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Exploring the Psychological Determinants of Quality of Life in Epilepsy: A Gender-Based Perspective

Faiza Khan Afridi[1] *and Prof. Dr. Erum Irshad*[2]

1. Lecturer, Department of Psychology, Shaheed Benazir Bhutto Women University, Peshawar, Pakistan.
2. Professor, Department of Psychology, University of Peshawar, Peshawar, Pakistan.

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Corresponding Author:
Faiza Khan Afridi
Email: faiza.afridi10@gmail.com

Abstract: *Epilepsy is a chronic neurological disorder that not only affects individuals physically but also triggers significant mental health challenges, particularly feelings of depression and anxiety. These psychological issues can greatly influence the overall quality of life of people with epilepsy, and their effects may vary across genders. This study aimed to explore how depression and anxiety predict the quality of life in epilepsy patients. It also examined the interplay between these psychological factors and quality of life, along with any gender differences in these variables. Using a cross-sectional design, a total of 380 epilepsy patients, aged between 18 and 65 years, were recruited through purposive sampling from various public and private sector hospitals and clinics in Peshawar, Pakistan. To assess depression, anxiety, and quality of life, standardized tools, including the Hospital Anxiety and Depression Scale (HADS) and the WHO Quality of Life-BREF were utilized. Findings indicated that both depression and anxiety serve as significant negative predictors of quality of life in those with epilepsy, accounting for a considerable amount of variance (70.2%) in the outcome. In addition, substantial inverse correlations were observed among the levels of depression, anxiety, and quality of life, suggesting that greater psychological distress correlates with a diminished quality of life. When comparing genders, female patients displayed significantly higher levels of both depression and anxiety than their male counterparts. However, no significant differences in overall quality of life scores were detected between genders. These findings highlight the critical need for incorporating mental health screenings and gender-sensitive strategies into standard epilepsy care to improve psychological well-being and enhance the overall quality of life for affected individuals.*

Introduction

Epilepsy represents a significant global public health challenge that impacts individuals on physical, psychological, and social levels. Epilepsy is a common neurological disorder that can impact individuals of any age globally. It is a medical condition characterized by recurrent seizures (WHO, 2023). Seizures can present as short episodes of uncontrollable movements that may impact certain areas of the body or the whole body. In some instances, individuals might experience brief periods of unconsciousness along with a loss of control over bowel or bladder functions. According to the WHO (2023), a diagnosis of epilepsy necessitates the occurrence of at least two seizures, as a single seizure is insufficient for diagnosis.

Seizure is defined as “the temporary manifestation of aberrant and excessive neuronal activity in the brain, leading to the emergence of certain symptoms and indicators” (Brodie et al., 2018). It is important to note that not everyone who experiences seizures has epilepsy. Some seizures can result from an injury and are less likely to occur again once the underlying issue is resolved (Beghi et al., 2010). In contrast, epilepsy is a chronic brain condition marked by recurrent and unpredictable seizures (Russ et al., 2012). “Epileptic seizures arise from abnormal spikes in electrical activity within a cluster of brain cells, which can originate from various regions of the brain.” Seizures can present in a wide range of ways, from brief instances of distraction and muscle spasms to lengthy and intense convulsions. Additionally, the seizure frequency can differ widely, with some individuals experiencing them only once a year, while others may have several episodes each day (WHO, 2023).

In 2005, the International League against Epilepsy (ILAE) introduced a conceptual definition of epileptic seizures and epilepsy. An epileptic seizure was defined as “a transient occurrence of signs and/or symptoms due to abnormal, excessive, or synchronous neuronal activity in the brain”. However, epilepsy is “a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures, and by the neurobiological, cognitive, psychological, and social consequences of this condition. The definition of epilepsy requires the occurrence of at least one epileptic seizure” (Fisher et al., 2005). In 2014, the ILAE initiated a second task force to develop an operational definition of epilepsy aimed at clinical diagnosis. The ILAE 2005 definition of epilepsy was reevaluated based on the recommendation of second ILAE task force. The revised definition identifies epilepsy as a neurological disorder diagnosed under any of the following conditions:

(1) “The occurrence of two or more unprovoked seizures separated by more than 24 hours.

(2) the presence of one unprovoked seizure and a probability of further seizures similar to the general recurrence risk (i.e., at least 60%) following two unprovoked seizures over the next ten years, or

(3) the identification of a specific epilepsy disorder” (Fisher et al., 2014).

Moreover, epilepsy may be regarded as resolved in individuals whose condition is age-dependent and who have exceeded the age of risk, provided they have been seizure-free for at least ten years and have not used antiepileptic medication for the past five years (Fisher et al., 2014).

Epilepsy in Pakistan

In Pakistan, epilepsy is recognized as a common neurological disorder, affecting more than 1% of the population. The national incidence rate is estimated at 10 cases per 1,000 individuals, with a comparatively higher occurrence observed in urban areas than in rural settings (Ullah et al., 2018; Usman et al., 2007). A study conducted by Bilal and Ansari (2021) in District Chiniot further investigated the prevalence and severity of epilepsy. The findings revealed a prevalence rate between 1% and 2% in Chiniot's general population, equating to around 1.37 million individuals affected.

Psychological comorbidities in Epilepsy

The psychological implications of epilepsy are profound, as the condition often co-occurs with various medical and psychiatric comorbidities. This comorbidity exacerbates limitations in functional abilities, reduces employment opportunities, and hinders the development and maintenance of social relationships (Kessler et al., 2012). Psychiatric disorders are more prevalent in individuals with epilepsy (PWE) compared to the general population and those with other neurological conditions (Lin et al., 2012). Depression and anxiety are frequently reported mental health issues in individuals living with epilepsy (Ngugi et al., 2010; Yıldırım et al., 2018). A study carried out in various hospitals and medical institutions in Peshawar, Pakistan, aiming to compare levels of depression and anxiety between individuals with epilepsy (n=100) and those without epilepsy condition (n=100) evidenced that patients with epilepsy experienced significantly higher depressive and anxiety symptoms compared to individuals without epilepsy (Usra et al., 2022). The findings of the study on the preponderance of depression and anxiety in adolescents and young adults (n=179) with the epileptic condition revealed higher levels of anxiety (36%) and depression (35%) in this population (Engel et al., 2021). Results of a study by Ahmad et al. (2018) demonstrated that depression was highly prevalent, affecting 70% of individuals with epilepsy seeking treatment in the outpatient department of Khyber Teaching Hospital, Peshawar, Pakistan.

Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2013), states depression as “a sad or irritable mood or a sense of emptiness, accompanied by physical and cognitive changes that severely impair the individual´s ability to function”. Anxiety refers to “a psychological condition characterized by the symptoms of excessive and sustained fear and worry” (American Psychological Association, 2010a). The prevalence of depressive disorders among this group is estimated to be between 30% and 50%. Additionally, anxiety disorders, which have long been overlooked, are found in 25% to 52% of patients (Mula, 2017; Mula et al., 2014). These interictal psychiatric disorders and their symptoms contribute significantly to the hardships of living with epilepsy and are linked to negative outcomes, such as a heightened risk of suicide, resistance to medications, poorer outcomes post-surgery, and diminished health-related quality of life. Although these issues are common and impactful, psychiatric disorders are often underidentified and inadequately treated in individuals with epilepsy (Michaelis et al., 2018; Mula, 2017).

WHO (2012) defines quality of life as “individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a comprehensive concept that encompasses various dimensions, including an individual’s physical health, psychological well-being, level of independence, social connections, personal beliefs, and their interactions with key aspects of the surrounding environment”. This definition emphasizes that quality of life is a subjective assessment shaped by cultural, social, and environmental influences. The findings of a study by Usra et al. (2021) evidenced that patients with epilepsy have a lower quality of life in comparison to non-epileptic patients.

Anxiety and depression can have a more profound effect on functioning than the seizures themselves, as their persistent effects may hinder effective self-management of epilepsy, resulting in poorer control of seizures and reduced quality of life (Suhail, Naseem & Anwar, 2025).. Numerous studies have highlighted the detrimental effects of depression and anxiety disorders on the quality of life (QOL) for patients with epilepsy, revealing that depressive symptoms are the most significant predictor of poor QOL (Kanner, 2016; Mula, 2017; Mula et al., 2014). In 2014, Lee and colleagues carried out a study aimed at identifying factors that could impact the quality of life of epilepsy patients in Korea. The results showed that depression directly impacts the quality of life. However, quality of life is shaped by cultural factors such as societal values, traditions, local laws, and the accessibility of resources (Hamid et al., 2013).

Addis et al. (2020) conducted a study to evaluate the health-related quality of life (HRQOL) and its related factors in 370 patients with epilepsy in northwest Ethiopia. The results indicated that patients with epilepsy experience a generally lower quality of life, and that there is a negative correlation between HRQoL and the presence of depression and anxiety highlighting the necessity of addressing depression, anxiety, and other psychosocial concerns through targeted interventions aimed at mitigating psychosocial concerns to enhance the HRQOL of patients with epilepsy. Similarly, findings from a survey involving 465 adults with epilepsy indicated that depression had a detrimental influence on their quality of life (Ettinger et al., 2014).

Gender differences

Gender differences hold significant importance in the psychological experience of epilepsy. A cross-sectional study (Lee et al., 2021) examined gender differences and factors affecting health-related quality of life in 129 men and women with epilepsy, after adjusting for depression, anxiety, and daily stress. The findings indicated that there were no significant gender differences in the overall quality of life (QOL) or its subscales as measured by the QOLIE-31. A study by Zhong et al. (2021) involving 221 adults with epilepsy in Northeast China explored gender disparities in factors related to QOL. The researchers utilized the Patient Health Questionnaire (PHQ-9), Beck Anxiety Inventory (BAI), and Quality of Life in Epilepsy Inventory (QOLIE-31) to evaluate depression, anxiety, and QOL, respectively. The results demonstrated that symptoms of depression and anxiety were strong predictors of lower QOL for both genders. Additionally, the study found no statistically significant differences in overall quality of life between male and female patients with epilepsy.

Objectives

1. To investigate psychological factors that predict the quality of life in patients with epilepsy.
2. To examine the relationships between these psychological determinants and quality of life.
3. To explore gender differences in depression and anxiety as predictors of quality of life in patients with epilepsy.

Hypotheses

1. Depression and anxiety will predict a lower quality of life in epilepsy patients.
2. Depression and anxiety will have an inverse correlation with the quality of life in epilepsy patients.
3. The effect of depression and anxiety on the quality of life will be significantly different in male and female epilepsy patients.

Methodology

This section includes the sample, participant characteristics, measurement instruments, data collection procedure, and ethical considerations.

Sample

A purposive sampling of 380 patients, diagnosed with epilepsy in their ages of 18 to 65years old was taken from public and private hospitals and private clinics in Peshawar city, utilizing a cross-sectional study design. To ensure an adequate representation of the sample, Raosoft software (Raosoft, 2004) was used to calculate the sample size for this study.

Inclusion Criteria

The study included; adults having ages from 18 to 65 years with a confirmed diagnosis of epilepsy for at least one year, having a minimum education level of matriculation (10 years of schooling) to ensure their ability to comprehend and complete the assessment tools, those who consented to participate, had no other neurological conditions, history of intellectual or learning disabilities, chronic physical illnesses, or primary psychiatric disorders.

Exclusion Criteria

The study excluded participants having ages below 18 or older than 65 years, participants with epileptic illness due to brain injury, trauma, or other medical bases, participants with education less than matric level education, comorbid neurological, psychiatric, chronic physical illness, intellectual or learning disability, or substance abuse.

Instruments

Demographic Data

A semi-structured demographic and clinical information form was utilized to gather both clinical and socio-demographic data from respondents. This included age, gender, level of education, occupation, family structure, and marital status. Clinical data collected comprised family history of epilepsy, seizure frequency and severity, duration of the illness, seizure type, treatment approach (monotherapy or polytherapy), and the presence of any coexisting mental health conditions.

Hospital Anxiety and Depression Scale (HADS)

The HADS is a 14-item self-report tool created by Zigmond and Snaith in 1983 to evaluate anxiety and depression among medical patients. This scale features two subscales—one for anxiety and one for depression— each of which contains 7 items rated on a 4-point Likert scale (ranging from 0 to 3), representing symptoms experienced in the past week. Scores from 0–7 indicate mild, 8–10 moderate, and 11 or above severe levels. In the current study, the HADS demonstrated high internal consistency (α = .90 overall; α = .84 for depression; α = .85 for anxiety).

WHOQOL-BREF Scale

“The WHOQOL-BREF, developed by the World Health Organization in 1998, is a 26-item tool intended to evaluate quality of life across four areas: physical health, psychological well-being, social relationships, and the environment. Participants respond using a 5-point Likert scale, which is then transformed to a 0 to 100 scale, where higher scores reflect improved quality of life”. Overall, α = .86 showed good internal reliability of the scale. Results showed that the physical (α = .78), psychological (α = .75), and environmental domains (α = .73) have reliable Cronbach’s alpha values. On the other hand, the social domain (α = .56) showed relatively lower internal consistency. Further, the psychometric validity of the scale in the Pakistani context has been supported by Khan et al. (2003) and Lodhi et al. (2017).

Procedure

A total of 380 patients with epilepsy were recruited after obtaining formal permission from institutional authorities to gather data from the outpatient departments of both public sector and private sector hospitals, as well as private clinics in Peshawar, Pakistan. A socio-demographic and clinical information sheet was utilized to collect data, including age, gender, marital status, family structure, and educational background, alongside clinical information such as the total duration of epileptic condition, seizure frequency, age at onset, type of epilepsy, and family history of the condition. Depression and anxiety levels were evaluated using the Hospital Anxiety and Depression Scale (HADS), and quality of life was assessed with the WHOQOL-BREF Scale. Every participant gave their written informed consent. Maintenance of confidentiality and an option to withdraw from the study were ensured to the participants. Participants received clear instructions prior to completing the scales, and any questions they had were addressed promptly. After data collection, responses were carefully reviewed for any omissions. Participants were genuinely appreciated for their time, cooperation, and valuable input. Ethical approval for the study was secured from the concerned authorities before conducting the research.

Ethical Considerations

Approval from the Advanced Studies and Research Board (ASRB) at the University of Peshawar was granted to conduct this study. Additionally, permissions were obtained from relevant authorities by formally reaching out to the ethical committee and institutional leadership through official channels. Participants' rights, dignity, and confidentiality were ensured throughout the study, with informed consent and the right to withdraw at any time. The researcher followed all ethical guidelines and maintained academic integrity.

Results

The analysis of data for this study was conducted using SPSS 22.0 software. To achieve the study's objectives, several statistical methods were performed, including descriptive analysis, correlation analysis, multiple linear regression analysis, and an independent samples t-test.

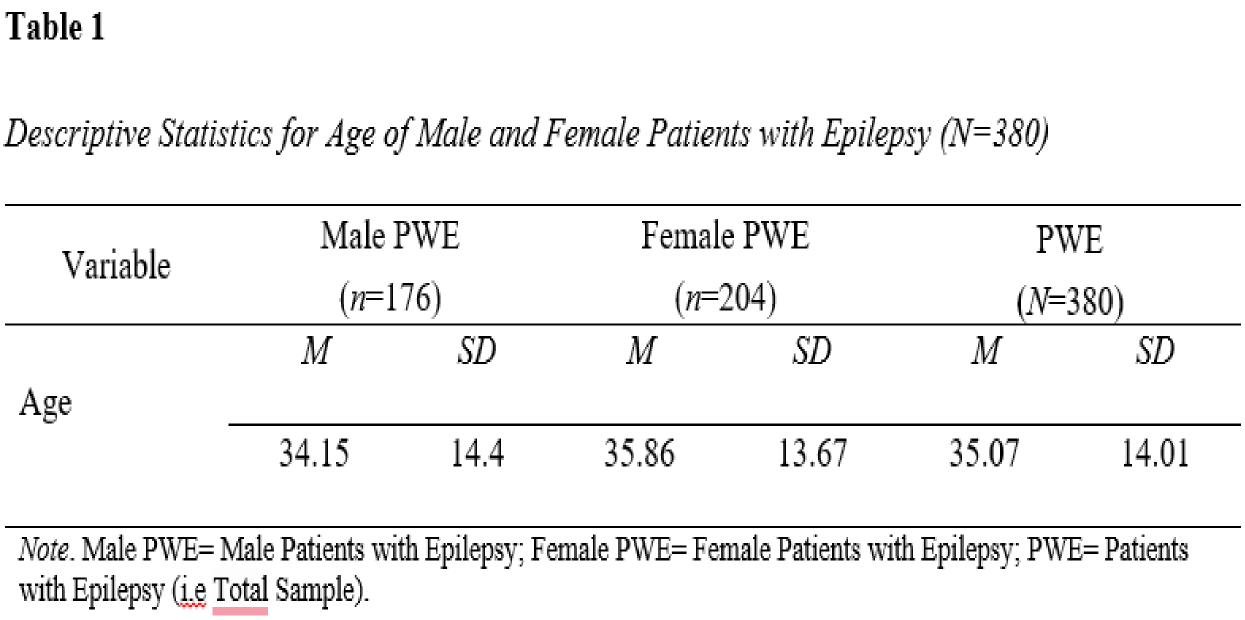

Table 1

Descriptive Statistics for Age of Male and Female Patients with Epilepsy (N=380)

Variable	Male PWE (*n*=176)		Female PWE (*n*=204)		PWE (*N*=380)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Age	34.15	14.4	35.86	13.67	35.07	14.01

Note. Male PWE= Male Patients with Epilepsy; Female PWE= Female Patients with Epilepsy; PWE= Patients with Epilepsy (i.e Total Sample).

Table 1 shows descriptive statistics of the age of epileptic patients. The mean age of the male patients (n = 176) was 34.15 years (SD = 14.4), and the females (n = 204) had an average age of 35.86 years (SD = 13.67), which is slightly higher. In the overall sample (N = 380), the mean age was 35.07 years (SD = 14.01).

Table 2

Sociodemographic Characteristics of Epileptic Patients (N=380)

Characteristics	*N*	%
Age		
18-35 years	235	61.8
36-50 years	84	22.1
51-65 years	61	16.1
Gender		
Male	176	46.3
Female	204	53.7
Marital Status		
Single	156	41.1
Married	189	49.7
Divorced	05	1.30
Widow	30	7.9
Family System		
Nuclear Family System	119	31.3
Joint Family System	261	68.7
Educational Level		
Matric (10 years of education)	70	18.4
12 years of education	153	40.3
14 years of education	92	24.2
16 years of education	40	10.5
18 years of education and above	25	6.60
Socio-economic Status		
Low	104	27.4
Middle	229	60.3
High	47	12.4
Employment status		
Employed	49	12.9
Un-employed	286	75.3
Self-employed	45	11.8

Table 2 presents the demographic characteristics of the sample. Most participants were between 18 and 35 years old (n = 235, 61.8%). Female participants outnumbered males, accounting for 53.7% (n = 204) of the sample, while males comprised 46.3% (n = 176). Nearly half of the patients were married (n = 189, 49.7%), with a considerable proportion being single (n = 156, 41.1%). The majority lived in joint family systems (n = 261, 68.7%). In terms of education, the highest number had completed intermediate education (12 years) (n = 153, 40.3%), followed by those with graduation-level education (14 years) (n = 92, 24.2%). Furthermore, socioeconomic status data showed that most of the participants (n = 229, 60.3%) were from within the middle class socioeconomic status, while others were from the lower end of the socioeconomic status (n = 104, 27.4%). Moreover, a significant percentage of the sample, specifically 75.3% (n = 286), was unemployed.

Table 3

Clinical Characteristics of Patients Related to Epileptic Illness (N=380)

Variables	*n*	%
Age of Onset		
Below 15 years	181	47.6
16-30 years	158	41.6
31-45 years	41	10.8
Type of Epilepsy		
Generalized	239	62.9
Focal	89	23.4
Generalized and focal both	52	13.7
Family History of Epilepsy		
Yes	97	25.5
No	283	74.5
Total Duration		
Below 15 years	187	49.2
16-30 years	128	33.7
31-45 years	50	13.2
46 and above	15	3.9

Seizure Frequency Since 1 Year		
Daily	36	9.5
Weekly	70	18.4
Monthly	154	40.5
Half-yearly	53	13.9
Yearly	67	17.6
Seizure Free Period		
1 week	29	7.6
1 month	165	43.4
6 months	119	31.3
1 year	48	12.6
More than 1 year	19	5.0
Type of Treatment		
Monotherapy	213	56.1
Polytherapy	167	43.9

Table 3 summarizes the clinical profiles of the participants. Generalized epilepsy was diagnosed in 62.9% (n=239) of the patients which is a significant portion of the total sample, and 47.6% (n=181) experienced the onset of their condition before the age of 15 and between 16–30 years in 41.6% (n = 158). Nearly half (49.2%) had lived with epilepsy for under 15 years. Monthly seizures were the most prevalent, occurring in 154 individuals (40.5%). Additionally, 165 participants (43.4%) were seizure-free for one month, and 119 individuals (31.3%) maintained this seizure-free status for six months. Most patients were receiving monotherapy, accounting for 213 cases (56.1%). A family history of epilepsy was noted in 97 participants (25.5%), whereas a significant majority (n = 283, 74.5%) had no known familial history of the condition.

Table 4

Psychometric Properties for Scales

Scale	*M*	*SD*	α	Range		Skewness	Kurtosis
				Actual	Potential		
HADS	21.40	7.18	.82	7-40	0-42	.07	-.06
Anxiety Subscale	11.84	3.61	.85	4-20	0-21	-.14	-.45
Depression Subscale	9.55	4.04	.88	1-20	0-21	.39	.31
WHOQoL-BREF Scale	48.26	13.98	.94	16-75	0-100	-.01	-.54
Physical Health Domain	44.31	16.03	.89	14-75	0-100	.18	-.97
Psychological Health Domain	41.04	17.48	.87	12-75	0-100	.22	-.77
Social Relationship Domain	57.45	17.24	.59	16-83	0-100	-.48	-.60
Environment Domain	57.17	14.82	.85	18-87	0-100	-.62	-.21

Note. HADS=Hospital Anxiety and Depression Scale; WHOQOL-BREF Scale= World Health Organization Quality of Life-Brief Scale.

Table 4 demonstrates that the scales used in the study had strong internal consistency. The HADS showed good reliability (α = .82), with higher scores on the anxiety subscale (M = 11.84, α = .85) than the depression subscale (M = 9.55, α = .83). The WHOQOL-BREF also showed excellent reliability (α = .84), with the Social Relationships Domain having the highest mean score (M = 57.45, α = .77), while the Psychological Health Domain had the lowest (M = 41.04, α = .87), highlighting psychological difficulties among participants.

Table 5

Descriptive Statistics and Correlations for Study Variables

Variables	*N*	*M*	*SD*	1	2	3
1. Depression	380	9.55	4.04	—		
2. Anxiety	380	11.84	3.61	.56**	—	
3. Quality of Life	380	48.26	13.98	-.61**	-.70**	—

**p<.01.

Table 5 shows the relationship between all the study variables. Depression demonstrated a moderate strength of negative correlation with quality of life at *p* < .01 (*r* = -0.61), indicating the association of higher depressive symptoms with decreased quality of life. Anxiety symptoms displayed a strong negative relationship with quality of life (*r* = -0.70, *p* < .01) in individuals having epilepsy.

Table 6

Regressions of Relationship between Depression, Anxiety, and Quality of Life

Variables	*B*	*SE*	*T*	*P*	95%CI
Constant	83.85	1.35	62.01	.000	[81.19, 86.51]
Depression	-1.46	0.15	-9.73	.000	[-2.16,-1.50]
Anxiety	-1.83	0.17	-10.94	.000	[-1.91, -1.14]

Note. N=380; CI=confidence interval.

Table 6 illustrates the significant impact of depression and anxiety levels on the quality of life in epilepsy patients. The R^2 value of .702 indicates that the model explains 70.2% of the variance in quality of life, supported by F(2, 377) = 443.26, with p < .001, demonstrating the model's significance. The findings show that both depression and anxiety (β = -0.42, p < .001; β = -0.47, p < .001, respectively), significantly predict quality of life negatively. This implies that increased levels of these psychological factors are related to a lower quality of life among epilepsy patients.

Table 7

Mean Comparison of Male and Female Epileptic Patients on All Study Variables (N=380)

	Male		Female				
Variables	*M*	*SD*	*M*	*SD*	*t*(378)	*p*	Cohen's *d*
Anxiety	11.32	3.73	12.29	3.44	-2.64	.009	0.27
Depression	9.05	3.77	9.99	4.23	-2.26	.024	0.23
Quality of Life	48.35	13.93	48.19	14.06	0.11	.912	0.01

Note. *n*=**176 for male and** *n*=**204 for female.**

Table 7 outlines the gender disparities in epilepsy patients concerning psychological factors that influence quality of life. The findings indicated significant disparities in levels of depression and anxiety. In comparison to male patients, where the mean score for depression was 9.05 (SD = 3.77) and for anxiety was 11.32 (SD = 3.73), the scores for female patients were higher, displaying a mean of 9.99 (SD = 4.23) for depression and 12.29 (SD = 3.44) for anxiety. The effect sizes were calculated to be small for both depression and anxiety, with Cohen's d values of 0.23 and 0.27, respectively. However, gender inequalities regarding quality of life scores were not statistically significant, as shown by t(378) = 0.11, $p > .05$, with the Cohen’s d value for quality of life being 0.01, indicating a minimal effect size.

Discussion

This study seeks to investigate the psychological factors influencing quality of life in individuals with epilepsy, as well as to analyze the connections between these psychological predictors and quality of life. Furthermore, it sought to explore gender differences in depression and anxiety as they relate to quality of life among patients with epilepsy. The results offer significant insights into the intricate association between psychological variables and quality of life in this demographic, and they emphasize important gender-specific trends that could help guide targeted interventions.

The study results demonstrated that depression and anxiety have significantly and negatively influenced the quality of life of patients diagnosed with epilepsy (refer to Table 6). These psychological factors independently contribute to decreased life quality even though they do not occur simultaneously. These results are aligned with previous literature, as shown in the study by Shen et al. (2022) which evaluated how depression combined with anxiety and somatic symptom disorder (SSD) affects quality of life of epilepsy patients alone and when they occur together. Depression was diagnosed in 25% of patients while SSD was diagnosed in 24% and anxiety was diagnosed in 21% of patients within the sample of 749 participants. Results further indicated that depression and anxiety independently predict poor life quality in individuals suffering from an epileptic condition. The quality of life was more adversely influenced by depression than anxiety. Combined depression and anxiety contributed to greater quality of life deterioration in patients with epilepsy than occurring individually.

Lima et al (2021) in a related study also demonstrated that Individuals with temporal lobe epilepsy associated with hippocampal sclerosis (TLE-HS) exhibited significantly higher levels of depressive and anxiety symptoms, which contributed substantially to the variance across various domains of quality of life. Correspondingly, Minwuyelet et al. (2022) demonstrated that the presence of comorbid depression and anxiety was a major predictor of reduced quality of life in adult patients with epilepsy.

Regarding the association among study variables, the results of this study revealed that there is an inverse correlation between depression, anxiety, and quality of life. This aligns with existing studies highlighting the adverse impact of depression and anxiety on life quality among patients experiencing epileptic seizures. (Chen et al., 2016; Garcia et al., 2015; Kishi et al., 2022; Minwuyelet et al., 2022; Ridsdale et al., 2017; Tombini et al., 2021).

Concerning gender inequalities with respect to psychological factors that predict quality of life in individuals diagnosed with epilepsy, including depression and anxiety. Study results showed significant differences in depression and anxiety levels, among which female patients were more depressed and anxious than male patients. However, no significant differences in the quality of life related to gender among patients with epilepsy were observed. This observation regarding depression and anxiety aligns with existing literature indicating that females are generally more vulnerable to depression and anxiety compared to males (Altemus et al., 2014; Mclean et al., 2011).

Likewise, a study evidenced that women with epileptic conditions tend to have a higher prevalence of comorbid depressive symptoms compared to men (Gaus et al., 2015). Similarly, a study involving male (n=221) and female (n=339) epilepsy patients in Multan revealed similar results that showed significant gender differences, with females having a higher level of depression and anxiety than males, emphasizing the need to address gender specific psychological issues in the treatment of epilepsy patients (Parveen et al., 2023). In contrast, Liu et al. (2020) showed that there were no substantial gender disparities in the prevalence of depression and anxiety epilepsy patients. However, this study found that psychosocial factors affected males with epilepsy more and epileptic illness itself affected females with epilepsy.

Parallel with the study findings concerning gender disparities in the quality of life of epilepsy patients. Altwijri et al. (2020) reported no substantial differences in the quality of life of male and female epileptic patients in Saudi Arabia. A similar study was conducted by Sharma (2021) regarding quality of life and its relation with sociodemographic variables in 250 individuals with epileptic condition presently under treatment at AIIMS Jodhpur who had continuity of epilepsy for at least one year. Findings revealed that differences in the quality of life of both male and female epilepsy patients were not significant. A review of the studies on adults with epilepsy by Taylor et al. (2011) identified clinical variables such as, frequency of seizures, severity of condition, depression, and anxiety as being strongly related to reduced health-related quality of life and revealed that there were no substantial gender inequalities in the quality of life of people diagnosed with epilepsy.

The finding of no significant gender differences in overall quality of life, alongside the observation that female epileptic patients experience increased depression and anxiety levels compared to their male counterparts, can be attributed to various factors. Women may exhibit an increased level of psychological distress in a conservative society such as Peshawar, Pakistan. Moreover, women with epilepsy are subject to carry increased burdens, including taking care of home, children and managing family expectations. These combined pressures, fears of social rejection, stigma and limited opportunities to express emotions make them more vulnerable to mental health challenges. In addition, emotional expression is determined by societal norms where women are more prone to sharing their emotional struggles compared to men.

However, men are encouraged to suppress their emotions according to cultural notions. Men have similar distress as women, but they are less likely to report the distress. Although male patients had lower levels of depression and anxiety, this does not mean that they enjoy a better quality of life. Some other men may have other challenges, including regarding social roles, work life or health, which may adversely impact upon quality of life. Additionally, men may not have coping mechanisms or social support systems women may have, which makes quality of life an issue. These complexities imply that the association between mental wellbeing and the quality of life is intricate and cannot be totally captured by customary measures of depression and anxiety alone. In addition to gender differences in the expression of psychological and quality of life outcomes among epilepsy patients, gender norms, cultural expectations, and healthcare accessibility contribute to these disparities between men and women.

Implications and Recommendations

The results of this study carry significant implications for clinical practice, investigative research, and policy development, which highlight the need to incorporate routine mental health screening for depression and anxiety into epilepsy care to improve patients' overall quality of life. Employing clinical psychologists to provide specialized counseling and psychological support could help in the early identification and management of these psychological challenges. Future research should focus on developing and testing targeted psychological interventions aimed at reducing depression and anxiety in epilepsy patients. Additionally, raising awareness among healthcare providers about the psychological burden associated with epilepsy could lead to more comprehensive and patient-centered care approaches.

Limitations

This research has certain limitations that need to be recognized. The cross-sectional design does not allow inference of causal association between depression, anxiety, quality of life, and epilepsy. The collection of data relied on the use of self-report measures, which are likely to have introduced social desirability bias or underreporting in relation to sensitive psychological issues. Furthermore, the research was carried out exclusively in Peshawar, which could limit the generalizability of the findings to a broader population.

Conclusion

This study explored the psychological factors that predict the quality of life among epilepsy patients, including depression and anxiety. The findings revealed that both depression and anxiety have a significant negative impact on the overall quality of life in epilepsy patients. These results underscore the critical need to address mental health challenges as an integral part of epilepsy care, rather than focusing solely on seizure management. Comorbid mental health problems are often overlooked in clinical settings, where the focus tends to remain on seizure control. However, untreated depression and anxiety can impair patients' ability to manage their condition effectively and further deteriorate their health outcomes. Recognizing and managing depression and anxiety early can play a key role in enhancing patient outcomes and their quality of life. The study emphasizes the need for routine psychological screening and targeted interventions in epilepsy care to reduce psychological distress. By addressing these psychological factors through integrated care approaches, healthcare providers can contribute to better health outcomes, greater well-being, and improved overall quality of life for epilepsy patients.

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