) were residing in urban area, 25(41.7%) had primary education and 33(55%) were employed privately. Of those with tonic-clonic seizures, 48 individuals (84%) had them. Compared to structural epilepsies, a larger proportion (70%) was accounted for by genetic and unknown epilepsies. Most (85%) were on one or more antiepileptic medications. 51 individuals (72%) reported having less than one seizure year.

Section B: Assessment of level of depression and quality of life among patients with epilepsy.

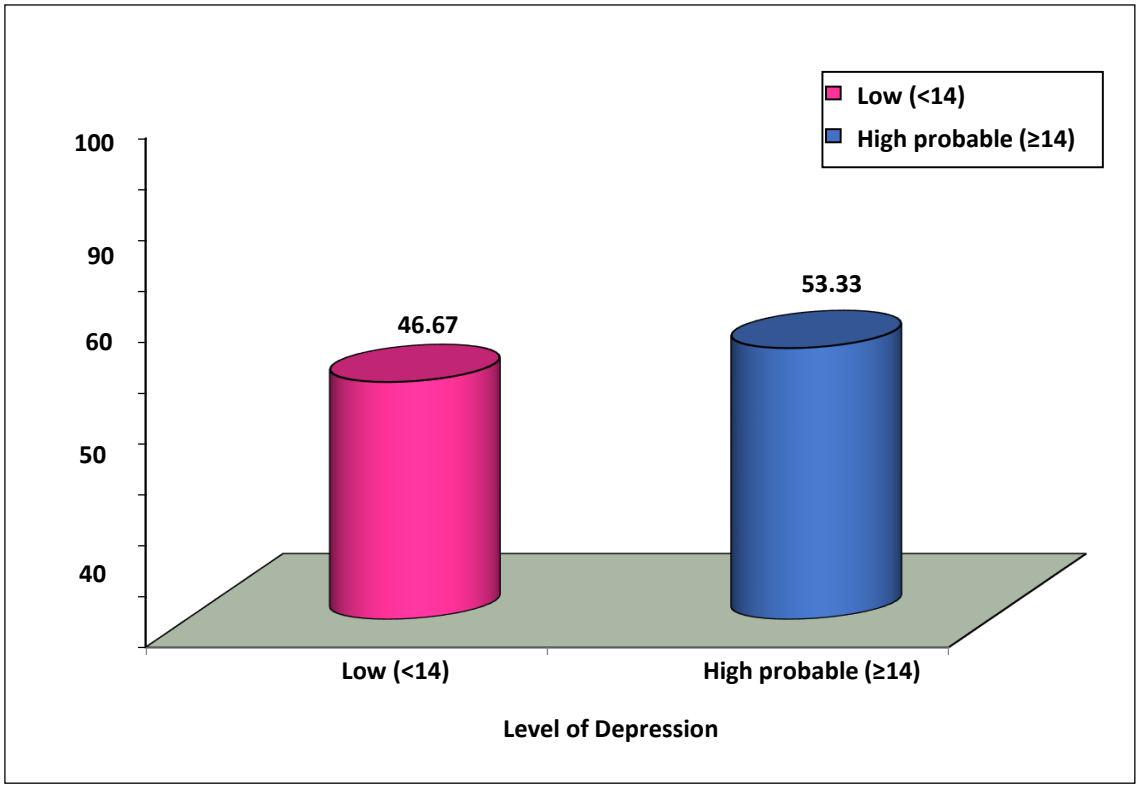

Figure 1: Percentage distribution of level of depression among patients with epilepsy

According to figure 1, Among patients with epilepsy, 32(53.33%) had high probable depression and 28(46.67%) had low depression.

To support our findings, a study a study that looked at the incidence of depressed symptoms revealed that depression is common in most adults i.e, 95 patients (63.3%) [19]. Similar to this, research has indicated that epilepsy sufferers are more likely than the general public to experience depression [20], and two recent patient surveys have further supported this finding [21]. PWE were more likely than the control group to exhibit depressive symptoms, according to a research by Izci et al. (2016) [22]. Additionally, study [23] found that a considerably larger proportion of PWE with an NDDI-E score of 15–24 (54% vs. 35%; $p < 0.0001$), which is suggestive of MDD symptoms, compared to controls.

Table 1: Frequency and percentage distribution of level of quality of life among patients with epilepsy.N = 60

Level of Quality of life	F	%
Poor (≤50%)	13	21.67
Moderate (51 – 75%)	40	66.66
Good (>75%)	7	11.67

The above table 1 shows that among patients with epilepsy after assessment of domains of QOLIE-31 scores (energy, Medication effects, emotional wellbeing, cognitive functioning, social functioning, seizure worry and overall QOL), found 40(66.66%) had moderately quality of life, 13(21.67%) had poor quality of life and 7(11.67%) had good quality of life.

A research was also created to pinpoint the causes of low quality of life in individuals with epilepsy discovered that they had a worse quality of life, with several contributing variables. Poor quality of life was significantly correlated with the prevalence of melancholy, stigma, and anxiety about having more seizures, in addition to the severity of the condition as indicated by the frequency of seizures and the patient's capacity to tolerate anti-seizure medication. [24]

Section C: Relationship between depression and quality of life of patients with epilepsy.

Table 2: Correlation between depression and quality of life among patients with epilepsy. N = 60

Variables	Mean	S.D	Karl Pearson's Correlation & p-value
Depression	14.90	3.82	r = -0.365
Quality of life	60.41	11.43	p=0.004, S**

**p<0.05, S – Significant

The table 2 depicts that the mean score of depression among patients with epilepsy was 14.90±3.83 and mean score of quality of life was 60.41±11.43. The calculated Karl Pearson's Correlation 'r' value of r =-0.365 shows a negative correlation between depression and quality of life which was statistically significantat p<0.01 level.

Similarly, Siarava et al. (2019) found that epilepsy patients had lower quality of life and higher rates of depression compared to healthy controls. [21] Agrawal et al. (2016) demonstrate that QoL and depression are correlated in individuals with epilepsy. [25] To support present study findings, Alsaadi et al. (2017) found HRQOL was substantially linked with depression and seizure freedom, followed by anxiety and antidepressant usage. (17) Bujan Kovač (2021) [26] reported Less severe depression symptoms were linked to higher QOL (p=0.000). In addition, A study found a strong correlation between Quality of Life (QOL) and depression, particularly among African Americans with epilepsy, with QOL being the only variable significantly correlated with depression symptoms, surpassing seizure frequency. [27].

Section D: Association of posttest level of depression and quality of life of epilepsy patients with selected clinical variables

The clinical variable seizure frequency (χ^2=4.499, p=0.034) had shown statistically significant association with level of depression among patients with epilepsy at p<0.05 level and the other demographic variables had not shown statistically significant association with level of depression among patients with epilepsy.

Similarly, a study found that seizure frequency and type were associated with depression in patients with epilepsy, while other demographic variables did not. However, there was no correlation found between depression and age, gender, epilepsy duration, educational attainment, epilepsy syndrome, or antiepileptic medications [19].

Clinical variable seizure medications (χ2=14.056, p=0.001) had shown statistically significant association with level of quality of life among patients with epilepsy at p<0.001 level and the other demographic variables had not shown statistically significant association with level of quality of life among patients with epilepsy.

Likewise, Seizure medications also showed a significant association with quality of life in patients with epilepsy. Those with epilepsy receiving ≥3 ASMs reported poorer health and difficulties in daily tasks. Previous research has also linked more ASMs to worse QOL. [28]

CONCULUSION

Epilepsy frequently coexists with other cognitive, physical, and psychiatric disorders, which can further impair a patient's ability to function in daily life, it's critical to consider the patient's whole health in addition to the effectiveness of AEDs or neurosurgery. This includes considering comorbidities, side effects, and overall quality of life. In this study, substantial levels of depression and a strong link between QOL and depression were discovered. It was advised that epilepsy patients must undergo monthly depression screenings to improve quality of life.

References

1) Scheffer, I. E., Berkovic, S., Capovilla, G., Connolly, M. B., French, J., Guilhoto, L., ... & Zuberi, S. M. (2017). ILAE classification of the epilepsies: Position paper of the ILAE Commission for Classification and Terminology. *Epilepsia*, *58*(4), 512-521.

2) Beghi, E. (2020). The epidemiology of epilepsy. *Neuroepidemiology*, *54*(2), 185-191.

3) Fiest, K. M., Sauro, K. M., Wiebe, S., Patten, S. B., Kwon, C. S., Dykeman, J., ... & Jetté, N. (2017). Prevalence and incidence of epilepsy: a systematic review and meta-analysis of international studies. *Neurology*, *88*(3), 296-303.

4) World Health Organization (WHO) epilepsy report; Key facts of epilepsy: February 8, 2018, Available at http://www.who.int/.

5) Josephson, C. B., & Jetté, N. (2017). Psychiatric comorbidities in epilepsy. *International review of psychiatry*, *29*(5), 409-424.

6) Strober, L. B., Chapin, J., Spirou, A., Tesar, G., Viguera, A., Najm, I., & Busch, R. M. (2018). Assessment of depression in epilepsy: the utility of common and disease-specific self-report depression measures. *The Clinical neuropsychologist*, *32*(4), 681-699.

7) de Araújo Filho, G. M., Martins, D. P., Lopes, A. M., de Jesus Brait, B., Furlan, A. E. R., Oliveira, C. I. F., ... & de Almeida, E. A. (2018). Oxidative stress in patients with refractory temporal lobe epilepsy and mesial temporal sclerosis: Possible association with major depressive disorder?. *Epilepsy & Behavior*, *80*, 191-196.

8) Asadi-Pooya, A. A., Kanemoto, K., Kwon, O. Y., Taniguchi, G., Dong, Z., Chinvarun, Y., ... & Park, S. P. (2018). Depression in people with epilepsy: How much do Asian colleagues acknowledge it?. *Seizure*, *57*, 45-49.

9) Clary, H. M. M., Snively, B. M., & Hamberger, M. J. (2018). Anxiety is common and independently associated with clinical features of epilepsy. *Epilepsy & Behavior*, *85*, 64-71.

10) Altura, K. C., Patten, S. B., Fiest, K. M., Atta, C., Bulloch, A. G., & Jetté, N. (2016). Suicidal ideation in persons with neurological conditions: prevalence, associations and validation of the PHQ-9 for suicidal ideation. *General hospital psychiatry*, *42*, 22-26.

11) Micoulaud-Franchi, J. A., Bartolomei, F., Duncan, R., & McGonigal, A. (2017). Evaluating quality of life in epilepsy: the role of screening for adverse drug effects, depression, and anxiety. *Epilepsy & Behavior*, *75*, 18-24.

12) Camara-Lemarroy, C. R., Hoyos, M., Ibarra-Yruegas, B. E., Díaz-Torres, M. A., & De León, R. (2017). Affective symptoms and determinants of health-related quality of life in Mexican people with epilepsy. *Neurological Sciences*, *38*, 1829-1834.

13) Akyüz, E., Köklü, B., Ozenen, C., Arulsamy, A., & Shaikh, M. F. (2021). Elucidating the potential side effects of current anti-seizure drugs for epilepsy. *Current neuropharmacology*, *19*(11), 1865..

14) Dwivedi, R., Tiwari, P., Pahuja, M., Dada, R., & Tripathi, M. (2022). Anti-seizure medications and quality of life in person with epilepsy. *Heliyon*, *8*(10)..

15) Alexander, H. B., Broshek, D. K., & Quigg, M. (2018). Quality of life in adults with epilepsy is associated with anticonvulsant polypharmacy independent of seizure status. *Epilepsy & Behavior*, *78*, 96-99.

16) Hopker, C. D. C., Berberian, A. P., Massi, G., Willig, M. H., & Tonocchi, R. (2017, March). The individual with epilepsy: perceptions about the disease and implications on quality of life. In *Codas* (Vol. 29). Sociedade Brasileira de Fonoaudiologia..

17) Alsaadi, T., Kassie, S., El Hammasi, K., Shahrour, T. M., Shakra, M., Turkawi, L., ... & Raoof, M. (2017). Potential factors impacting health-related quality of life among patients with epilepsy: results from the United Arab Emirates. *Seizure*, *53*, 13-17.

18) Malik, N. I., Fatima, R., Ullah, I., Atta, M., Awan, A., Nashwan, A. J., & Ahmed, S. (2022). Perceived stigma, discrimination and psychological problems among patients with epilepsy. *Frontiers in psychiatry*, *13*, 1000870..

19) Chandrasekharan, S. C., Menon, V., Wadwekar, V., & Nair, P. P. (2017). High frequency of depressive symptoms among adults with epilepsy: Results from a Hospital-based study. *Journal of neurosciences in rural practice*, *8*(S 01), S013-S019.

20) Mula, M., & Sander, J. W. (2016). Psychosocial aspects of epilepsy: a wider approach. *BJPsych open*, *2*(4), 270-274.

21) Siarava, E., Hyphantis, T., Katsanos, A. H., Pelidou, S. H., Kyritsis, A. P., & Markoula, S. (2019). Depression and quality of life in patients with epilepsy in Northwest Greece. *Seizure*, *66*, 93-98.

22) Izci, F., Fındıklı, E., Camkurt, M. A., Tuncel, D., & Şahin, M. (2016). Impact of aggression, depression, and anxiety levels on quality of life in epilepsy patients. *Neuropsychiatric disease and treatment*, 2595-2603.

23) Strzelczyk, A., Aledo-Serrano, A., Coppola, A., Didelot, A., Bates, E., Sainz-Fuertes, R., & Lawthom, C. (2023). The impact of epilepsy on quality of life: Findings from a European survey. *Epilepsy & Behavior*, *142*, 109179.

24) Siebenbrodt, K., Willems, L. M., von Podewils, F., Mross, P. M., Strüber, M., Langenbruch, L.,& Strzelczyk, A. (2023). Determinants of quality of life in adults with epilepsy: a multicenter, cross-sectional study from Germany. *Neurological Research and Practice*, *5*(1),41.

25) Agrawal, N., Bird, J. S., von Oertzen, T. J., Cock, H., Mitchell, A. J., & Mula, M. (2016). Depression correlates with quality of life in people with epilepsy independent of the measures used. *Epilepsy & Behavior*, *62*, 246-250.

26) Bujan Kovač, A., Petelin Gadže, Ž., Tudor, K. I., Nanković, S., Šulentić, V., Poljaković, Z. & Hajnšek, S. (2021). Quality of life in patients with epilepsy–single centre experience. *Acta clinica Croatica*, *60*(Supplement 3), 16-23.

27) McGee, R. E., Sajatovic, M., Quarells, R. C., Johnson, E. K., Liu, H., Spruill, T. M., ... & Thompson, N. J. (2019). Depression and quality of life among African Americans with epilepsy: Findings from the Managing Epilepsy Well (MEW) Network integrated database. *Epilepsy & Behavior*, *94*, 301-306.

28) Ehrlich, T., Reyes, A., Paul, B. M., Uttarwar, V., Hartman, S., Mathur, K., ... & McDonald, C. R. (2019). Beyond depression: The impact of executive functioning on quality of life in patients with temporal lobe epilepsy. *Epilepsy research*, *149*, 30-36.