

ORIGINAL ARTICLE

Quality of Life and Employment Among Patients with Epilepsy

Epilepsili Hastalarda Yaşam Kalitesi ve İstihdam

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ABSTRACT

Objective: Seizures significantly affect quality of life among patients with epilepsy while employment significantly contributes to the quality of life in general. Thus, in our study, we aimed to determine how the demographic and disease-related characteristics of patients with epilepsy impact quality of life and employment.

Material and Methods: Our sample included 202 patients who had been diagnosed with epilepsy for at least a year and admitted to the Neurology Polyclinic between October 2023 and March 2024. Data about patients' characteristics were collected using a sociodemographic information form while quality of life was measured using the Turkish Quality of Life in Epilepsy Inventory-31 (QOLIE-31).

Results: On average, patients were 29.07 ± 10.84 years old and had had epilepsy for 10.5 ± 8.92 years. Patients' lowest mean score on the QOLIE-31's subscales was for "Total Quality of Life" whereas their highest mean score was for "Social Function". The total quality of life score of patients with low education level and low income was found significantly lower. Among other results, patients with a seizure frequency of 6 or more per month had significantly lower scores on all subscales except "Emotional Well-Being", and patients with refractory epilepsy and/or receiving polytherapy had significantly lower total scores and scores on all subscales.

Conclusion: Our results indicate that employment does not significantly affect quality of life among patients with epilepsy whereas their clinical features do. Even so, physicians should take all conditions into account to ensure the highest-possible quality of life for patients with epilepsy.

Keywords: Employment, Epilepsy, Seizure, Quality of Life, QOLIE-31

ÖZ

Amaç: Nöbetler epilepsi hastalarında yaşam kalitesini önemli ölçüde etkilerken, istihdam da genel olarak yaşam kalitesine önemli ölçüde katkıda bulunmaktadır. Bu nedenle çalışmamızda epilepsi hastalarının demografik ve hastalıkla ilişkili özelliklerinin yaşam kalitesini ve istihdamını nasıl etkilediğini belirlemeyi amaçladık.

Gereç ve Yöntemler: Örneklemimize Ekim 2023 ile Mart 2024 tarihleri arasında Nöroloji Polikliniği'ne başvuran, en az bir yıldır epilepsi tanısı olan 202 hasta dahil edildi. Hastaların özelliklerine ilişkin veriler sosyodemografik bilgi formu kullanılarak toplandı. Yaşam kalitesi, Epilepside Yaşam Kalitesi Envanteri-31 (QOLIE-31) kullanılarak ölçüldü.

Bulgular: Hastalar ortalama $29,07 \pm 10,84$ yaşındaydı ve $10,5 \pm 8,92$ yıldır epilepsi hastasıydı. Hastaların QOLIE-31 alt ölçeklerinden en düşük ortalama puanları Toplam Yaşam Kalitesi, en yüksek ortalama puanları ise Sosyal İşlev alanındaydı. Eğitim düzeyi ve geliri düşük olan hastaların toplam yaşam kalitesi puanının anlamlı derecede düşük olduğu görüldü. Diğer sonuçların yanı sıra, nöbet sıklığı ayda 6 veya daha fazla olan hastaların Duygusal İyilik dışındaki tüm alt ölçeklerde anlamlı derecede düşük puanları vardı ve dirençli epilepsisi olan ve/veya politerapi alan hastaların tüm alt ölçeklerde puanları ve toplam puanları anlamlı derecede düşüktü.

Sonuç: Sonuçlarımız, epilepsi hastalarında çalışmanın yaşam kalitesini anlamlı derecede etkilemediğini ancak klinik özelliklerinin etkilediğini göstermektedir. Yine de hekimlerin epilepsi hastalarında mümkün olan en yüksek yaşam kalitesini sağlamak için tüm koşullarını dikkate alması gerekir.

Anahtar Kelimeler: İstihdam, Epilepsi, Nöbet, Yaşam Kalitesi, QOLIE-31

Introduction

Epilepsy is a brain disorder characterized by recurrent seizures that significantly impact quality of life, meaning "an individual's perception of his/her position in life in relation to his/her goals, expectations, standards and concerns in the context of the culture and value systems in which s/he lives" (1).

Although the principal goal of treatment for epilepsy is to stop seizures from occurring, health is not only the absence of disease or infirmity but also a state of complete physical, mental, and social well-being, at

least as defined by the World Health Organization (2). In this respect, patients with epilepsy not only experience seizures but may also experience emotional distress, low self-esteem, decreased social interaction, decreased job opportunities and problems with activities of daily living even if their seizures are well controlled (3).

Employment is a factor that determines social outcomes and contributes greatly to quality of life, especially for patients with epilepsy (4). Having a job not only facilitates financial independence but also

reinforces self-esteem and supports social functioning (5). However, epilepsy is a major cause of uncertainty about not only employment but also social interactions and may also impose limits on aspects of independent living, including driving (6).

A recent large, multicenter, cross-sectional study on determinants of quality of life among patients with epilepsy has shown that, for such patients, seizure frequency, tolerability of anti-seizure drug, depression, stigma, and concern about the recurrence of seizures are associated with relatively low quality of life (7). Beyond that, numerous international studies have examined employment-related variables among patients with epilepsy, including a survey of 262 patients with epilepsy at four epilepsy centers in the United States. According to their results, being younger, having a higher socioeconomic status, and having fewer comorbidities were associated with higher levels of employment (8). Meanwhile, another cross-sectional study has revealed that a higher level of education, having well-controlled epilepsy, and having good mental health are associated with greater employability among patients with epilepsy (9). Taken together, those findings indicate that epilepsy is not an insurmountable barrier to achieving a productive work life but that other socioeconomic variables are important as well.

Against that background, in our study we aimed to determine how the demographic and disease-related characteristics of patients with epilepsy from our clinic, gathered using through the QOLIE-31 questionnaire, affect their quality of life and employment, with the overarching goal of highlighting the potential benefits of incorporating such a tool in clinical practice.

Material and Methods

Research Design and Sample

In our descriptive study, we aimed to determine the quality of life and employment status of patients with epilepsy as well as conditions related to those factors. Our sample consisted of 202 patients at least 18 years old who had been diagnosed with epilepsy for at least a year and admitted to XXXX between October 2023 and March 2024.

Data Collection Tools

To collect data, we used a sociodemographic information form and the Quality of Life in Epilepsy Inventory-31 (QOLIE-31), a scale that developed by the researchers in light of the literature. All data were collected via face-to-face interviews that lasted approximately 10 min each. The interviews were conducted by senior residents.

Sociodemographic Information Form

For data about participants' age, sex, income level, occupation, marital status, level of education, employment status, comorbidity status, years diagnosed with epilepsy, age at first seizure, seizure frequency, seizure type, seizure control, and type of treatment used, we used a sociodemographic

information form consisting of 19 items.

Quality of Life in Epilepsy Inventory-31 (QOLIE-31)

The QOLIE-31 contains 31 of the 89 items on the Turkish version of the QOLIE-89, whose validity and reliability were determined by Mollaoğlu et al (10) The QOLIE-31 does not include any SF-36 items on the QOLIE-89 or items regarding symptoms not specific to epilepsy (e.g., pain). That is, the QOLIE-31's items concern epilepsy and epilepsy-related issues only. Its seven subscales contain 30 items in total: Seizure Worry (i.e., 5 items), Emotional Well-Being (i.e., 5 items), Energy/Fatigue (i.e., 4 items), Social Function (i.e., 5 items), Cognitive Function (i.e., 6 items), Effects of Medications (i.e., 3 items), and overall quality of life (i.e., 2 items). The 31st item, which gives the QOLIE-31 its name, assesses overall health status. Altogether, scores on the QOLIE-31 range from 0 to 100, and a higher score reflects a higher quality of life. Cronbach's alpha of the original scale was 0.91 and in our study it was 0.91.

Statistical Analysis

The statistical analysis of the data was performed in the Statistical Package for Social Sciences version 22.0. Whether the data conformed to normal distribution was evaluated with the Shapiro–Wilk test on normal distribution graphs developed by examining skewness and kurtosis coefficient values together. Descriptive statistics (i.e., number, percentage, and mean) were used to evaluate the data, and an independent sample t test and ANOVA were used to analyze normally distributed variables, whereas the Kruskal–Wallis test was used for non-normally distributed variables. All p values less than .05 were considered to indicate statistical significance.

Ethical Considerations

Ethics approval for the study was obtained from Harran University's Non-Interventional Clinical Research Ethics Committee (HRÜ/23.19.24) while the necessary institutional permissions were obtained from the hospital where the study was conducted. Permission to use the scales was obtained from the researchers who validated the Turkish versions of the scale used in the study. Patients who agreed to participate in the study were informed about the study and told that their participation was voluntary, and their written consent was obtained.

Results

Of the 202 patients with epilepsy who participated in the study, 50.5% were female, and 49.5% were male. On average, they were 29.07 ± 10.84 years old (range: 18–77) and had had epilepsy for 10.5 ± 8.92 years, with seizures beginning at the age of 17.0 ± 13.34 years on average. Regarding the level of education, 59.4% of the patients had at least a high school degree.

Although 28.2% of patients reported not having any seizures in the past year, 10.4% reported having more than 6 seizures per month. When the patients were evaluated according to seizure control, 76.7% were in the well-controlled epilepsy group and 23% were in

Table 1. Demographic and clinical characteristics of epilepsy patients

	Patients n (%)	
Gender		
Female	102 (50.5)	
Male	100 (49.5)	
Marital status		
Married	91 (45.0)	
Single	111 (55.0)	
Level of education		
Uneducated	38 (18.8)	
Primary Education	44 (21.8)	
High School and Above	120 (59.4)	
Profession		
Housewife		
Worker/Tradesman	46 (30.2)	
Officer	44 (22.8)	
Farmer	12 (21.8)	
Student	5 (5.9)	
Not Working	22 (2.5)	
	73 (69.8)	
Have you considered working?		
Yes	83 (41.1)	
No	116 (58.9)	
Have you applied for a job?		
Yes	62 (30.7)	
No	140 (69.3)	
Employment status		
Full Time	50 (24.8)	24.8
Part Time	11 (5.4)	5.4
Unemployed	119 (58.9)	58.9
Other	22 (10.9)	10.9
Income level		
Income less than expenses		
Income equals expenses	123 (60.9)	60.9
More income than expenses	48 (23.8)	23.8
	31 (15.3)	15.3
Comorbidity		
Yes	64 (31.7)	31.7
No	138 (68.3)	68.3
Family history of epilepsy		
Yes		
No	35 (17.3)	17.3
	167 (82.7)	82.7
Seizure frequency		
No Seizures in the last year		
1-5 /Month	57 (28.2)	28.2
6 or >6/Month	124 (61.4)	61.4
	21 (10.4)	10.4
Epilepsy type (Onset)		
Fokal		
Generalized	56 (27.7)	27.7
Unknown	100 (49.5)	49.5
	46 (22.8)	22.8
Number of ASM taken		
Monotherapy	109 (54.0)	54.0
Polytherapy	93 (46.0)	46.0
Seizure control		
Uncontrolled	47 (23.3)	23.3
Controlled	155 (76.7)	76.7
Use of vehicles		
Yes	56 (27.7)	27.7
No	146 (72.3)	72.3

ASM: anti-seizure medication

Table 2. Quality of Life in Epilepsy-31 (QOLIE-31) scale average scores of epilepsy patients

	Number of Items	Min-Max	Mean	Sd
Seizure Worry	5	0-96	45.00	20.81
Overall Quality of Life	2	1-55	33.54	10.21
Mood	5	0-96	52.23	13.09
Energy/Fatigue	4	0-90	43.14	15.44
Cognition	6	16-100	63.99	16.01
Medication Effects	3	0-100	65.82	24.49
Social Function	5	0-100	67.82	21.47
Total	30	12.4-84.9	54.80	12.91

Min: minimum, max: maximum, Sd: standard deviation

the refractory epilepsy group. While 49.5% of patients had generalized seizures and 27.7% had focal seizures, 54.0% were receiving monotherapy and 46% were receiving polytherapy. Table 1 presents these and other demographic and clinical characteristics of the patients.

Table 2 shows the patients' mean scores on the QOLIE-31. Their lowest mean score on the QOLIE-31's subscales was for Total Quality of Life, whereas their highest mean score was for Social Function.

Next, Table 3 allows a comparison of the sociodemographic and clinical characteristics of the patients in the light of their mean subscale scores on the QOLIE-31. Considering sociodemographic characteristics, 18–25-year-old patients and female patients received significantly lower scores on the Seizure-Related Concerns subscale than all other groups ($p = .049$ and $p = .005$, respectively). Scores on the Total Quality of Life subscale among unmarried patients were significantly lower than among married ones ($p = .029$). Considering level of education, scores for Seizure-Related Concerns, overall quality of life, Energy/Fatigue, Cognitive Function, and Social Function, and Total Quality of Life were significantly lower among patients with lower levels of education ($p < .05$). As for socioeconomic status, 69.8% of patients were unemployed, and 60.9% reported having an income that was less than their expenses. Unemployed patients had significantly higher scores on the Emotional Well-Being subscale than other groups, while patients with lower income had significantly lower scores. Moreover, low-income patients had significantly lower Energy/Fatigue and total quality of life scores ($p < .05$). Last, regarding the use of vehicles, patients who did not drive got significantly lower scores on all subscales except Effects of Medication ($p < .05$).

When we evaluated the patients according to their clinical characteristics, we observed that patients with a seizure frequency of 6 or more per month had significantly lower scores on all subscales except Emotional Well-Being ($p < .05$). Patients with refractory epilepsy and patients receiving polytherapy had significantly lower scores on all subscales and Total Quality of Life ($p < .05$).

Table 3. Socio-demographic and clinical characteristics of participants and QOLIE-31

Variables	Seizure Worry	Overall Quality of Life	Mood	Energy/Fatigue	Cognition	Medication Effects	Social Function	Total
Age								
18-25	41.4± 19.8	32.3± 10.2	50.3± 13.5	42.1± 15.6	63.0± 16.0	65.1± 23.7	66.5± 23.1	53.4± 13.7
26-35	46.2± 22.4	34.1± 10.7	51.4± 13.2	42.9± 15.4	63.2± 17.3	64.1± 26.0	68.1± 21.6	54.6± 13.1
35-77	50.6± 18.9	35.1± 9.0	57.6± 10.2	45.5± 15.0	67.2± 13.5	70.1± 23.5	70.0± 17.5	58.0± 10.0
p-value	0.049	0.299	0.009	0.487	0.333	0.433	0.686	0.156
Gender								
Female	40.9± 22.4	32.9± 10.3	50.7± 13.7	41.1± 14.6	63.5± 16.7	62.9± 25.7	65.5± 23.0	53.2± 13.6
Male	49.1± 18.2	34.1± 10.1	53.8± 12.2	45.1± 15.9	64.4± 15.2	68.8± 22.8	70.1± 19.6	56.3± 12.0
p-value	0.005	0.421	0.093	0.067	0.680	0.087	0.137	0.085
Marital status								
Married	47.5± 20.3	35.0± 9.7	54.1± 12.6	44.2± 15.0	66.3± 15.2	67.8± 23.6	70.9± 19.4	56.9± 11.7
Single	42.95± 21.0	32.3± 10.4	50.6± 13.2	42.2± 15.7	62.3± 16.4	64.1± 25.1	65.2± 22.7	53.0± 13.5
p-value	0.122	0.060	0.059	0.342	0.054	0.295	0.063	0.029
Level of education								
Uneducated	36.8± 21.9	27.9± 11.4	47.7± 15.6	36.9± 25.9	56.4± 16.0	62.6± 24.2	54.7± 27.2	47.0± 14.6
Primary education	51.0± 20.2	33.4± 10.6	52.7± 10.5	44.8± 15.4	63.5± 14.7	69.0± 24.4	70.3± 16.5	56.0± 9.9
High school and above	45.3± 19.9	33.3± 9.0	53.4± 12.8	44.4± 14.9	66.5± 15.8	65.6± 24.6	71.0± 19.5	56.7± 12.4
p-value	0.008	0.001	0.063	0.023	0.003	0.494	0.001	0.001
Employment status								
Yes	44.0± 21.5	32.9± 10.5	50.9± 13.2	41.7± 14.5	62.8± 16.4	65.0± 24.1	67.1± 22.5	53.8± 13.3
No	47.0± 19.1	34.9± 9.3	55.2± 12.3	46.3± 17.1	66.6± 14.8	67.6± 25.3	69.3± 18.1	57.0± 11.6
p-value	0.349	0.202	0.030	0.055	0.125	0.494	0.501	0.098
Income level								
Income less than expenses	49.8± 13.0	40.4± 15.2	62.9± 15.7	64.8± 23.4	64.8± 23.4	66.5± 23.4	66.5± 21.4	53.2± 12.7
Income equals expenses	55.3± 13.9	47.3± 16.2	63.1± 17.5	63.1± 17.5	64.1± 26.4	64.1± 26.4	66.3± 22.5	55.4± 13.8
More income than expenses	56.7± 9.8	47.4± 12.7	69.5± 13.6	69.5± 13.6	72.2± 25.0	72.2± 25.0	75.0± 18.8	59.8± 10.7
p-value	0.485	0.067	0.005	0.007	0.109	0.284	0.129	0.035
Comorbidity								
Yes	41.1± 21.4	29.9± 11.1	50.8± 15.5	40.3± 15.5	59.1± 16.4	62.1± 26.3	60.7± 25.4	50.5± 14.4
No	46.7± 20.3	35.2± 9.3	52.8± 11.8	44.4± 11.8	66.2± 15.35	67.5± 23.4	71.1± 18.5	56.7± 11.6
p-value	0.074	0.001	0.293	0.076	0.003	0.147	0.001	0.001
Seizure frequency								
No seizures in the last year	54.1± 22.5	36.8± 10.6	54.2± 13.5	47.5± 16.0	67.9± 17.9	70.6± 26.2	75.3± 21.8	59.6± 13.2
1-5 /month	43.4± 18.4	32.9± 9.3	52.1± 12.2	42.0± 14.2	64.2± 13.5	67.4± 20.7	67.0± 19.1	54.4± 11.1
6 or >6/month	29.2± 17.6	27.8± 11.3	47.4± 15.9	37.3± 18.3	51.7± 18.6	42.9± 28.4	52.0± 24.9	44.0± 15.1
p-value	0.001	0.001	0.123	0.016	0.001	0.001	0.001	0.001
Epilepsy type (onset)								
Fokal	46.7± 22.0	34.1± 9.5	53.3± 11.2	41.7± 13.2	67.4± 15.8	69.0± 24.0	68.9± 19.7	56.2± 12.3
Generalized	44.0± 19.8	34.4± 9.2	52.0± 12.5	43.1± 14.9	65.4± 14.7	66.7± 24.6	70.1± 20.2	55.7± 12.0
Unknown	44.8± 21.7	30.9± 12.6	51.3± 16.0	44.7± 18.8	56.6± 16.9	59.8± 24.1	61.4± 25.0	50.9± 14.8
p-value	0.739	0.134	0.730	0.624	0.001	0.143	0.068	0.071
Number of ASM taken								
Monotherapy	50.8± 18.6	37.0± 8.3	54.6± 11.6	45.1± 14.6	67.9± 15.2	70.8± 24.0	74.5± 16.9	59.0± 11.0
Polytherapy	38.1± 21.1	29.3± 10.6	49.3± 14.0	40.7± 16.1	59.4± 15.7	59.8± 23.4	59.9± 23.5	49.8± 13.2
p-value	0.001	0.001	0.004	0.004	0.001	0.001	0.001	0.001
Seizure control								
Uncontrolled	28.4± 17.0	24.4± 11.0	45.9± 14.8	36.4± 17.0	52.8± 13.2	51.7± 26.4	47.2± 22.3	42.7± 11.8
Controlled	50.0± 19.2	36.2± 8.2	54.1± 11.9	45.1± 14.3	67.3± 15.2	70.0± 22.2	74.05± 16.9	58.4± 10.8
p-value	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Use of vehicles								
Yes		36.7± 8.7	57.0± 12.8	47.4± 16.5	68.8± 16.7	69.9± 26.2	76.5± 17.9	60.2± 12.0
No	51.4± 19.9		50.4± 12.7	41.5± 14.7	62.1± 15.3	64.2± 23.7	64.4± 21.8	52.7± 12.6
p-value	0.006	0.005	0.001	0.015	0.007	0.135	0.001	0.001

Discussion

Using QOLIE-31, the Turkish version of an epilepsy-specific questionnaire, we examined the quality of life and employment status of patients with epilepsy and the factors affecting these conditions. Our results identified several factors that significantly impact the quality of life of patients with epilepsy, including marital status, level of education, income level, driving and frequency of seizures, seizure control and number of anti-seizure drugs. Patients received the lowest score for on the Total Quality of Life subscale and the highest on the Social Function subscale. Regarding these aspects, the management of patients experiencing physical and psychosocial difficulties is possible with appropriate recommendations regarding psychological, social, and medical care (11).

Patients' sociodemographic characteristics can affect their quality of life. In our study, despite no significant difference in Total Quality of Life scores between younger participants and females, both groups received significantly lower scores for Seizure-Related Anxiety. Although multiple studies have shown that being female is a significant determinant of low quality of life (12, 13), multiple studies have also not observed that relationship (14, 15). These mixed results may indicate some intercultural differences between countries, for being female can be an important predictor of poor quality of life in countries where health and social care for females is inconsistent. Even so, poorer quality of life among females with epilepsy has also been reported in developed countries, which likely reflects some biological and psychosocial factors affecting their quality of life (13). Studies evaluating age's effect on quality of life have also produced conflicting results. In addition to studies showing that patient age is negatively related to quality of life (16), other studies have also shown that the health-related quality of life of people with epilepsy does not depend on age, as in our study (17, 18).

It has additionally been documented that patients with epilepsy have lower levels of education and income and experience relative difficulty in securing employment (19). A low level of education is indeed associated with unemployment (9). A study comparing the quality of life between patients with epilepsy and healthy controls in the same environment, with the same social relationships, and under the same living conditions showed a lower level of education, higher unemployment rate, higher unskilled employment rate and lower income among patients than controls (20). In our study, patients' scores for Seizure-Related Concerns, Total Quality of Life, Energy/Fatigue, Cognitive Function, Social Function, and total quality of life were significantly lower among patients with lower levels of education. However, the relationship between employment status and quality of life remains controversial in the literature. Although some studies have revealed that employment status is a primary factor affecting quality of life (21, 22), others have shown that socioeconomic status does not predict quality of life (23).

In a literature review of 95 articles reporting the employment status of people with epilepsy, an average employment rate of 58% was found (24). Employment makes a major contribution to the quality of life of people with epilepsy (4), because having a job not only facilitates financial independence but also reinforces self-esteem and supports social functioning (25). Even so, the 69.8% of patients who were unemployed in our study had significantly higher scores on the Emotional Well-Being subscale than all other groups. However, 60.9% of those patients also stated that their income was less than their expenses, and patients with low income had significantly lower Energy/Fatigue and Total Quality of Life scores. Although the mean Total Quality of Life and all subscale scores for unemployed patients with epilepsy were lower than for patients with epilepsy working in any job, the effect of employment status on quality of life did not make a significant difference as in the past research (23). Especially in the province where our study was conducted, unemployment and low income are common in the general population(26), which may explain why employment status did not significantly affect reported quality of life among the patients in our study.

The factors with the most significant impact on quality of life in our study were clinical features. It is suggested in the literature that polytherapy negatively affects the quality of life of patients with epilepsy and that the quality of life scores of patients receiving polytherapy are less than those of patients receiving monotherapy (23). In particular, Taskiran et al. (27) found a negative correlation between drug use and quality of life but also found that freedom from seizures was a positive factor affecting quality of life.

The literature demonstrates a lack of consensus about the effects of monotherapy and polytherapy on quality of life (28). Some studies have shown that the increased use of anti-seizure drugs or polytherapy is associated with decreased health-related quality of life (28) whereas others have not proven any association (15). In a recent study, the number of anti-seizure drugs was found to predict quality of life among patients with epilepsy, and the more anti-seizure medications taken by the patients, the lower their scores for Total Quality of Life (29). In our study, patients with refractory epilepsy and/or receiving polytherapy had significantly lower scores than other patients on all subscales. In terms of pharmacotherapy, our study revealed that patients taking two or more anti-seizure drugs had lower quality of life scores than ones receiving monotherapy. Accordingly, along with the adverse effects of anti-seizure drugs(30), the number of different anti-seizure drugs used by each patient should be carefully considered when making decisions about treatment. Our results also confirm that poor seizure control combined with a high frequency of seizures is significantly associated with poor quality of life. Patients who had not had a seizure in the past year had the highest score for Total Quality of Life and highest scores on all subscales. In a recent study,

people with epilepsy taking three or more anti-seizure drugs reported poorer health and were more likely to have difficulty performing daily activities than ones taking only two anti-seizure drugs (31). Previous studies have also suggested that a greater number of anti-seizure drugs is associated with worse quality of life, possibly due to an increased risk of multidrug-related side effects (32, 33). Since patients with well-controlled epilepsy have been shown to have a quality of life similar to control participants (34), and frequency of seizures is a key factor influencing quality of life (35), the higher number of seizures may contribute to patients' poorer quality of life.

Possible causes of poorer quality of life due to a higher frequency of seizures include seizure-related injuries, fear of new seizures, and limitations in daily life, including driving (7). This may also be due to taking more anti-seizure medications to reduce the frequency and severity of seizures, resulting in the potential for more side effects. (7).

In some countries, having a driver's license and transportation to work are important factors affecting employment (36). Driving restrictions have been shown to carry social stigma and limit the employment of patients with epilepsy, regardless of seizure status (37). In a study evaluating the chief variables affecting quality of life among patients with epilepsy, patients who did not drive in their daily lives had lower scores for quality of life and some subscales (i.e., Emotional Well-Being, Energy/Fatigue, Cognitive Function, and Social Function) (29) In our study, besides driving, patients who did not drive had significantly lower scores on all subscales except Effects of Medication. The purpose of driving restrictions for patients with epilepsy is public as well as personal safety; however, the same restrictions also prevent patients with seizures from socializing, being employed, and maintaining self-confidence. The freedom to drive has indeed been recognized as an important determinant of social independence and quality of life among patients with epilepsy (38).

Limitations

Although our sample was formed in a third-level epilepsy clinic, our results are not sufficient for generalization due to the study's sample size and cross-sectional nature. More comprehensive multicenter studies are therefore needed on the subject.

Conclusion

Our study has shown that clinical characteristics such as seizure frequency, seizure control, and the number of anti-seizure drugs used have a more significant impact on quality of life than sociodemographic characteristics. The goal of treatment for epilepsy is to control seizures. However, in chronic diseases such as epilepsy, it is also important to consider the conditions accompanying patients in order to ensure the highest-possible quality of life. The use of validated measurement tools, including the QOLIE-31, to assess quality of life among patients with epilepsy should become routine clinical practice even if challenging.

Information collected in that way can tailor treatment for those patients and improve outcomes by illuminating the impact of the disease and other modifiable factors in daily life.

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Conflict of interest

The authors have stated explicitly that there are no with this any financial support or relationships that may pose potential conflict of interest in this article.

Ethical Considerations & Disclosure

The study was approved by the Ethics Committee of Harran University's Faculty of Medicine (HRU/23.19.24).

Authors' Contributions

TGD: Data curation, Methodology, Conceptualization, Formal Analysis, Writing – original draft.

SH: Investigation, Methodology, Supervision, Validation.

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