

ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES SCHOOL OF MEDICINE DEPARTMENT OF NEUROLOGY7

Health-Related Quality of Life of People with Epilepsy at the Epilepsy Follow-Up Clinic, Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia: A cross-sectional study

A Thesis submitted to Addis Ababa University, Department of Neurology, in partial fulfillment of the requirements for the specialty certificate in neurology.

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Addis Ababa, Ethiopia

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Title of the research project	Health-Related Quality of Life of People with Epilepsy at the Epilepsy Follow-Up Clinic, Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia: A cross-sectional study
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Advisors	• Professor Getahun Mengistu (MD), Consultant Internist and Neurologist, Headache and Craniofacial pain subspecialist • Dr. Seblewongel Asmare (MD), Assistant Professor of Neurology • Dr. Taye Birku (MD) Assistant Professor of Neurology
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ACRONYMS AND ABBREVIATIONS

- AED: Anti-Epileptic Drug
- AOR: Adjusted Odds Ratio
- ASM: Anti-Seizure Medication
- ASM AE: Anti-Seizure Medication Adverse Events
- ASDR: Age-Standardized Disability-Adjusted Life Years Rate
- ASYR: Age-Standardized Years Lived with Disability Rate
- CI: Confidence Interval
- CNS: Central Nervous System
- DALYs: Disability-Adjusted Life Years
- DRE: Drug-Resistant Epilepsy
- GBD: Global Burden of Disease
- HADS: Hospital Anxiety and Depression Scale
- HICs: High-Income Countries
- HRQoL: Health-Related Quality of Life
- ILAE: International League Against Epilepsy
- LMICs: Low- and Middle-Income Countries

- PWE: People with Epilepsy
- QOLIE-31: Quality of Life in Epilepsy Inventory-31
- SDI: Socio-demographic Index
- SMR: Standardized Mortality Ratio
- SSA: Sub-Saharan Africa
- TASH: Tikur Anbessa Specialized Hospital
- TBI: Traumatic Brain Injury
- TLE: Temporal Lobe Epilepsy
- WHO: World Health Organization
- WHOQOL-BREF: World Health Organization Quality of Life - Brief version
- YLDs: Years Lived with Disability
- YLLs: Years of Life Lost

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ABSTRACT

Background: Epilepsy is a long-term brain disorder that affects over 50 million individuals globally. In addition to controlling seizures, the disease has profound physical, emotional, and social consequences. Health-Related Quality of Life (HRQoL) has become an important instrument to assess these multidimensional effects. Currently, there is a substantial gap in systematic HRQoL evaluation through validated instruments in Ethiopia.

Methods: It was a hospital-based cross-sectional study targeting 185 adult patients who have been on epilepsy follow-up at neurology clinic. Pre-tested Amharic questionnaire that combines socio-demographic inquiries with the Quality of Life in Epilepsy Inventory-31 (QOLIE-31) was used. Statistical analysis was performed using SPSS, employing descriptive statistics to summarize patient profiles and multivariable linear regression to identify independent predictors

Results: A total of 168 people with epilepsy were included. The mean HRQoL score was 56.71 ± 14.09. The highest domain scores were observed in overall quality of life (64.40 ± 18.25) and social functioning (60.45 ± 20.96), while the lowest were in energy/fatigue (47.94 ± 19.66) and emotional well-being (50.79 ± 16.31). In multivariable analysis, seizure frequency ($\beta = -0.369$, $P < 0.001$) was the strongest predictor of poor HRQoL. Other independent predictors included presence of comorbid medical illness ($\beta = -0.337$, $p < 0.001$), longer duration of antiseizure medication use ($\beta = -0.204$, $p = 0.004$), unemployment ($\beta = -0.168$, $p = 0.014$), and history of admission for status epilepticus ($\beta = -0.148$, $p = 0.035$).

Conclusion: The study found that the health-related quality of life of people with epilepsy was moderately affected. Clinical factors such as seizure control, comorbid medical illness, and adverse effects of anti-seizure medications were significantly associated with HRQoL. These findings highlight the need for comprehensive epilepsy management that addresses both seizure control and factors affecting patients' overall well-being.

Key words: Epilepsy, Health-Related Quality of Life, Seizure Control; Anti-Seizure Medications, Ethiopia

1 INTRODUCTION

1.1 Background

Epilepsy is a long-term neurological condition characterized by a persistent tendency to produce epileptic seizures and has neurobiological, cognitive, psychological and social consequences [1]. It is estimated about 50 million people are affected by it, and it is also considered as the second most common severe neurological disorder worldwide. Epilepsy is also a leading contributor to global disability with an estimated 13 million years lived with disability (YLDs) attributed to this condition worldwide . To make matters worse 80% (could easily be more) of those who have epilepsy live in low-to-middle income countries (LMICs) where there is even less access to diagnosis, treatment, and long-term follow-up care. Infection with Toxoplasma gondii and epilepsy: A systematic review and meta- analysis With nearly 50 million people worldwide living with epilepsy, and an even higher incidence and prevalence in LMICs due to preventable causes including perinatal injury, central nervous system infections, traumatic brain injury, and stroke. People with epilepsy die two to three times more frequently than the general population, and this increased mortality is largely accounted for by sudden unexpected death in epilepsy (SUDEP), injuries, and status epilepticus.

In sub-Saharan Africa, epilepsy prevalence ranges from 7 to 15 per 1,000 populations, significantly exceeding estimates from high-income countries[1]. In Ethiopia, community-based studies report prevalence estimates between 5.2 and 8.5 per 1,000 populations, though under diagnosis and under reporting are common due to stigma and limited health-seeking behavior[2]. The epilepsy treatment gap in Ethiopia is estimated to exceed 70%, reflecting shortages of trained neurologists, inconsistent medication supply, and sociocultural beliefs surrounding epilepsy[3].

Beyond seizures, epilepsy imposes a substantial burden on multiple dimensions of patients' lives, including physical functioning, emotional well-being, cognition, social participation, and economic productivity[4]. Increasing evidence demonstrates that seizure control alone does not adequately capture the lived experience of people with epilepsy, as many individuals continue to report impaired functioning and reduced well-being despite optimal clinical management[5].

Consequently, health-related quality of life (HRQoL) has emerged as a critical outcome measure in epilepsy care and research.

HRQoL reflects an individual's subjective perception of the impact of a disease and its treatment on physical, psychological, and social functioning[6]. In epilepsy, HRQoL is shaped by a complex interplay of seizure-related factors, antiseizure medication effects, psychiatric comorbidities, cognitive impairment, stigma, and socioeconomic challenges[78]. HRQoL has become an essential outcome in epilepsy research because it captures the broader impact of the disorder beyond seizure frequency[9]. People with epilepsy consistently report lower HRQoL compared to the general population and individuals with other chronic illnesses[10]. Domains commonly affected include emotional well-being, energy and fatigue, cognitive functioning, and social participation[11].

The Quality of Life in Epilepsy Inventory-31 (QOLIE-31) is an epilepsy-specific tool that has been validated extensively that captures these multidimensional outcomes and is recommended for clinical and research application. It has seven subscales: seizure worry, overall quality of life, emotional well-being, energy/fatigue, cognitive functioning, medication effects, and social functioning. This allows for the standardized evaluation and comparison of individuals living with epilepsy across populations and settings, including LMICs.

In Ethiopia, epilepsy remains a significant public health problem characterized by a high treatment gap, pervasive stigma, and limited psychosocial support services[12]. Despite this, data on HRQoL among adults with epilepsy attending specialized follow-up clinics in the Country is scarce. Generating such evidence is essential for improving patient-centered epilepsy care and informing policy and service development.

So that, this research is designed to evaluate quality of life of epilepsy patients and determine the factors affecting it among adult patients with epilepsy who had follow-up at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia.

1.2 Statement of the problem

Despite advances in ant seizure medications and epilepsy care, a large proportion of People with epilepsy continue to experience poor HRQoL[13]. In many LMICs, clinical care remains focused primarily on seizure reduction, with limited attention to psychosocial well-being and patient-reported outcomes[14]. This narrow focus risks people with seizure to overlooking key determinants of poor functioning, including depression, stigma, unemployment, and cognitive impairment.

In Ethiopia, existing studies have largely focused on epilepsy prevalence, treatment gaps, and stigma, with limited attention to comprehensive HRQoL assessment using epilepsy-specific tools[15]. Moreover, data from tertiary referral centers such as TASH, which manage complex and drug-resistant epilepsy cases, are particularly scarce. Without robust HRQoL data, clinicians and policymakers lack the evidence needed to design targeted interventions addressing the full spectrum of patient needs.

1.3 Significance of the study

The importance of the study It is the first of its kind to assess the HRQoL among People with epilepsy attending the epilepsy follow-up clinic at TASH and will add value to the current limited information. Identifying factors that contribute to poor HRQoL will inform holistic, patient-centered epilepsy care and guide the integration of mental health and psychosocial support services within routine service delivery.

Furthermore, the results will contribute to the limited body of literature on epilepsy-specific HRQoL in Ethiopia and other LMICs, providing a benchmark for future research. The use of the validated QOLIE-31 instrument will enable comparison with international studies and facilitate the development of targeted interventions to improve the well-being of people with epilepsy.

2. LITERATURE REVIEW

2.1 Global Epidemiological Trends, Clinical Determinants, and Contextual Evidence

The paradigm of epilepsy management has undergone a transformative shift over the last three decades, moving from a strictly seizure-centric clinical model toward a holistic, patient-reported outcome framework. Epilepsy is no longer viewed merely as a collection of transient electrical disturbances in the brain but as a chronic neurological condition with profound neurobiological, cognitive, psychological, and social ramifications[1617]. As one of the most prevalent serious neurological disorders globally, it affects between 50 million and 70 million individuals across all age groups and geographic regions[1819].

While the primary clinical objective remains the achievement of seizure freedom, accumulating evidence suggests that the absence of seizures does not inherently equate to the restoration of psychological or social well-being[20]. Consequently, health-related quality of life (HRQoL) has emerged as the definitive measure for assessing the lived experience of people with epilepsy (PWE), capturing the subjective impact of the disease and its treatment on their physical, emotional, and social functioning[2122].

2.1.1 **Global and Regional Epidemiology of Epilepsy**

The global epidemiological landscape of epilepsy is characterized by a significant burden that is disproportionately distributed across various socio-economic strata. Epilepsy contributes substantially to global disability; accounting for an estimated 13 million years lived with disability (YLDs) worldwide[23]. In 2021, the Global Burden of Disease (GBD) study estimated that there were approximately 51.7 million individuals living with active epilepsy globally, representing approximately 0.7% of the world's population[24].

2.1.2 **Prevalence and Incidence**

The age-standardized prevalence rate (ASPR) for epilepsy is estimated at 658 per 100,000 population globally[25]. However, this figure masks the disparity between idiopathic epilepsy-often of genetic or unknown origin-and secondary epilepsy, which results from underlying structural or metabolic brain abnormalities[26]. Idiopathic epilepsy alone accounts for an ASPR of 307.38 per 100,000 persons, with approximately 24.2 million cases globally[27].

The incidence rates shows a two-peak curve, with a first peak in early childhood and a second peak in the elderly population aged >60 years[28]. 5 million people are newly diagnosed with epilepsy every year around the world[29]. The incidence is around 49 per 100,000 per year in high-income countries (HICs) and up to 139 per 100,000 per year in low- and middle-income countries (LMICs). This increased incidence in resource poor areas is mainly due to preventable causes, such as perinatal hypoxic insults, central nervous system (CNS) infections, and traumatic brain injuries (TBI)[3031].

2.1.3 **YLDs and DALYs: The Burden of Disability**

Disability-adjusted life years (DALYs) provide a comprehensive measure of the disease burden by combining years of life lost (YLLs) due to premature mortality and YLDs[32]. In 2021, the age-standardized DALY rate for epilepsy was estimated at 177.85 per 100,000 population. Males consistently exhibit higher DALY rates at 201.29 per 100,000 compared to females at 154.25 per 100,000[33].

The non-fatal burden, represented by YLDs, is particularly high for epilepsy of unknown cause, which accounts for approximately 7.27 million YLDs globally. Within the GBD Neurological Diseases Subset, epilepsy of unknown cause ranks third in terms of YLDs, surpassed only by migraine and Alzheimer's disease[34].

2.1.4 **Regional Variations and the Socio-demographic Index (SDI)**

Regional disparities are starkly correlated with the Socio-demographic Index (SDI). Low and low-middle SDI regions, particularly in sub-Saharan Africa (SSA) and South Asia, bear most of the global burden, accounting for over 80% of prevalent cases and nearly 88% of epilepsy-related DALYs[35]. While age-standardized mortality and DALY rates have decreased globally

since 1990, the total number of incident and prevalent cases has continued to rise due to population growth, particularly in low SDI regions[36].

In sub-Saharan Africa, the prevalence of active convulsive epilepsy is estimated between 7 and 15 per 1,000 persons[37]. Ethiopia's specific epidemiological profile shows prevalence estimates ranging from 5.2 to 8.5 per 1,000 populations in community-based studies. Despite these figures, the treatment gap in Ethiopia is estimated to exceed 70%[38].

2.2 **Health-Related Quality of Life: Conceptual Frameworks and Definitions**

The assessment of HRQoL in epilepsy requires a nuanced understanding of how clinical health interacts with subjective well-being. HRQoL is defined as a multidimensional construct encompassing physical, psychological, and social domains of functioning that are affected by a disease and its treatment[3940].

2.2.1 **WHO vs. Epilepsy-Specific Definitions**

The World Health Organization (WHO) has a broad definition of quality of life which encompasses an individual's perception of their position in life in relation to their culture and value system[41]. Generic instruments such as the WHOQOL-BREF are appropriate for comparison purposes, but they may not be sensitive enough to identify particular problems experienced by PWE. [4243].

Epilepsy-specific nuances include:

- Seizure Unpredictability: The psychological distress stemming from the inability to plan daily activities[44].
- Seizure Worry: Persistent fear of injury or social embarrassment[45].
- Medication Toxicity: Unique cognitive and behavioral side effects associated with long-term anti-seizure medication (ASM) use[4647].
- Epilepsy Stigma: Specialized social discrimination targeting individuals with seizure disorders[48].

2.2.2 **The Wilson and Cleary Model**

The Wilson and Cleary (1995) conceptual model integrates clinical variables with patient-perceived outcomes through five levels of analysis[4950]. Wilson and Cleary's model integrate biological variables, symptoms, functional status, and overall quality of life, mediated by individual and environmental factors[51]. This model has been widely adapted for epilepsy research because epilepsy is not only a seizure disorder but also a condition with psychological, cognitive, social, and cultural consequences[5253].

Revised versions emphasize the mediating roles of individual characteristics (e.g., coping mechanisms) and environmental characteristics (e.g., social support) in determining the final HRQoL outcome[54].

Sociodemographic characteristics such as age, sex, marital status, education, and employment influence HRQoL both directly and indirectly[55]. Lower educational status and unemployment are consistently associated with poorer HRQoL due to reduced health literacy, financial insecurity, and social exclusion[5657]. These factors are particularly relevant in Ethiopia, where socioeconomic disparities are pronounced[58].

Clinical characteristics of epilepsy, including seizure frequency, seizure type, duration of illness, and age at onset, are central determinants of HRQoL[59]. Frequent seizures are associated with increased seizure worry, injury risk, and social limitations, which negatively affect HRQoL[60]. However, evidence shows that seizure control alone does not guarantee good HRQoL, highlighting the importance of psychosocial mediators[61].

Treatment factors such as type of antiseizure medication, polytherapy, medication side effects, and adherence significantly influence HRQoL. Polytherapy is consistently associated with poorer HRQoL due to cumulative side effects, including fatigue and cognitive impairment[62]. In Ethiopia, inconsistent medication availability and limited follow-up care may further exacerbate these effects[63].

Psychosocial variables are central mediators between clinical factors and HRQoL. Depression and anxiety are the strongest predictors of poor HRQoL, often exerting a greater impact than seizure frequency[64]. Perceived stigma, particularly prevalent in LMICs, significantly worsens emotional well-being and social functioning[65].

HRQoL is operationalized using the QOLIE-31, which captures epilepsy-specific quality-of-life domains[66]. The tool aligns well with this framework by integrating clinical symptoms, emotional health, cognitive function, treatment burden, and social participation, making it ideal for tertiary-care epilepsy clinics such as Tikur Anbessa Specialized Hospital.

2.2.3 **HRQoL in Epilepsy**

The effect of epilepsy on the health status of people can be considered to involve multiple domains that are separate but interdependent of each other, with each domain adding to health-related quality of life[67]. Emotional well-being is a core domain, with psychiatric comorbidities (depression, anxiety, and social phobia) repeatedly reported as the strongest determinants of poor HRQoL in people with epilepsy[6869]. Depression is common and has been found to be a key factor affecting HRQoL in about 93% of multivariate models investigating quality of life in patients with epilepsy[70]. Anxiety is also the most common complication; it appears in around 90% of the models, and is often associated with the unpredictability of seizures in terms of in the unpredictable whilst epileptic .Social phobia adds to emotional difficulties by fostering social avoidance and seclusion, thus reducing opportunities for interaction and involvement in the community[7172].

Cognitive functioning constitutes another critical domain of HRQoL and encompasses impairments in memory, attention, and concentration[73]. These cognitive deficits may arise from the underlying etiology of epilepsy, the cumulative effects of recurrent seizures, or the sedative and cognitive side effects of anti-seizure medications (ASMs)[7475]. Cognitive impairment has been shown to interfere with daily functioning, occupational performance, and social interaction, thereby exerting a substantial negative impact on overall quality of life.

Social functioning and participation reflect the extent to which epilepsy affects interpersonal relationships, social roles, and community involvement[7677]. Many people with epilepsy conceal their condition due to fear of stigma and discrimination, which can result in restricted social engagement, reduced opportunities for marriage, and diminished participation in social activities[7879]. Such social limitations further exacerbate emotional distress and contribute to poorer HRQoL outcomes.

The physical health and energy/fatigue domain captures the bodily consequences of epilepsy, including seizure-related injuries such as fractures and burns, as well as limitations in physical activity and daily functioning[80]. Fatigue is one of the most frequently reported physical symptoms among people with epilepsy and has been shown to correlate negatively with psychological factors, particularly anxiety levels, further amplifying its adverse effect on quality of life[81].

2.3 **Epilepsy vs. Other Chronic Illnesses**

Epilepsy frequently results in lower HRQoL than other non-neurological chronic conditions. Studies have shown that PWE score lower on emotional and social functioning than outpatients with hypertension, diabetes, or heart disease[8283]. A multi-country study found that epilepsy (mean score 53.3) was associated with poorer summative QoL than asthma (54.3) and chronic kidney disease (54.3)[84].

2.4 **High-Income Countries vs. LMICs**

In HICs, treatment gaps are typically less than 10%, whereas in LMICs, gaps often exceed 75%[8586]. Global mean QOLIE-31 scores are approximately 59.8, varying from 82 in Canada to as low as 42 in lower-income regions[87].

2.5 **Predictors of HRQoL**

Clinical and psychiatric variables are instrumental in the prediction of HRQOL in adults with epilepsy. Seizure freedom—reflecting the basic principle that efficient seizure control is the corner stone for improving patient outcomes—has consistently been reported as the strongest clinical determinant of better HRQoL[88]. On the other hand, those with drug-resistant epilepsy (DRE) have much worse HRQoL, as a result of ongoing seizures, greater burden of treatment and more severe psychosocial stress[8990]. Apart from seizure-related aspects, psychiatric comorbidities—especially depression and anxiety—are identified as the most robust common predictors of worse HRQoL in people of all ages and may have a greater impact on quality-of-life outcomes than clinical factors.[9192]

Medication-related and socioeconomic factors further shape HRQoL outcomes in epilepsy. Patients managed with poly therapy consistently report lower HRQoL compared with those receiving mono therapy, largely due to cumulative adverse effects and increased cognitive and physical burden associated with multiple antiseizure medications[9394]. Socioeconomic determinants, including employment status and educational attainment, are strong positive predictors of HRQoL, as they are associated with greater social participation, financial stability, and health literacy. Conversely, stigma remains a major barrier to optimal quality of life, particularly in low- and middle-income countries, where the prevalence of epilepsy-related stigma has been estimated to reach up to 60%**,** contributing to social exclusion and reduced access to care[95].

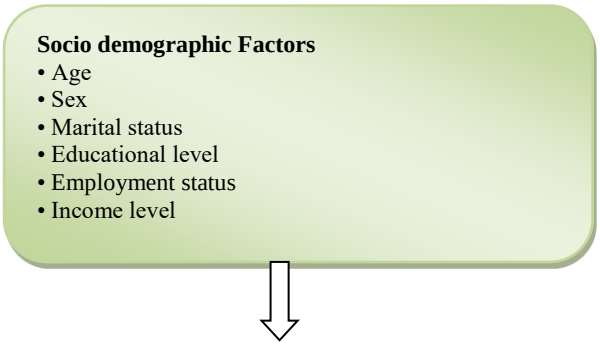
2.6 **Context-Specific Ethiopian Evidence**

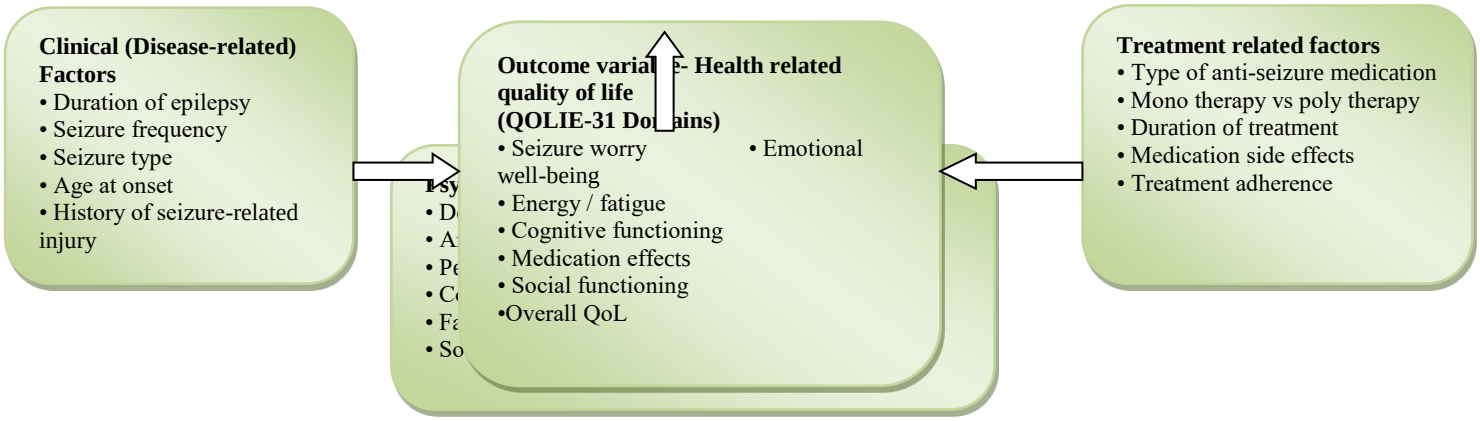
A meta-analysis of 16 studies in Ethiopia found a pooled mean HRQoL score of 52.82 ± 13.24 [9697]. Predictors of poor HRQoL in Ethiopia include illiteracy (AOR = 2.51 to 5.13), comorbid anxiety (AOR = 3.63), and low drug adherence (28, 30).

Tikur Anbessa Specialized Hospital (TASH) Gaps: Tikur Anbessa Specialized Hospital (TASH) data show that 59.6% of patients continue to have seizure activity despite treatment, with 67.8% reporting antiseizure medications related adverse events[98]. High rates of polytherapy are reported (36.3% in pediatric cases)[99]. During the COVID-19 pandemic, 32.6% of patients missed follow-up appointments[100]. The critical gap at TASH remains the lack of systematic HRQoL assessment using validated, epilepsy-specific tools like the QOLIE-31[101102].

2.7 Conceptual framework

A biopsychosocial conceptual framework, rather than a purely biomedical model, is most appropriate for this setting [103104].





3. OBJECTIVES

3.1 General Objective

To evaluate health related quality of life and its associated factors in a sample of people with epilepsy attending a follow-up clinic at TASH, Addis Ababa, Ethiopia from November 2025 to March 2026.

3.2 Specific Objectives

• To measure the mean HRQoL scores of people with epilepsy attending follow-up clinic at TASH.

• To identify clinical determinants of HRQoL, among people with epilepsy

4. METHODS

4.1 Study Area and Period

The study was done at Tikur Anbessa specialized Hospital, Addis Ababa, Ethiopia. TASH (Black Lion Hospital) is the largest tertiary referral and teaching hospital in the country and is a part of the Addis Ababa University College of Health Sciences. Founded in 1964, the hospital consists of approximately 700–800 beds for inpatients and serves as the national referral center for a broad range of highly specialized medical and surgical care, offering advanced medical care to around several hundred thousand outpatients every year.

The study was done from November 2025 to March 2026.

4.2 Study Design

A hospital-based cross-sectional study design was conducted.

4.3 Source Population

The source population included all people with epilepsy on follow-up at the TASH neurology clinic.

4.4 Study Population

All individuals who met the case definition and were followed up at the neurology clinic of Tikur Anbessa Specialized Hospital within the study period were included.

4.5 Inclusion and Exclusion Criterion

4.5.1 Inclusion Criterion

- Age ≥ 18 years
- Confirmed diagnosis of epilepsy by Neurologist or by Neurology resident after consulting Neurologist
- Currently receiving treatment with at least one antiepileptic drug (AED) and on regular Follow up at TASH.
- Willing and able to provide informed consent.
- Ability to communicate in Amharic or English to complete the study questionnaires.

4.5.2 Exclusion Criterion

- Patients with significant cognitive or communication impairments
- Patients with a primary diagnosis of psychogenic non epileptic seizures.
- Patients who have been diagnosed with epilepsy for less than six months
- Patients with severe acute comorbidities which may confound HRQoL assessment

4.6 Sample Size Determination

The size of the sample required for this study is calculated based on the primary aim to estimate the mean HRQoL score among people with epilepsy as measured by the disease-specific questionnaire, the Quality of Life in Epilepsy Inventory-31 (QOLIE-31), a continuous score from 0 to 100.

Accordingly, the sample size was calculated using the single population mean formula:

To calculate the sample size for a mean, we use:

$$n = \frac{(Z(\alpha/2)^2 * \sigma^2}{d^2}$$

were,

n = required sample size

$Z(\alpha/2)$ = standard normal value at 95% confidence level (1.96)

σ = standard deviation of QOLIE-31 score, based on the meta-analysis of Ethiopian studies, the pooled standard deviation of QOLIE-31 total score among adults with epilepsy is 13.24.(28)

d = margin of error (precision) for estimating the mean HRQoL score

For this study, a conservative estimate of σ = 13.24 is used. A margin of error of 2 points is considered acceptable, as this represents a clinically meaningful difference in HRQoL scores.

$$n = \frac{(1.96)^2 * (13.24)^2}{(2)^2}$$

$$n = 168$$

Thus, the initial calculated sample size is 168 participants. Adding 10% non-response rate, the final sample size will be 185**.**

Accordingly, 185 participants have been recruited by a simple random sampling method.

4.7. Study Variables

Dependent Variables

HRQOL in epilepsy measured using the QOLIE-31 health survey

Independent Variables

1.Socio-demographic Factors

- Age and Gender
- Education Level
- Employment Status
- Marital status

2.Clinical and Seizure-Related Factors

- Seizure Frequency and Control
- Seizure Type

- Duration of Epilepsy
- Medical comorbidities

3. Medication-Related Factors

- Anti-Seizure Medication (ASM) Regimen:
- ASM Adverse Events (AE):
- Medication Adherence:

4. Psychiatric and Psychosocial Factors

- Psychiatric Comorbidities:(anxiety and depression),
- Stigma
- Social Support

4.8 Data Collection Methods and Tools

Data were collected using a google doc format that consists of standardized and validated instrument to ensure reliability and comparability. The Quality of Life in Epilepsy Inventory-31 (QOLIE-31) is a survey used to assess the health-related quality of life of adults with epilepsy. It consists of 31 items divided into seven subscales: Seizure Worry, Overall Quality of Life, Emotional Well-being, Energy/Fatigue, Cognitive Functioning, Medication Effects, and Social Functioning. The QOLIE-31 scoring process involves a two-step transformation that converts raw survey responses into a standardized 0–100 scale, where higher values represent better health outcomes. First, individual item responses are linearly scaled so that 0 represents the worst and 100 represents the best possible health state. These items are then averaged into the seven distinct subscales which are ultimately combined into a single total score using a weighted average based on each category's relative impact on a patient's overall well-being.

The instruments were translated into Amharic using the WHO standard forward-backward translation process, ensuring conceptual equivalence: Two independent translators translated the

English questionnaire into Amharic. A separate translator, blinded to the original questionnaire, translated the Amharic version back to English. The translated version was pretested on 5% of the target population to assess clarity and comprehension. Adjustments were be made based on feedback.

Data were collected by interviewing patients and reviewing their medical records. Data were collected in person by trained health professionals. To ensure data quality, all data collectors underwent intensive training on the instruments, interviewing techniques, and confidentiality procedures. Daily supervision, cross-checking of forms, and double data entry were employed to minimize errors and maintain consistency throughout the study.

4.9 Data Quality Control Measures

Training was provided for data collectors prior to data collection. The questionnaires were pretested on 5 % of the sample population. Daily supervision was conducted to ensure completeness and consistency of data. Double data entry and routine data cleaning procedures were applied to minimize errors.

4.10 Data Processing and Analysis

The data were entered, cleaned, and analyzed with the Statistical Package for the Social Sciences version 27 (SPSS 27) for Windows. Descriptive statistics including frequency, mean and median were conducted to describe sociodemographic and clinical characteristics as well as to examine distribution of responses. In addition, bivariate analysis was conducted after checking for assumptions to select candidate variables for the multivariate regression model to identify potential predictors of the outcome variable (HRQoL). Those variables associated with HRQoL at bivariate level were included at a p value of <0.25, and statistical significance was set at p value of <0.05.

4.11 Ethical Considerations

Ethical approval was obtained from the following: the Research and ethics committee of the department of Neurology, which is the IRB of CHS, AAU. All study participants provided written informed consent. Confidentiality of the participants was ensured by assigning them a unique identification number and limiting access to the data. It was a voluntary participation and

the subject has the right to be withdrawn from the study at any time and their care will not be compromised.

5 RESULTS

5.1 Sociodemographic factors

A total of 168 participants were included in the study. The median age of the study population was 30 years (IQR: 22–39). Regarding gender distribution, there was a near-equal representation with a slight male predominance, accounting for 52.4% (n=88) of participants, while females represented 47.6% (n=80). Most of the participants resided in urban areas (82.7%, n=139), compared to 17.3% (n=29) from rural settings.

In terms of marital status, more than half of the participants were single (53.6%, n=90), while 41.7% (n=70) were married or living with a partner. Educational attainment was relatively high in this group; approximately 39.3% (n=66) had reached college or university level and above, and 38.1% (n=64) had completed high school. Only 4.8% (n=8) reported having no formal education.

The religious distribution showed that 54.8% (n=92) of participants were Orthodox Christian, followed by Protestant (24.4%, n=41) and Muslim (20.8%, n=35). Economic assessment revealed a significant financial burden, with nearly half of the participants (48.2%, n=81) reporting no regular monthly income. Among those with a regular income, the largest subgroup (19.6%) earned between 5,000 and 14,999 ETB per month.

Table 1**:** Sociodemographic characteristics of the study participants (N=168), 2026, TASH,

Variable	Category	Frequency (n)	Percentage (%)
Age	Median= 30 IQR=22-39		
Sex	Male	88	52.4
	Female	80	47.6
Residence	Urban	139	82.7
	Rural	29	17.3

Educational Status	No formal education	8	4.8
	Elementary (1–8)	30	17.9
	High School (9–12)	64	38.1
	College/University and above	66	39.3
Marital Status	Single	90	53.6
	Married/Living with partner	70	41.7
	Separated/Divorced	8	4.8
Religion	Orthodox Christian	92	54.8
	Protestant	41	24.4
	Muslim	35	20.8
Average Monthly Income	No regular income	81	48.2
(Ethiopian Birr)	< 5,000 ETB	6	3.6
	5,000 – 14,999 ETB	33	19.6
	15,000 – 24,999 ETB	21	12.5
	> 25,000 ETB	10	6.0
	Prefer not to say/disclose	17	10.1

5.2 Clinical and Health Service Characteristics of Participants (N=168)

5.2.1 Disease Profile

Regarding the clinical profile of the participants, nearly half of the cohort (47.0%, n=79) had been living with epilepsy for more than 10 years, while 33.3% (n=56) had a diagnosis duration of 1 to 5 years.

5.2.2 Seizure Characteristics and Clinical Severity

About 53.6% of the study participants don't know what type of seizure they have been diagnosed with, while 23.2% had Generalized onset seizures followed by 14.9% with focal onset seizures. In assessing clinical severity, 39.9% had 1-2 in 12 months followed by 30.4% had no seizure in the past 12 months and 19.6% had two to three seizures in 6 months. Out of the total 14.3% reported that they have been admitted to a hospital at least once for status epilepticus. Furthermore, a significant portion of the study population (56%, n=94) reported experiencing at

least one comorbid medical condition. The most frequently reported specific medical condition was brain tumor (18.9%) followed closely by Hypertension (16.7%) and heart disease (12.2%) 35.6 % has unspecified medical co- morbidity. Addition, 10.7% reported having been diagnosed with at least one mental health condition. Depression was the most frequently reported condition (50.0%), followed by anxiety disorder (33.3%), and Psychotic Disorders (22.2%).

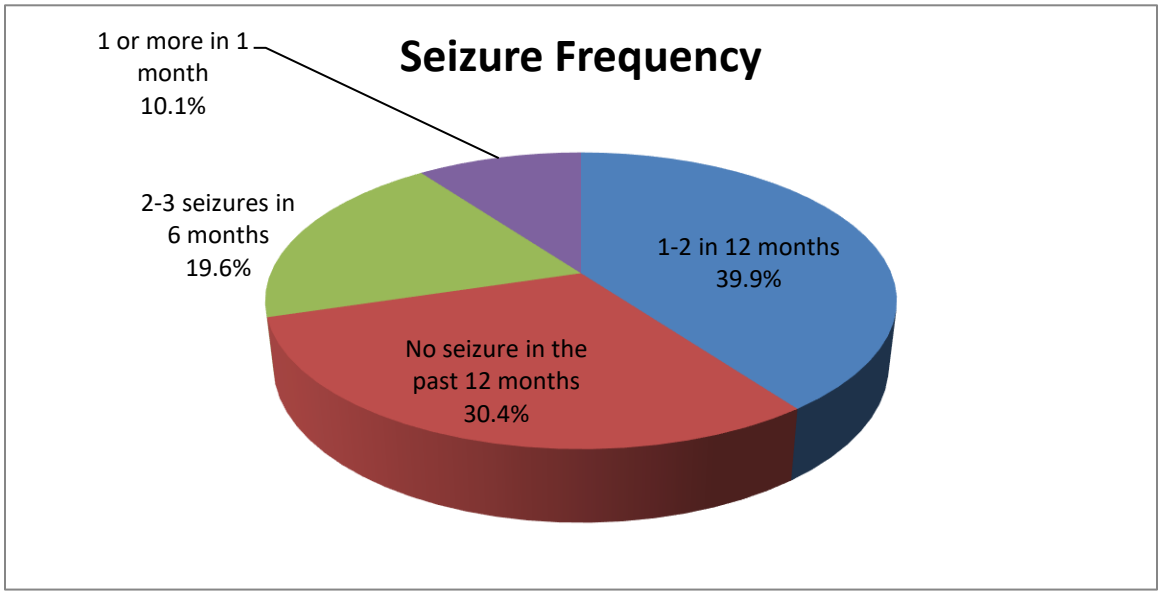


Figure 1 Seizure Frequency among the study participants 2026, TASH,

5.2.3 Treatment Regimen and Medication Adherence

Among the study participants 42.9% has been taking antiepileptic medications for more than 10 years. Regarding treatment complexity, 52.4% were on monotherapy while 47.6% required two or more medications. Most participants 58.9% reported experiencing side effects from their current antiepileptic medications. Among the side effects fatigue/sleepiness was the most common (69.9%) followed by dizziness 54.4% and memory or concentration problem 40.8%. While 68.5% of the cohort reported that they have never missed their medications while the rest 31.5% missed their medication once or more.

5.2.4 Health Service Access and Social Support

Access to healthcare services showed significant variation in travel time; 41.7% (n=70) of participants required 1 to 2 hours to reach the hospital, and a notable 12.5% (n=21) traveled for more than 3 hours. Financial coverage for epilepsy care was predominantly managed through

government or community health insurance (76.2%, n=128), with 14.3% (n=24) paying out-of-pocket. In terms of social support, most patients (52.4%, n=88) identified family members as their primary caregivers, followed by spouses at 32.7% (n=55).

5.3 Health-Related Quality of Life (QOLIE-31)

The quality of life among the study participants (N = 168) was assessed using the QOLIE 31 version 1.0 instrument. 100 means best quality of life and 0 worst. The means total score was 56.71± 14.09. The highest mean scores were observed in the Overall of Quality of Life (64.40 ± 18.25) and Social Functioning (60.45 ± 20.96) domains.

Conversely, the lowest scores were recorded in the Energy/Fatigue (47.94 ± 19.66) and Emotional Well-being (50.79 ±16.31) subscales, suggesting that these areas represent the greatest burden on patient well-being. Notably, the high standard deviations in Seizure Worry (SD = 21.39) and Social Functioning (SD = 20.96), combined with minimum scores of 0.00, indicate significant variability in how individual patients experience the social and psychological impacts of epilepsy.

Table 2**:** Mean score and domain-specific scores of people with epilepsy 2026, TASH

Domain	Mean	SD	Min	Max
Overall Quality of Life	64.40	18.25	17.50	100.00
Social Functioning	60.45	20.96	0.00	100.00
Seizure Worry	58.16	21.39	0.00	100.00
Cognitive Functioning	56.81	19.09	14.17	100.00
Medication Effects	54.51	18.26	16.67	100.00
Emotional Well-being	50.79	16.31	16.00	96.00
Energy/Fatigue	47.94	19.66	5.00	95.00
Total HRQoL Score	**56.71**	**14.09**	**22.20**	**93.31**

,

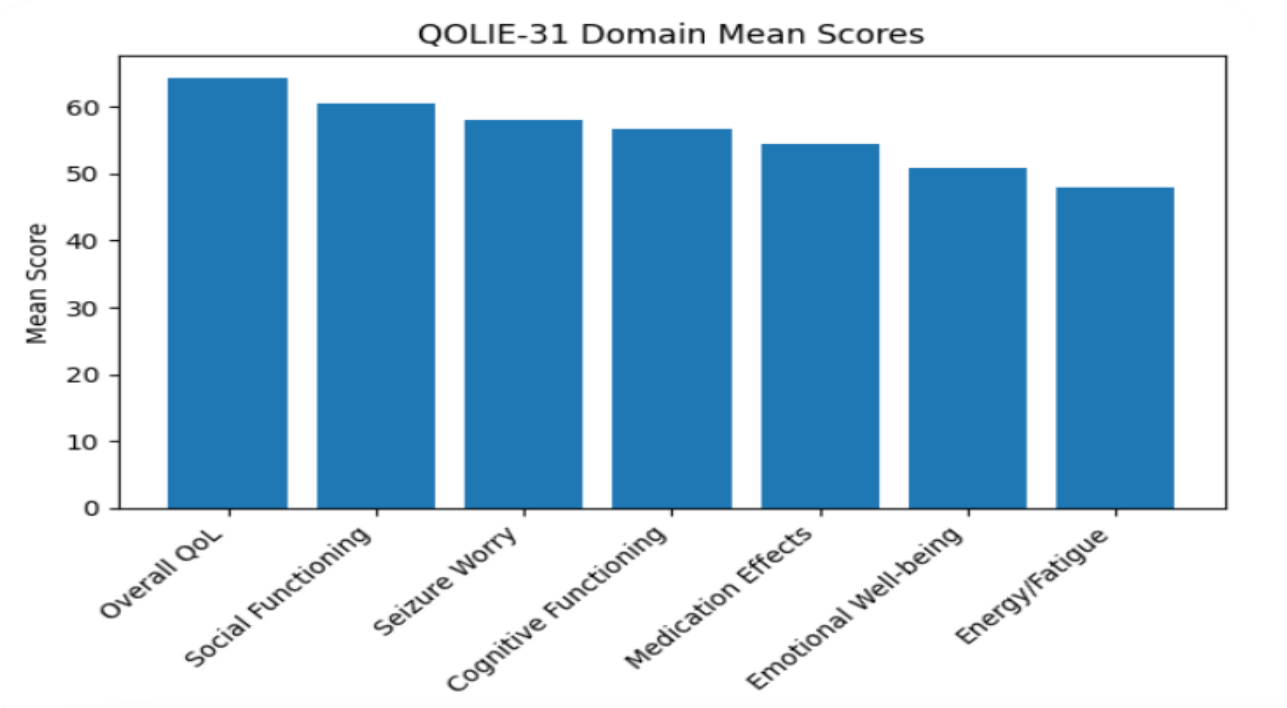


Figure2 Mean Domain Scores of QOLIE-31 among Study Participants2026, TASH,

5.4 Factors Associated with Quality of Life (Bivariate Analysis)

The distribution of the total Quality of Life (QOLIE-31) scores was assessed for normality using the Shapiro-Wilk test. The results indicated that the HRQoL scores significantly deviated from a normal distribution ($p < 0.03$). Consequently, non-parametric statistical methods were used to assess the bivariate analysis.

5.4.1 Statistical Methods Used

Mann-Whitney U Test was used for variables with exactly two categories (e.g., Sex, Comorbidity, Medication Adherence) to compare median HRQoL scores between the two independent groups. Kruskal-Wallis H Test was used for variables with three or more categories (e.g., Employment, Income, Marital Status) to determine if significant differences existed across multiple groups. Spearman's Rank Correlation was used specifically for Age to evaluate the strength and direction of its relationship with the continuous HRQoL scores.

5.4.2 Socio-demographic Determinants

Several socio-demographic factors were significantly associated with the total HRQoL score. Sex and Marital Status were significantly associated. Males reported significantly higher median HRQoL scores than females (56.02 vs. 52.13, P = 0.039). Marital status was also significant (P = 0.023), with divorced patients reporting the lowest median score (46.82) compared to married.

Employment status was a major determinant (P = 0.009); employed patients had higher QOL (56.31) compared to students (50.59). Furthermore, a strong association was found with monthly income (P = 0.002), where patients earning >25,000 ETB reported substantially higher scores (73.51) than those with no regular income (50.71).

Patient Age showed a negligible positive correlation that was not statistically significant (r_s = 0.085, P = 0.273). Similarly, Residence (P = .258) and Educational Status (P = 0.441) did not significantly impact Total HRQoL scores.

Table 3**:** Bivariate analysis of sociodemographic factors associated with HRQoL among people with epilepsy, 2026, TASH,

Variable	**Category**	**Median Total Score**	**p-value (Total QOLIE)**
Age	Correlation (r_s)=0.085		0.273
Sex	Male/Female	56.02/52.13	**0.039**
Residence	Urban / Rural	55.16 / 54.07	**.258**
Educational status	No formal Education	56.93	**0.441**
	Elementary	53.67	
	High school	54.26	
	College/University	55.94	
Marital Status	Single	53.51	**0.023**
	Married	56.88	

	Divorced	46.82	
Religion	Orthodox Christian	53.53	**0.064**
	Protestant	54.53	
	Muslim	58.11	
Employment Status	Employed	56.31	**0.009**
	Unemployed	51.95	
	Student	50.59	
Income (ETB)	<5,000	52.57	**0.002**
	5000-14,999	53.89	
	15000-24,999	60.47	
	>25000	73.51	
	No regular income	50.71	
	prefer not to say	58.93	

5.4.3 Clinical and Treatment-Related Determinants

Clinical factors showed the strongest associations with Quality of Life. Patients who were seizure-free for 12 months had significantly higher HRQoL (64.29) than those with frequent seizures ($P < 0.001$). A history of hospital admission for status epilepticus was associated with significantly lower scores (47.94 vs 55.72, $P < 0.001$).

Patients taking only one ASM reported significantly better score than those on Polytherapy (59.05 vs. 50.21, $P < 0.001$). Additionally, Medication Adherence was critical; patients who never missed their doses had significantly higher scores (56.5) than those who did (50.32, $P = 0.004$). The duration of ASM was also significant (0.037).

The presence of a known medical illness ($P = 0.012$) and a diagnosed mental illness ($P = 0.005$) were significantly associated with reduced HRQoL scores. In addition, the presence of Health insurance was significant ($P=0.023$)

Table 4**:** Bivariate analysis of clinical factors associated with HRQoL among study participants2026, TASH,

Variable	**Category**	**Median Total Score**	**p-value (Total** QOLIE**)**
Who covers the cost of epilepsy care	Out-of-pocket	60.19	0.023
	Community health insurance	53.98	
	Employer insurance	62.94	
	Family support	52.92	
What is the approximate travel time to reach the Hospital from your home	less than 30min	65.98	0.871
	30min to 1 hr.	55.43	
	1 hr. to 2 hr.	55.41	
	2hr to 3 hr.	51.57	
	more than 3 hr.	55.30	
Duration of epilepsy since first diagnosis (Year)	<1	54.67	0.131
	1–5	55.86	
	6–10	56.92	
	>10	51.48	
How long have you been taking antiseizure medication (Years)	<1	54.67	0.037
	1–5	56.95	
	6–10	58.11	
	>10	50.35	
Do you have known medical illness other than Epilepsy	Yes	52.54	0.012
	No	59.62	
Presence of diagnosed Mental illness	Yes	48.53	0.005
	No	55.27	
How many seizures have you had in the past 12months?	No seizure in 12 months	64.29	<0.001
	1-2 in 12months	51.96	
	2-3 in 6months	49.09	
	> 1 in 1month	53.89	
Have you ever missed your antiseizure medication(s)?	Yes	50.32	0.004
	No	56.5	
How many ASM are you currently taking	Monotherapy	59.05	<0.001
	Polytherapy	50.21	
Have you ever experienced side effects from ASM?	Yes	53.89	0.074
	No	56.5	
Type of seizure	Focal	55.16	0.369
	Generalized	62.94	
	Both focal and general	50.27	
	Don’t know	54.10	
Have you ever been admitted	Yes	47.94	<0.001

to hospital for status epilepticus?	No	55.72	

5.5 Multivariate Analysis

To ensure the stability of the multivariable model, multicollinearity was assessed using the Variance Inflation Factor (VIF). A significant collinearity was detected between 'Duration of Epilepsy' and 'Duration of Medication Usage' (VIF > 5). Consequently, 'Duration of Epilepsy' was excluded from the final model to maintain statistical integrity, as 'Duration of Medication Usage' showed a stronger association with the outcome in bivariate analysis

The Backward Elimination method was employed to produce the most parsimonious model. The final model was statistically significant and explained 37.5% of the variance in the total QOLIE score (Adjusted $R^2 = 0.375$).

Among the six variables retained in the final model, five were found to be significant independent predictors of HRQoL ($P < 0.05$): Seizure frequency, presence of comorbid medical illness, duration of ASM usage, employment status, and history of admission for status epilepticus. Seizure frequency emerged as the strongest predictor of poor HRQoL ($\beta = -0.369$, $P < 0.001$). The analysis showed that that as seizure frequency increases, the QOL score drops significantly. Each increase in the frequency category resulted in a 6.29-point drop in the total QOL score. Similarly, the presence of a comorbid medical illness had a profound impact (= -0.337, $p < 0.001$). Patients suffering from additional chronic conditions scored 9.39 points lower than those with epilepsy alone. The model also showed that patients who are taking ASM for longer duration have low quality of life ($\beta = -0.204$, $P = 0.004$). Employment status (= -0.168, $P = 0.014$) was also a significant predictor of better QOL scores. Those who are employed had better quality of life than those who are unemployed or student. The last significant predictor was history of admission for status epilepticus ($\beta = -0.148$, $P = 0.035$): Having a history of admission for status epilepticus reduces the total QOL score by 5.68 points.

Table 5: Multivariate analysis of factors associated with HRQoL among study participants 2026, TASH,

Predictor Variables	Unstandardized B	95% CI for B	Beta (β)	p-value
(Constant)	89.83	(81.04, 98.62)	—	<0.001
Seizure Frequency	-6.29	(-8.64, -3.94)	-0.369	**<0.001***
Medical Illness	-9.39	(-13.22, -5.55)	-0.337	**<0.001***
Duration of Medication	-2.84	(-4.76, -0.93)	-0.204	**0.004***
Employment Status	-2.76	(-4.95, -0.58)	-0.168	**0.014***
History of Admission for Status epilepticus	-5.68	(-10.96, -0.40)	-0.148	**0.035***
Mental Health	-5.32	(-11.41, 0.77)	-0.121	0.086

6 DISCUSSIONS

6.1 Health Related Quality of Life in Epileptic patients

The Study evaluated the health-related quality of life (HRQoL) of people with epilepsy at the epilepsy follow-up clinic at Tikur Anbessa Specialized Hospital with Quality of life in Epilepsy Inventory-31 (QOLIE-31).

The average HRQoL score of the current study was 56.71 ± 14.09. This result was comparable with the HRQoL scores reported on people with epilepsy in Ethiopia and other low-resource countries [105] [106]. Similarly, a global systematic review revealed that the people with epilepsy has moderate to poor HRQoL because of a combination of the factors[107]. The moderate HRQoL score observed in my study may reflect the chronic nature of epilepsy and the multiple challenges faced by patients in managing their condition [108] [109]

The domain-specific analysis of the QOLIE-31 showed variability across different aspects of quality of life. Higher scores were observed in domains related to overall quality of life (64.40 ± 18.25) and social functioning (60.45 ± 20.96), whereas lower scores were seen in energy/fatigue (47.94 ± 19.66) and emotional well-being (50.79 ±16.31). These results imply that one of the most impacted areas of life of epilepsy patients is psychological health and physical vitality. Other studies have also found similar results with fatigue, emotional distress and lower levels of energy being some of the most prevalently reported issues among individuals living with epilepsy[110] [111]. There are various factors that can be attributed to fatigue and emotional disturbances, among them being frequent seizures, chronic medication therapy particularly the older generation drugs of epilepsy like phenobarbital, phenytoin and carbamazepine have significant impact, and the psychological stress of living with a chronic neurological condition [112] [113].

6.2 Factors Associated with HRQoL

6.2.1 Seizure Frequency

Seizure frequency was one of the most important determinants for lower HRQoL. Individuals with more seizures had a significantly lower quality of life. This result is in line with previous research demonstrating that the inability to control seizures leads to higher levels of psychological distress as well as restriction to social engagement. Recurrent seizures may also lead to fear of injury, reduced confidence, and restrictions in employment and social activities, which further contribute to lower HRQoL. [114] [115]

6.2.2 Duration of Antiseizure Medication and ASM side effects

In this study, 58.9% of participants reported medication-related adverse effects, particularly fatigue or sleepiness, dizziness, and cognitive problems such as memory or concentration difficulties. Similar findings have been reported in previous study showing that patients undergoing long-term antiseizure therapy, especially those receiving more than one medication, often experience fatigue, cognitive slowing, and decreased functional capacity, which may contribute to lower HRQoL scores.[116] [117]

In the multivariate analysis, the duration of antiseizure medication use was also associated with HRQoL in the multivariate model, where longer treatment duration was linked to lower quality-of-life scores. Long-term exposure to antiseizure medications may increase the risk of adverse effects such as fatigue, cognitive impairment, and mood changes, which may negatively affect HRQoL. [118] [119]

6.2.3 The presence of Medical Illness

In this study, 56% of participants had at least one medical comorbidity, indicating a substantial additional disease burden among people with epilepsy. The presence of comorbid medical conditions may complicate treatment management and negatively influence patients' overall well-being and quality of life [120]. Previous studies have reported that individuals with epilepsy frequently experience other chronic medical conditions, which increase healthcare utilization and treatment complexity and ultimately affect patient-reported outcomes. [121] [122]

Consistent with these findings, the presence of a medical illness in the current study was significantly associated with health-related quality of life (HRQoL)**.** Patients with additional

chronic illnesses reported significantly lower QOLIE-31 scores compared with those without comorbidities. This may be explained by the increased overall disease burden and the challenges in clinical management posed by multiple health conditions, which can negatively affect patients' physical, psychological, and social functioning.[123] [124]

6.2.4 Employment status

Employment status was significantly associated with quality-of-life outcomes, with unemployed individuals reporting poorer HRQoL compared with employed patients. Employment provides financial stability, social interaction, and a sense of independence, which contribute positively to psychological well-being.[125] [126] Conversely, unemployment among people with epilepsy is often related to stigma, and functional limitations due to seizures. [127] [128]

6.2.5 History of Hospital Admission for Status Epilepticus

A history of hospital admission for status epilepticus was also associated with lower HRQoL scores. Status epilepticus is a severe neurological emergency that may result in prolonged hospitalization, neurological complications, and psychological distress [129]. Patients who have experienced such events may develop persistent anxiety regarding seizure recurrence, which negatively affects emotional well-being and overall quality of life.[130]

6.2.5 The presence of comorbid Mental Illness

In this study, the proportion of participants with diagnosed mental health conditions was 10.7%**.** This finding is relatively lower compared with other studies, where psychiatric disorders such as depression and anxiety are commonly reported among people with epilepsy [131] [132]. This lower prevalence may reflect under diagnosis or underreporting of mental health problems**,** particularly in settings where routine psychiatric screening is limited and stigma surrounding mental illness persists. [133] Although psychiatric comorbidities were significantly associated with quality of life in the bivariate analysis, the association did not remain significant in the multivariate model. Nevertheless, psychiatric comorbidities remain important because they are known to negatively affect emotional well-being, social functioning, and overall quality of life in people with epilepsy.[134]

7 CONCLUSIONS AND RECOMMENDATION

7.1 Conclusion

A hospital-based cross-sectional study was conducted to evaluate the HRQoL of epilepsy patients attending at a follow-up clinic of Tikur Anbessa Specialized Hospital using Quality of Life in Epilepsy Inventory-31 (QOLIE-31). The participants' overall HRQoL was rated as moderate in this study, which suggests that epilepsy still exerts a strong influence on the physical, psychological, and social well-being of its patients.

The study identified several factors associated with HRQoL among people with epilepsy. Sociodemographic and clinical factors showed significant associations in the bivariate analysis, while selected variables remained independently associated with HRQoL in the multivariate analysis. Clinical factors such as seizure control, presence of comorbid medical illness, and duration of anti-seizure medications usage, History of admission to a hospital for status epilepticus and unemployment status were important determinants of reduced quality of life.

These findings highlight that the management of epilepsy should not focus solely on seizure control but should also address broader aspects affecting patients' well-being. Improving seizure management, minimizing medication adverse effects, and addressing comorbid conditions are important to enhance the overall quality of life of people with epilepsy.

7.2 Limitation

1. The study was conducted only at Tikur Anbessa Specialized Hospital, which may limit the generalizability of the findings to epilepsy patients receiving care in other hospitals or community settings in Ethiopia.
2. Psychiatric conditions such as depression and anxiety were not assessed using standardized diagnostic tools. Therefore, psychiatric comorbidities may have been

underdiagnosed or underreported, which could influence the assessment of health-related quality of life.

3. The study included only people with epilepsy who were attending the epilepsy follow-up clinic. Patients who do not regularly attend follow-up or those managed in other healthcare settings were not included, which may limit the representativeness of the study population

7.3 Recommendation

For Healthcare Providers

- Healthcare professionals should routinely assess the quality of life of epilepsy patients during follow-up visits to identify factors negatively affecting patients' well-being.
- Clinicians should carefully monitor and manage adverse effects of anti-seizure medications and consider treatment adjustments when necessary.
- Screening and management of comorbid medical and mental health conditions should be integrated into epilepsy care.

For Health Institutions

- Hospitals and specialized clinics should incorporate comprehensive epilepsy care that includes psychosocial support and patient counseling in addition to seizure management.
- Strengthening follow-up systems and patient education programs may improve treatment adherence and seizure control.

For Future Researchers

- Further studies involving multiple healthcare institutions are recommended to improve the generalizability of findings.

• Prospective studies are warranted to establish the causal nature of the relationship among the various factors and quality of life in epilepsy.

Dissemination Plan and Use of Findings

The result of the study would be disseminated by presentation to the Department of Neurology and TASH. The result shall be submitted to the AAU for the academic consideration and will be prepared for publication in peer reviewed scientific journals. The results from this study will help to enhance patient counseling and care as well as long-term follow up for people with epilepsy.

Source of Research Fund:

The resources and financial assistance required for this study were sourced from the College of Health Sciences /School of Medicine research budget at Addis Ababa University.

Annex

Data collection questionnaire

Section I: Socio-Demographic Data

No.	Question / Variable	Response Options
1	Name/ID of the interviewer	_____
2	I care / MRN	_____
3	Age (in completed years)	[_____] Years
4	Sex	[] 1. Male [] 2. Female
5	Residence	[] 1. Urban [] 2. Rural
6	Education Status	[] 1. No formal Education [] 2. Elementary [] 3. High school [] 4. College/University and Above
7	Current employment status	[] 1. Employed (full-time) [] 2. Employed (part-time) [] 3. Self-employed [] 4. Unemployed [] 5. Student [] 6. Retired
8	Average monthly Income (Ethiopian Birr)	[] 1. <5,000 ETB [] 2. 5,000–14,999 ETB [] 3. 15,000–24,999 ETB [] 4. >25,000 ETB

No.	Question / Variable	Response Options
		[] 5. No regular income [] 6. Prefer not to say
9	Marital Status	[] 1. Single [] 2. Married / Living with partner [] 3. Separated [] 4. Divorced [] 5. Widowed
10	Living Arrangement	[] 1. Living alone [] 2. Living with spouse/partner [] 3. Living with family [] 4. Living with others
11	How do you cover the cost of epilepsy care?	[] 1. Out-of-pocket [] 2. Government/Community health insurance [] 3. Employer insurance [] 4. Family support [] 5. Other: _____
12	Religion	[] 1. Orthodox Christian [] 2. Muslim [] 3. Protestant [] 4. Catholic [] 5. Others
13	Travel time to Health facility	[] 1. Less than 30 min [] 2. 30 min to 1 hr. [] 3. 1 hr. to 2 hr. [] 4. 2 hr. to 3 hr.

No.	Question / Variable	Response Options
		[] 5. More than 3 hr.
14	Who regularly helps for your epilepsy care?	[] 1. Family [] 2. Friend [] 3. Spouse [] 4. Paid caregiver [] 5. No one [] 6. Other: _____

Section II: Clinical Questionnaire

No.	Question / Variable	Response Options
15	Duration of epilepsy since first diagnosis	[] 1. Less than 1 year [] 2. 1–5 years [] 3. 6–10 years [] 4. More than 10 years
16	Duration of treatment for epilepsy	[] 1. Less than 1 year [] 2. 1–5 years [] 3. 6–10 years [] 4. More than 10 years
17	Known medical illness other than Epilepsy?	[] 1. Yes [] 2. No
18	If "Yes" to Q17, select all that apply	[] Hypertension [] Stroke [] Brain Tumor [] CNS infection [] Previous TBI [] Cerebral palsy [] Autoimmune disease [] Genetic/Developmental [] Substance use [] Diabetes [] heart disease [] CKD [] Liver disease [] HIV/AIDS [] lung disease [] Neurodegenerative
19	Diagnosed with any mental health condition?	[] 1. Yes [] 2. No
20	If "Yes" to Q19, select all that apply	[] Depression [] Anxiety [] Bipolar [] Psychotic disorder [] Substance use [] PNES

No.	Question / Variable	Response Options
21	Seizures in the past 12 months	[] 1. No seizure in 12 months [] 2. 1–2 in 12 months [] 3. 2–3 in 6 months [] 4. 1 or more in 1 month
22	Medication frequency per day	[] 1. Once or less [] 2. Twice [] 3. More than two times
23	Have you ever missed your medication?	[] 1. Yes [] 2. No
24	If "Yes" to Q23, frequency in past 3 months	[] 1. Once [] 2. Twice [] 3. Three times or more
25	Number of antiseizure medications taking	[] 1. One [] 2. Two or More
26	Experienced side effects from medication?	[] 1. Yes [] 2. No
27	If "Yes" to Q26, select all that apply	[] Fatigue/Sleepiness [] Dizziness [] Memory/Concentration [] Mood changes [] Gastrointestinal [] Skin rash
28	Type of seizures diagnosed	[] 1. Focal onset [] 2. Generalized onset [] 3. Both [] 4. Do not know
29	Sustained an injury during a seizure?	[] 1. Yes [] 2. No
30	Admitted for prolonged seizures/status?	[] 1. Yes

No.	Question / Variable	Response Options
		[] 2. No

QUALITY OF LIFE IN EPILEPSY
QOLIE-31 (*Version 1.0*)

Patient Inventory

Do Not Write in This Space

Today's Date___/___/___

Patient's Name_____

Patient's ID#_____

Gender: ☐ **Male** ☐ **Female** **Birthdate**___/___/___

INSTRUCTIONS

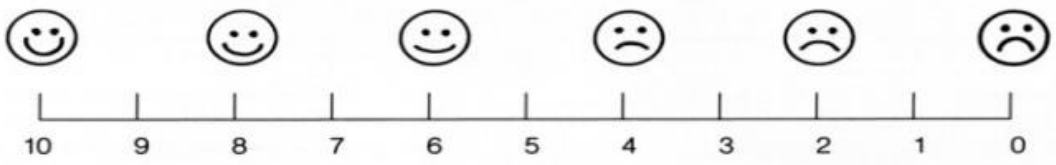
This survey asks about your health and daily activities. **Answer every question** by circling the appropriate number (1, 2, 3 . . .).

If you are unsure about how to answer a question, please give the best answer you can and write a comment or explanation in the margin.

Please feel free to ask someone to assist you if you need help reading or marking the form.

1. Overall, how would you rate your quality of life?

(Circle one number on the scale below)



Best Possible Quality of Life

Worst Possible Quality of Life

(as bad as or worse than being dead)

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These questions are about how you **FEEL** and how things have been for you during the **past 4 weeks**. For each question, please indicate the one answer that comes closest to the way you have been feeling.

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How much of the time during the **past 4 weeks**. . .

(Circle one number on each line)

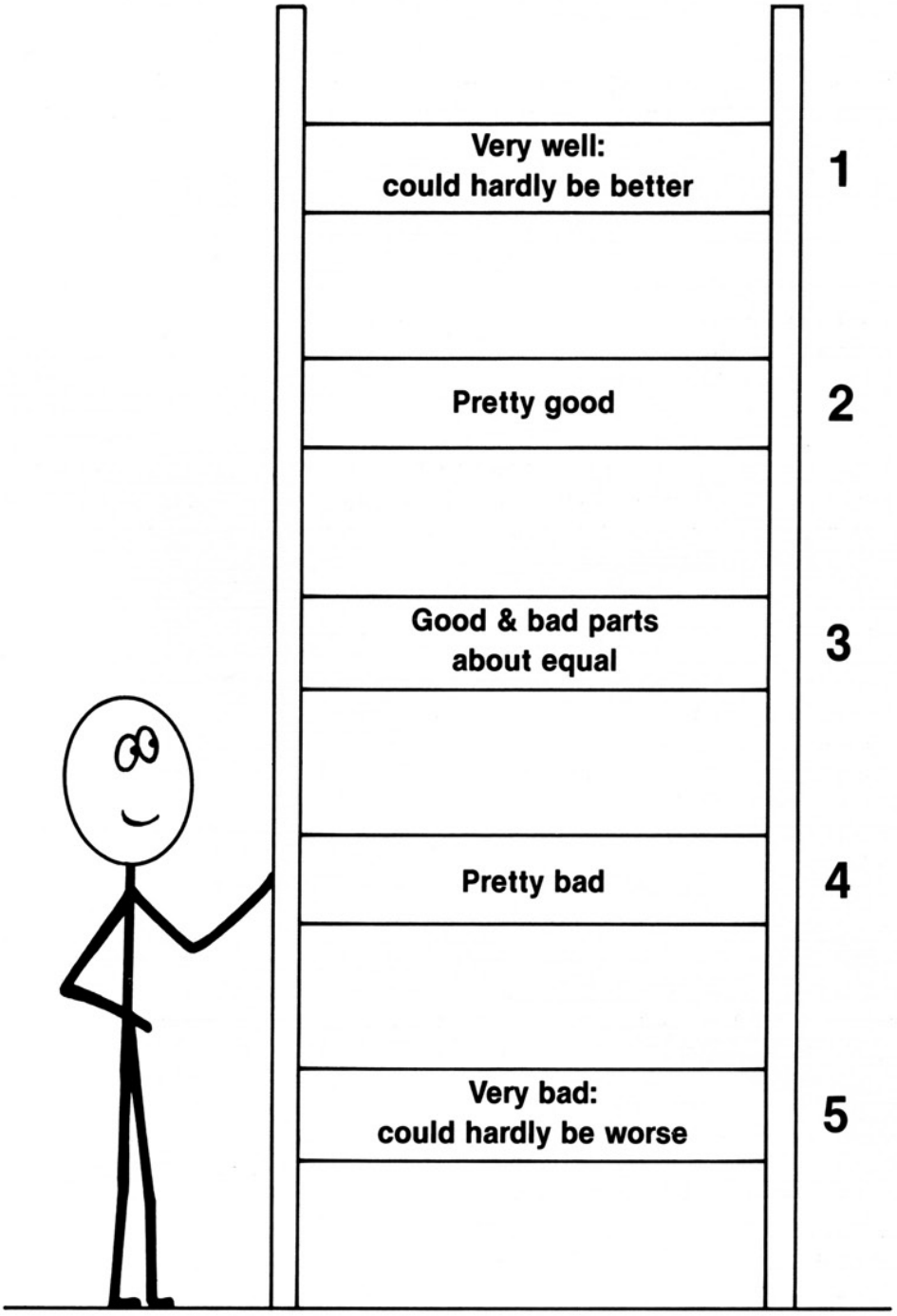
		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
2.	Did you feel full of pep?	1	2	3	4	5	6
3.	Have you been a very nervous person?	1	2	3	4	5	6
4.	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
5.	Have you felt calm and peaceful?	1	2	3	4	5	6
6.	Did you have a lot of energy?	1	2	3	4	5	6
7.	Have you felt downhearted and blue?	1	2	3	4	5	6
8.	Did you feel worn out?	1	2	3	4	5	6
9.	Have you been a happy person?	1	2	3	4	5	6
10.	Did you feel tired?	1	2	3	4	5	6
11.	Have you worried about having another seizure?	1	2	3	4	5	6
12.	Did you have difficulty reasoning and solving problems (such as making plans, making decisions, learning new things)?	1	2	3	4	5	6
13.	Has your health limited your social activities (such as visiting with friends or close relatives)?	1	2	3	4	5	6

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14. How has the **QUALITY OF YOUR LIFE** been during the **past 4 weeks** (that is, how have things been going for you)?

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(Circle one number)



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The following question is about **MEMORY**.

(Circle one number)

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		Yes, a great deal	Yes, somewhat	Only a little	No, not at all
15.	In the past 4 weeks, have you had any trouble with your memory?	1	2	3	4

Circle one number for **how often** in the **past 4 weeks** you have had trouble *remembering* or **how often** this memory problem has interfered with your normal work or living.

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
16.	Trouble remembering things people tell you	1	2	3	4	5	6

The following questions are about **CONCENTRATION** problems you may have. Circle one number for **how often** in the **past 4 weeks** you had trouble concentrating or **how often** these problems interfered with your normal work or living.

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
17.	Trouble concentrating on reading	1	2	3	4	5	6
18.	Trouble concentrating on doing one thing at a time	1	2	3	4	5	6

The following questions are about problems you may have with certain **ACTIVITIES**. Circle one number for **how much** during the **past 4 weeks** your epilepsy or antiepileptic medication has caused trouble with . . .

		A great deal	A lot	Somewhat	Only a little	Not at all
19.	Leisure time (such as hobbies, going out)	1	2	3	4	5
20.	Driving	1	2	3	4	5

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The following questions relate to the way you **FEEL** about your **seizures**.
(Circle one number on each line)

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		Very fearful	Somewhat fearful	Not very fearful	Not fearful at all
21.	How fearful are you of having a seizure during the next month?	1	2	3	4

		Worry a lot	Occasionally worry	Don't worry at all
22.	Do you worry about hurting yourself during a seizure?	1	2	3

		Very worried	Somewhat worried	Not very worried	Not at all worried
23.	How worried are you about embarrassment or other social problems resulting from having a seizure during the next month?	1	2	3	4
24.	How worried are you that medications you are taking will be bad for you if taken for a long time?	1	2	3	4

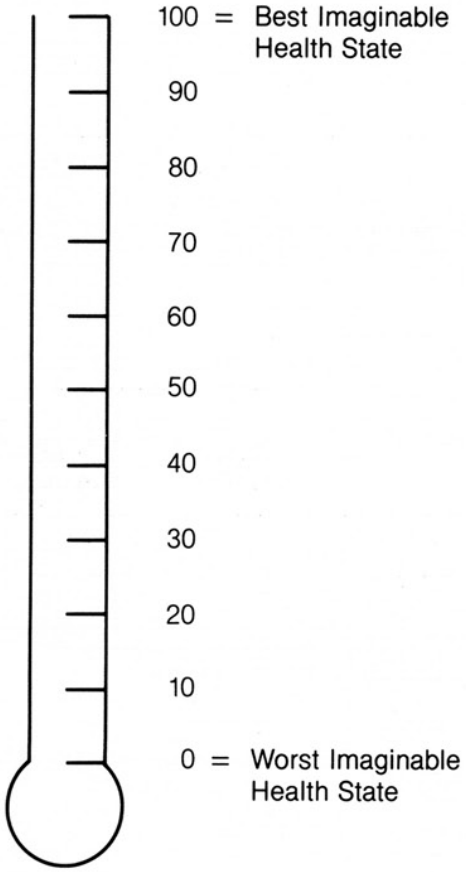
For each of these **PROBLEMS**, circle one number for **how much they bother you** on a scale of 1 to 5 where 1 = Not at all bothersome, and 5 = Extremely bothersome.

		Not at all bothersome				Extremely bothersome
25.	Seizures	1	2	3	4	5
26.	Memory difficulties	1	2	3	4	5
27.	Work limitations	1	2	3	4	5
28.	Social limitations	1	2	3	4	5
29.	Physical effects of antiepileptic medication	1	2	3	4	5
30.	Mental effects of antiepileptic medication	1	2	3	4	5

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31. How good or bad do you think your health is? On the thermometer scale below, the best imaginable state of health is 100 and the worst imaginable state is 0. Please indicate how you feel about your health by circling one number on the scale. **Please consider your epilepsy as part of your health when you answer this question.**

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Comments (if any)

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AMHARIC VERSIONS OF QUESTIONNAIRE

ክፍል 1፡ማህበራዊ ና ስነ-ህዝባዊ መረጃዎች (Socio-Demographic Data)

ተ.ቁ	ተለዋዋጭ (መረጃ)	የምርጫ አማራጮች
01	ዕድሜ	[ ] _____ ዓመት
02	ፆታ	1. ወንድ 2. ሴት
03	የመኖሪያ አካባቢ	1. ከተማ 2. ገጠር
04	የትምህርት ደረጃ	1. መደበኛ ትምህርት ያልተማረ 2. የመጀመሪያ ደረጃ ትምህርት ቤት 3. ሁለተኛ ደረጃ ትምህርት ቤት 4. ኮሌጅ/ዩኒቨርሲቲ እና ከዚያ በላይ
05	የአሁኑ የሥራ ሁኔታ	1. ተቀጥሮ የሚሰራ (ሙሉጊዜ) 2. ተቀጥሮ የሚሰራ (የትርፍ ሰዓት) 3. የግል ሥራ 4. ሥራ አጥ 5. ተማሪ 6. ጡረታ ወጥተዋል
06	የወር ገቢ መጠን	1. < 5,000 የኢት ብር 2. 5,000 - 14,999 የኢት ብር 3. 15,000 - 24,999 የኢት ብር 4. > 25,000 የኢት ብር 5. መደበኛ ገቢ የለም 6. ለመናገር አልፈልግም
07	የጋብቻ ሁኔታ	1. ያላገባ 2. ያገባ

		3. ተለያይተዋል 4. የተፋታ 5. በሞት የተለየ
08	በአሁኑ ጊዜ ከማን ጋርይኖራሉ?	1. ብቻዬን 2. ከትዳር ጓደኛ ጋር 3. ከቤተሰብ (ወላጆች/ዘመዶች) ጋር 4. ከሌሎች ጋር
09	የሕክምና ወጪዎን እንዴት ይሸፍናሉ?	1. በራሴ (ከኪስ) 2. በመንግስት/በማህበረሰብ የጤና መድን 3. በአሰሪ ዋስትና 4. በቤተሰብ ድጋፍ 5. ሌላ
10	ሃይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ
11	ከቤትዎ ወደ ሆስፒታል ለመድረስ የሚፈጅብዎ የጉዞ ጊዜ?	1. ከ30 ደቂቃ በታች 2. ከ30 ደቂቃ - 1 ሰዓት 3. ከ1 - 2 ሰዓት 4. ከ2 - 3 ሰዓት 5. ከ3 ሰዓት በላይ
12	በመደበኛነት የሚንከባከብዎት/የሚረዳዎት ማንነው?	1. ቤተሰብ 2. ጓደኛ

		3. የትዳ ርዳደኛ 4. ተቀጥሮ የሚንከባከብ ሰው 5. ማንም የለም 6. ሌላ

ክፍል 2፡ክሊኒካዊ መረጃዎች (Clinical Characteristics)

ተ.ቁ	ተለዋዋጭ (መረጃ)	የምርጫ አማራጮች
13	የሚጥል በሽታ እንዳለብዎ ካወቁ ምን ያህል ጊዜ ሆኖዎታል?	1. ከ1 ዓመት በታች 2. ከ1–5 ዓመት 3. ከ6–10 ዓመት 4. ከ10 ዓመት በላይ
14	ፀረ-የሚጥል መድኃኒቶችን መውሰድ ከጀመሩ ምን ያህል ጊዜ ሆኖዎታል?	1. ከ1 ዓመት በታች 2. ከ1–5 ዓመት 3. ከ6–10 ዓመት 4. ከ10 ዓመት በላይ
15	ከሚጥል በሽታ ሌላ ተጨማሪ ህመም (በሽታ) አለብዎት?	1. አዎ 2. የለም
16	ለጥያቄ ቁጥር 15 መልስዎ"አዎ"ከሆነ በየትኛው በሽታ ተመርምረዋል?	[ ] የደምግፊት [ ] ስትሮክ [ ] የአንጎል ዕጢ [ ] የነርቭ ሥርዓት ኢንፌክሽን [ ] የአንጎል ጉዳት [ ] ሴሬብራል ፓልሲ [ ] ስኳር [ ] የልብ ሕመም [ ] የኩላሊት በሽታ [ ] የጉበት በሽታ [ ] ኤች አይ ቪ/ኤድስ [ ] አስም [ ] ሌላ
17	በሐኪም የተረጋገጠ የአእምሮ ጤና ችግር አለብዎት?	1. አዎ 2. የለም
18	ለጥያቄ ቁጥር 17 መልስዎ"አዎ"ከሆነ የትኛውነው?	1. የመንፈስ ጭንቀት (ድብርት) 2. የጭንቀት መዛባት 3. ባይፖላር ዲስኦርደር 4. የስነ-ልቦና መዛባት 5. የሱሰኝነት ችግር

		6. ሳይኮጂኒክ ነን-ኤፒሌፕቲክ ሴዞር (PNES)
19	ባለፉት 12 ወራት ውስጥ ስንት ጊዜ የሚጥል በሽታ (መንቀጥቀጥ) አጋጥሞዎታል?	1. ምንም አላጋጠመኝም 2. አንድ ወይም ሁለት ጊዜ 3. ከሦስት እስከ አምስት ጊዜ 4. በወር አንድ ወይም ከዚያ በላይ
20	መድኃኒትዎን በቀን ስንት ጊዜ ይወስዳሉ?	1. አንድ ጊዜ (ወይም ከዚያ በታች) 2. ሁለት ጊዜ 3. ከሁለት ጊዜ በላይ
21	የሚጥል በሽታ መድኃኒትዎን ሳይወስዱ የቀሩበት (ያመለጡበት) ጊዜ አለ?	1. አዎ 2. የለም
22	ለጥያቄ ቁጥር 21 መልስዎ"አዎ"ከሆነ ባለፉት 3 ወራት ውስጥ ስንት ጊዜ አምልጦዎታል?	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሦስት ጊዜ ናከዚያ በላይ
23	በአሁኑ ጊዜ ስንት ዓይነት የፀረ-የሚጥል መድኃኒቶችን እየወሰዱ ነው?	1. አንድ ዓይነት ብቻ 2. ሁለትና ከዚያ በላይ
24	የመድኃኒቱ የጎንዮሽ ጉዳት አጋጥሞዎት ያውቃል?	1. አዎ 2. አያውቅም
25	ለጥያቄቁጥር 24 መልስዎ"አዎ"ከሆነ ምንዓይነ ትጉዳት አጋጠመዎት?	[ ] ድካም [ ] መፍዘዝ [ ] የማስታወስ/የትኩረት ችግር [ ] የስሜት መለዋወጥ [ ] የጨጓራ ህመም [ ] የቆዳ ሽፍታ
26	የሚጥል በሽታዎ ዓይነት?	1. የትኩረት ጅምር (Focal) 2. አጠቃላይ ጅምር (Generalized) 3. ሁለቱም 4. አላውቅም
27	በሚጥልዎት ወቅት (በበሽታው ምክንያት) የአካል ጉዳት አጋጥሞዎት ያውቃል?	1. አዎ 2. የለም
28	በበሽታው ምክንያት ለረጅም ጊዜ	1. አዎ

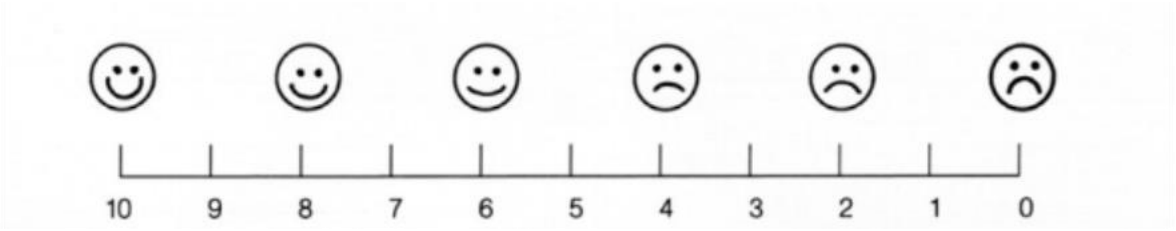
	ሆስፒታል ተኝተው ያውቃሉ?	2. የለም

QOLIE-31

መመሪያ፦ይህ መጠይቅ ስለጤናዎ እና ስለ ዕለት ተዕለት እንቅስቃሴዎ ይጠይቃል።እባክዎን ለእያንዳንዱ ጥያቄ ተገቢውን ቁጥር በመክበብ ይመልሱ።ለአንድ ጥያቄ እርግጠኛ ካልሆኑ፣የተሰማዎትን የተሻለ መልስ ይስጡ።

1. በአጠቃላይ፣የእርስዎን የሕይወት ጥራት እንዴት ይመዝኑታል?

(ከዚህ በታች ካለው መለኪያ ላይ አንዱ ንቁጥር ያክብቡ)



10 ሊኖር የሚችል ምርጥ የሕይወት ጥራት **0** - ሊኖር የሚችል በጣም መጥፎ

ክፍል 1፡ባለፉት 4 ሳምንታት የነበረዎት ስሜት

ባለፉት 4 ሳምንታት ውስጥ ምን ያህል ጊዜ የሚከተሉት ስሜቶች ተሰምተውዎታል?

ተ.ቁ	ጥያቄ	ሁልጊዜ (1)	አብዛኛውንጊዜ (2)	በመጠኑ (3)	አል ፎአልፎ (4)	በጣም ጥቂት ጊዜ (5)	በጭራሽ (6)
2.	ንቁና ፈጣን እንደሆኑ ተሰምቶዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
3.	በጣም ጭንቀታም ሰው ነበሩ?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
4.	ምንም ነገር ሊያስደስትዎት በማይችል መልኩ ተከፍተው ነበር?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
5.	የመረጋጋት እና የሰላም ስሜት ተሰምቶዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
6.	ከፍተኛ ጉልበት ነበረዎት?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
7.	ልብዎ ተሰብሮ ወይም አዝነው	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

	ነበር?						
8.	አቅም እንደሌለዎት ወይም እንደዛሉ ተሰምቶዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
9.	ደስተኛ ሰው ነበሩ?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
10.	የድካም ስሜት ተሰምቶዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
11.	ሌላ የሚጥል በሽታ (መንቀጥቀጥ) ይነሳብኛል ብለው ተጨንቀዋል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
12.	የማሰብ ወይም ችግሮችን የመፍታት ችግር (ለምሳሌ፡ ዕቅድማውጣት፣መወሰን) አጋጥሞዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
13.	ጤናዎ ከሰዎች ጋር የሚያደርጉትን ማህበራዊ ግንኙነት ገድቦብዎታል?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

14. ባለፉት 4 ሳምንታት ውስጥ የሕይወትዎ ጥራት በአጠቃላይ ምን ይመስልነበር?

1. በጣም ጥሩ፡-ከዚህ በላይ ሊሻሻል አይችልም
2. በጣም ደህና
3. ጥሩእና መጥፎ ጎኖቹ እኩል ናቸው
4. በጣም መጥፎ
5. እጅግ በጣም መጥፎ፡-ከዚህ በላይ ሊባባስ አይችልም

ክፍል 2፡ማስታወስ እና ትኩረት ማድረግ (Memory & Concentration)

15. ባለፉት 4 ሳምንታት ውስጥ በማስታወስ ችሎታዎ ላይ ችግር አጋጥሞዎታል?

1. አዎ፣በከፍተኛ ደረጃ

2. አዎ፣በመጠኑ

3. በትንሹ ብቻ

4. በጭራሽ የለም

16. ሰዎች የሚነግሩዎትን ነገሮች የማስታወስ ችግርምን ያህል ጊዜ ያጋጥምዎታል? (1. ሁልጊዜ፣ 2. አብዛኛውንጊዜ፣ 3. በመጠኑ፣ 4. አንዳንድጊዜ፣ 5. አልፎአልፎ፣ 6. በጭራሽ)

ባለፉት 4 ሳምንታት ውስጥ የሚከተሉት ችግሮች ምን ያህል ጊዜ አጋጥመውዎታል?

ተ.ቁ	**ጥያቄ**	**ሁል ጊዜ (1)**	**አብዛኛው ንጊዜ (2)**	**በመጠኑ (3)**	**አንዳንድጊዜ (4)**	**አልፎ (5)**	**በጭራሽ (6)**
17.	ንባብ ላይ ትኩረት ማድረግ	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

18.	በአንድ ጊዜ አንድን ነገር ብቻ ማከናወን	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

ክፍል 3፡ተግባራት እና ስሜቶች (Activities & Feelings)

ባለፉት 4 ሳምንታት በሽታው ወይም መድኃኒቱ በሚከተሉት ላይ ምን ያህል ችግር ፈጥሮብዎታል?

ተ.ቁ	**ተግባር**	**ከፍተኛ (1)**	**ብዙ (2)**	**በመጠኑ (3)**	**ትንሽ (4)**	**በጭራሽ (5)**
19.	የመዝናኛ ጊዜ (ለምሳሌ፡የትርፍ ጊዜ ማሳለፊያ)	[ ]	[ ]	[ ]	[ ]	[ ]
20.	መኪና መንዳት	[ ]	[ ]	[ ]	[ ]	[ ]

21. በሚቀጥለው ወር የሚጥል በሽታ ይነሳብኛል ብለውም ንያህል ይፈራሉ?

1. በጣም እፈራለሁ
2. በመጠኑ እፈራለሁ
3. ብዙም አልፈራም
4. በጭራሽ አልፈራም

22. በሽታው በሚነሳብዎት ወቅት ራስዎን ስለ መጉዳት ይጨነቃሉ?

1. በጣም እጨነቃለሁ
2. አልፎ እጨነቃለሁ
3. በጭራሽ አልጨነቅም

23. በሽታው በሚነሳብዎት ወቅት ሊያጋጥሙ የሚችሉ ማህበራዊ ችግሮች (ለምሳሌ፡መሳቀቅ) ምን ያህል ያሳስብዎታል?

1. በጣም እጨነቃለሁ
2. በመጠኑ እጨነቃለሁ
3. ብዙም አልጨነቅም
4. በጭራሽ አልጨነቅም

24. የሚወስዱት መድኃኒት ለረጅም ጊዜ ሲወሰድ ጉዳት ያመጣል ብለው ምን ያህል ይጨነቃሉ?

1. በጣም እጨነቃለሁ
2. በመጠኑ እጨነቃለሁ

3. ብዙም አልጨነቅም

4. በጭራሽ አልጨነቅም

ክፍል 4፡የችግሮች ክብደት (Bothersomeness)

የሚከተሉት ችግሮች ከ 1 (በጭራሽ አያሳስቡኝም) እስከ 5 (በጣም ያሳስቡኛል) ባለው መለኪ ያምን ያህል ያ ውኩዎታል?

ተ.ቁ	**ችግር**	**በጭራሽ (1)**	**በትንሹ 2)**	**በመጠኑ (3)**	**በጣም (4)**	**እጅግበጣም (5)**
25.	የሚጥል በሽታ (መንቀጥቀጥ)					
26.	የማስታወስ ችግር					
27.	የሥራ ገደቦች					
28.	የማህበራዊ ግንኙነት ገደቦች					
29.	የመድኃኒቱ አካላዊ ተፅዕኖዎች					
30.	የመድኃኒቱ አእምሮአዊ ተፅዕኖዎች					

31. በአጠቃላይ ጤናዎ ምን ያህል ጥሩ ወይምም መጥፎ ነው?

(ከ 0 እስከ 100 ባለው መለኪያ ያክብቡ)

100 (ምርጥ) — 90 — 80 — 70 — 60 — 50 — 40 — 30 — 20 — 10 — 0 (በጣም መጥፎ)

ተጨማሪ አስተያየቶች፡- _____

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