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Assessment of quality of life in patients with epilepsy

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ABSTRACT

BACKGROUND & OBJECTIVE: Epilepsy is a chronic brain disorder that negatively impacts health, emotional state, social abilities, and quality of life. The study determines QoL in individuals with epilepsy to support patient-centred care.

METHODOLOGY: We conducted an analytical cross-sectional study at Lahore General Hospital among epileptic patients aged 18-35 years. Before data collection, an ethical approval letter, UIPH/UOL/849/2024, was obtained from The University of Lahore (approval number: ECM#2023-703), and the study was completed within six months. We analyzed data from 385 participants, selected via convenience sampling, using SPSS 26.0 based on QOLIE-10 responses. We used the chi-square test to assess QoL in patients with epilepsy.

RESULTS: Of 385 participants, most (38.7%) were aged 21–24 years; 63.1% were male, and 61.0% resided in rural areas. Regarding seizures, 62.9% had >10 seizures in the past year, while only 6.8% were seizure-free. QoL outcomes were 53.5% poor, 42.9% moderate, and 3.6% good. Rural residents had significantly poorer QoL (60.4%) than urban residents (42.7%; $p = 0.002$).

CONCLUSION: Improving quality of life among patients with epilepsy may require improved access to healthcare, particularly in underserved and rural populations, along with patient education and appropriate psychological support. An integrated approach addressing patients' medical, psychological, and social needs may help improve epilepsy-related quality of life.

KEYWORDS: Epilepsy, Quality of Life, Seizures, Psychological Distress, Social Stigma, Neurological Disorders.

INTRODUCTION

Epilepsy appears as a chronic neurological condition because recurrent brain seizures occur in human brains and result from abnormal brain electrical patterns, affecting 65 million individuals worldwide^[1]. This makes epilepsy one of the major neurological disorders globally. Epilepsy produces extensive effects because the condition bars people from employment activities, academic work, and vehicle operation while also blocking participation in social environments^[2]. The medical field has not accomplished the elimination of epilepsy as an illness that affects the body and creates a major impact on patients' physical and social well-being. Patients who have epilepsy face difficult situations that extend beyond physical manifestations because their emotional control and mental abilities decline, which restrains them from engaging fully at work and socially while compromising their financial options^[2]. Professionals have increasingly recognized the importance of quality-of-life measures in epileptic patient care over the last few years. Historically, doctors primarily assessed treatment success by reductions in seizures and improved

medication use. The biomedical approach fails to demonstrate the complete picture of daily obstacles experienced by epileptic patients. Epileptic patients who receive good seizure control often still face ongoing psychological pain, together with medication side effects, as well as difficulties with work and social discrimination. Assessments that capture epilepsy's full impact on quality of life provide a more complete understanding, helping healthcare providers develop better clinical options and informing government recommendations^[3].

Healthcare professionals have established and validated numerous QoL assessment tools for epilepsy patients over the past several decades. The measurement tools relating to epilepsy QoL assessment consist of general and illness-specific instruments such as the Seizure Severity Scale and Impact of Epilepsy Scale, Liverpool Seizure Severity Scale, and Hospital Anxiety and Depression Scale^[4].

These evaluation tools are utilized in medical trials and healthcare environments to analyze the effects on patients' physical abilities, together with their emotional states and their capabilities in social settings and cognitive functions.

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Alongside traditional QoL measures, researchers have included patient-led evaluations, which allow participants to identify their most significant epilep-sy-related quality-of-life areas. The standardized application of these measures faces obstacles when used across cultural settings and epileptic patient groups, particularly among children with severe epilepsy syndromes^[5].

Multiple important factors require evaluation of QoL in patients diagnosed with epilepsy. The condition of epilepsy produces ongoing consequences that affect patients through emotional well-being, alongside their social abilities and self-confidence, and economic capability^[6]. Epi-leptic patients commonly develop depression together with anxiety because they live with unpre-dictable seizures while fearing social discrimination. The stigma experienced by people with epi-lepsy creates similar negative outcomes to their medical condition by causing them to avoid social interactions and delay seeking healthcare. Medical professionals should integrate QoL measure-ments into epilepsy care because they reveal mental health and social wellness problems that or-dinarily remain unidentified^[7].

Epilepsy is a prevalent neurological disorder in Pakistan, yet its impact on patients' quality of life (QoL) remains underexplored. While many individuals with epilepsy suffer from seizures, psy-chological distress, and social stigma, comprehensive studies assessing the quality of life in this population are limited. Cultural beliefs, misconceptions, and socioeconomic challenges in Paki-stan exacerbate the struggles faced by epilepsy patients, including discrimination, limited em-ployment opportunities, and a lack of access to appropriate care. By using a validated tool like the QoLIE-10, this research aims to assess how epilepsy affects various aspects of life, including emotional, social, and physical well-being. The findings will fill a critical gap in the literature and provide essential insights to inform healthcare practices, public health policies, and awareness campaigns. Ultimately, the study seeks to improve patient care and enhance the lives of those living with epilepsy in Pakistan.

METHODOLOGY

An Analytical cross-sectional design was used to assess the quality of life of epileptic patients in La-hore, focusing on data collected from the Neurological Department of Lahore General Hospital. An ethical approval letter UIPH/UOL/849/2024 was obtained before data collection, and the QoLIE-10P scale was used to assess quality of life in epileptic patients. The study was conducted from October 2024 to March 2025. A required sample size was calculated using the single population proportion for-mula, $n = Z^2p(1-p)/d^2$, where a 95% confidence level ($Z = 1.96$), an expected propor-tion of 50% ($p = 0.50$), and a 5% margin of error ($d = 0.05$) were used. This yielded a minimum sample size of 384 participants, which was rounded to 385. Participants were determined and selected through convenience sampling to collect data from the target population.

Participants who had been clinically diagnosed with epilepsy, were aged between 18 and 35 years, and had

experienced the condition for a minimum of six months were included in the study. Individuals with morbid neurological disorders, a recent history of substance abuse, preg-nancy, or unstable medical conditions at the time of data collection were excluded. The QOLIE-10P scale was used to assess the quality of life in epileptic patients [8]. The QoLIE-10P consists of 10 items scored 1-5, with total scores ranging from 10 (best) to 50 (worst); higher scores indicate poorer quality of life. Based on published cut-offs, scores were categorized as good (11-20), moderate (21-24), and poor (35-50).

Ethical approval was obtained from the Institutional Review Board of The University of Lahore and the hospital's ethics committee to ensure the ethical conduct of the research. This procedure involved the distribution of structured questionnaires among the epileptic patients. Informed consent was ob-tained from the participants before the distribution of questionnaires. We assured participants of the confidentiality of their responses. Data were analyzed using SPSS version 26. To determine the associ-ation between demographic and clinical characteristics and the quality of life of epileptic patients, the chi-square test was applied.

RESULTS

Data from 385 epileptic patients at Lahore General Hospital revealed that most were aged 21-24, males (63.1%), and from rural areas (61.0%). Many were on antiepileptic drugs (AEDs) (47.0%), and 62.9% had over 10 seizures in the past year, with only 6.8% seizure-free. QoL was poor in 53.5% of patients, moderate in 42.9%, and good in only 3.6%.

Table- I: Overall quality of life of epileptic patients.

Categories	n (%)
Good quality	14 (3.6)
Moderate quality	165 (42.9)
Poor quality	206 (53.5)
Total	385 (100)

According to this research, most of the participants ($n=206$, 53.5%) had poor quality of life, $n=14$ (3.6%) had good quality of life, and $n=165$ (42.9%) had moderate quality of life.

The study examined the association between demographic and clinical characteristics and quality of life (QoL) among 385 patients with epilepsy. No significant relationship was found between epilepsy duration ($p=0.774$). While those on monotherapy reported better QoL than those on multiple AEDs, the association was not statistically significant ($p=0.053$). Patients with fewer seizures over the past year had better QoL ($p=0.008$), and those with controlled or improving clinical status also reported higher QoL ($p=0.001$). Seizure frequency during recent follow-ups further impacted QoL ($p=0.001$), with seizure-free individuals or those with minimal seizures showing better outcomes. These findings emphasize the importance of consistent seizure man-agement and regular follow-up in enhancing the QoL of epilepsy patients, as given in Table- II.

Table- II: Association of demographic and clinical characteristics with quality of life among epileptic patients.

Variables	Categories	Good to Moderate Quality n(%)	Poor Quality n(%)	Total n(%)	P-value
Gender	Male	119 (31)	124 (32.2)	243 (63)	0.242
	Female	60 (16)	82 (21.3)	142 (37)	
Age (years)	21–24	72 (19)	77 (20)	149 (39)	0.823
	25–29	59 (15.3)	69 (18)	128 (33)	
	30–35	48 (12.5)	60 (16)	108 (28)	
Residency	Rural	93 (24.2)	142 (37)	235 (61)	<0.001
	Urban	86 (22.3)	64 (16.7)	150 (39)	
Number of AEDs	Monotherapy	41 (11)	28 (7.3)	69 (18)	0.053
	Two-drug combination	77 (20)	104 (27)	181 (47)	
	Polytherapy	61 (16)	74 (19.2)	135 (35)	
Duration of Epilepsy	<3 years	46 (12)	58 (15)	104 (27)	0.774
	3–5 years	53 (14)	56 (15)	109 (28.3)	
	6–8 years	41 (11)	53 (14)	94 (25)	
	9–10 years	39 (11)	39 (10)	78 (20.2)	
Seizures During Last Year	Free of seizures	6 (1.6)	20 (5.2)	26 (7.0)	0.008
	1–5 seizures	23 (6.0)	16 (4)	39 (10)	
	6–10 seizures	44 (11.4)	34 (9)	78 (20)	
	>10 seizures	106 (28)	136 (35.3)	242 (63)	
Current Status of Epilepsy	Controlled	20 (5.2)	2 (1.0)	22 (6)	<0.001
	Improving	64 (17)	48 (13)	112 (29)	
	No change	78 (20)	86 (22.3)	164 (43)	
	Deteriorated	17 (4.4)	70 (18.2)	87 (23)	
Seizures since Last Follow-up	None	27 (7.0)	5 (1.3)	32 (8.3)	<0.001
	1–2	69 (18.0)	38 (10)	107 (28)	
	3–4	66 (17.1)	93 (24.2)	159 (41.4)	
	>5	17 (4.4)	70 (18.2)	87 (23)	

DISCUSSION

This study established significant information regarding the demographic data, medical features, and quality of life assessment of epileptic patients at Lahore General Hospital. The results of this research contrast with previous literature and further elaborate on their clinical significance and the need for additional research in epilepsy treatment. The statistical population survey indicated that epilepsy occurred more frequently among adults under twenty-five and primarily affected males, who comprised 63.1% of this age group. Research findings had previously demonstrated that epilepsy affects populations in a comparable way in demographic terms^[9]. The results confirmed that epilepsy affected males more frequently in rural areas, in line with the sample, where males constituted 60.9% of the rural population. Studies also revealed that the high level of illiteracy among participants (47.4%) matched other findings that linked low education levels to a higher incidence of epilepsy among people who also faced stigma^[10].

More people had epilepsy in rural communities than in cities, at 61% compared to 39%. At the same time, rural participants scored lower on quality-of-life tests. Research has shown that rural areas lack quality neurological care, and that socioeconomic challenges and low reading skills

affect this population^[11]. QOL improves when patients complete education beyond the diploma level^[12]. The study showed similar data to Brodie et al. regarding the use of drug combinations and single-drug treatments for epilepsy patients. Two-drug combinations were used by 47.0% of patients, while monotherapy was present in 17.9% of cases^[13]. Both positive aspects and negative side effects, such as increased side effects and polypharmacy issues, exist when using combination therapies to reduce seizures. Medical care providers should prioritize therapy monitoring because it improves both medication compliance and quality of life^[14].

The quality of life of epilepsy patients depends on how frequently they have seizures and their level of education. This research focused on seizure frequency to identify its detrimental effects on patients' social interactions and work environment. Patient quality of life becomes crucial because of multiple seizures, highlighting the necessity of specific treatment strategies to decrease seizure intensity by improving medication control alongside behavioural modifications. My results may differ because we found only 7.3% of participants had comorbidities. In line with previous studies, there is substantial evidence that the prevalence of psychiatric comorbidities in epilepsy patients is much higher than in the general population. As a result,

they have a poor quality of life^[15]. Of the participants, 30.7% reported a significant fear of having a seizure, which indicates the broader psychosocial impact of having epilepsy. The way to address such fears, especially in the case of the individual with epilepsy, is to contribute to the improvement of the quality of life and overall well-being, as noted. Educational programs addressing the myths around epilepsy may decrease anxiety and stigma of epilepsy among pa-tients^[16].

The research showed vital clinical implications because of population changes and major psycho-social challenges. Epilepsy care management teams need to combine education with counselling through their patient support programs to help both educational groups make proper treatment decisions^[16]. The study found that male and female patients had statistically similar QoL levels. Studies indicate diverse findings about psychosocial challenges among women with epilepsy be-cause they experience both societal stigma and reproductive health concerns^[17]. Research find-ings support other studies showing that epilepsy related QoL shows minimal gender variations when seizure control and medication adherence factors are taken into consideration^[18].

RECOMMENDATION:

This study should be conducted in groups if a public hospital is chosen for data collection. Additionally, it should include a larger sample to better represent the broader population of Punjab Province.

CONCLUSION

This study highlights the significant impact of epilepsy on patients' quality of life at Lahore Gen-eral Hospital. The analysis identified a statistically significant association between patients' quali-ty of life and selected factors, with p-values of 0.008 and <0.001. Patients also experienced emo-tional distress, memory difficulties, and social limitations. Rural–urban differences may further contribute to disparities in healthcare access and awareness. These findings emphasize the need for comprehensive epilepsy care that includes effective seizure management, appropriate medica-tion use, patient education, psychological support, and efforts to reduce stigma. A patient-centred and holistic approach is essential to improve the overall well-being and daily functioning of individuals living with epilepsy.

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Muniba Latif: Substantial contributions to the conception and design of the work.

Safina Tariq: Acquisition of data for the work.

Rabbiya Sarwar: Interpretation of data for the work.

Sabiha Abdul Ghaffar: Drafting the work.

Zobia Yaqoot: Reviewing it critically for important intellectual content.