

# Quality Of Life in Epilepsy Patients: A cross sectional study

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## Abstract

**Introduction:** The quality of life of people with epilepsy is hampered both by the nature of the disorder and its associated effects. This study was carried out to assess the quality of life in patients with epilepsy and determine the influence of various factors in quality of life in these patients.

**Material And Method:** A cross sectional descriptive study was conducted in Mental Hospital, Lagankhel enrolling clinically diagnosed patients with epilepsy aged more than 18 years and on antiepileptic drugs for at least 6 months. Patients diagnosed with epilepsy but having mental retardation, overt cognitive impairment, psychiatric disorders or other co-morbid chronic systemic or neurological illnesses which could affect QOL were excluded from the study by detailed history, clinical examinations, previous medical records and relevant investigations.

**Results:** Statistically significant differences in the quality of life scores were seen in terms of educational and marital status, and frequency of seizures within the last 6 months before evaluation. Statistically insignificant positive correlation was observed between the age of onset of seizures and the QOL scores. Similarly, statistically insignificant negative correlation observed between the number of drugs used and the QOL scores.

**Conclusion:** Duration of epilepsy had a consistent negative effects on QOL. Evaluation of quality of life in epilepsy relatively measures the outcome for treatment for epilepsy.

**Keywords:** Epilepsy, Quality Of Life, Nepal

## INTRODUCTION

The prevalence rate of epilepsy in Nepal is 7.3 per 1000 populations with the treatment gap of over 80%.<sup>1</sup> During the last few decades greater attention has been paid to the quality of life for people with epilepsy, The overall quality of life of people with epilepsy is hampered both by the nature of the disorder and its associated effects.<sup>2</sup> QOL in patients with epilepsy is a function of an interaction of factors which include clinical variables such as seizure frequency, severity, illness duration, treatment side effects, depression/anxiety and social disadvantages such as divorce, unemployment, social stigma along with family care giver characteristics and social support.<sup>3,4</sup>

In a hospital based cross-sectional study by Vanitha Rani N et al, found females and unemployed epileptic patients with lower QOL scores as compared to males and employed

patients.<sup>5</sup> Another study found that patients with frequent seizures had low social contact and feelings of stigmatization and also pointed out the frequency of seizures as the most significant parameter related to QOL and correlated with lower QOL scores.<sup>6</sup> This study on QOL in patients with epilepsy will enhance our understanding of those factors relevant to patient care in our socio-cultural setting.

## MATERIAL AND METHOD

A descriptive cross-sectional analytical study was carried out in Mental Hospital, Lagankhel, Lalitpur from January 2015 to December 2015 after obtaining ethical approval from Institutional review board-National Academy of Medical Sciences. Written informed consent was obtained from patient for enrollment. 55 consecutive patients of more than 18years of age with epilepsy who were under anti-epileptic medications for at least last 6 months were

included in the study. Patients diagnosed with epilepsy but having mental retardation, overt cognitive impairment, psychiatric disorders or other co-morbid chronic systemic or neurological illnesses which could affect QOL were excluded from the study by detailed history, clinical examinations, previous medical records and relevant investigations. A semi structured self designed questionnaire was suitably designed after 10% of respondents pretesting to collect information regarding the demographic variables and clinical variables. QOLIE-31 questionnaire was used to assess the quality of life of epileptic patients. Statistical analysis was conducted using the statistical package for social sciences, version 20.0. Data were examined to see the p-value. Descriptive measures like mean, standard deviation were used. To study the impact of illness on QOL correlations were calculated using Pearson's method.

**RESULT**

There were 29 male patients (52%) and 26 female patients(48%) with mean age of 31.4 years(Range 18-55 years). Detail results of this study is depicted below from Table 1 to Table 7 respectively.

**Table 1: Sociodemographic variables**

| Characteristics       |                    | Number of patients | Percentage |
|-----------------------|--------------------|--------------------|------------|
| Sex                   | Male               | 29                 | 52         |
|                       | Female             | 26                 | 48         |
| Marital status        | Married            | 40                 | 72.6       |
|                       | Unmarried          | 15                 | 27.4       |
| Educational status    | Illiterate         | 17                 | 31.2       |
|                       | Primary            | 19                 | 34.4       |
|                       | Secondary          | 13                 | 23.6       |
|                       | Higher secondary   | 6                  | 10.8       |
|                       | Graduate and above | 0                  | 0          |
| Occupational status   | Employed           | 31                 | 56         |
|                       | Unemployed         | 24                 | 44         |
| Place of residence    | Rural              | 28                 | 51.6       |
|                       | Urban              | 27                 | 48.4       |
| Socio-economic status | Low                | 31                 | 56.4       |
|                       | Middle             | 24                 | 43.6       |
|                       | High               | 0                  | 0          |

**Table 2: Pattern of use of antiepileptic drugs**

| Therapy                 | Number of patients | Percentage |
|-------------------------|--------------------|------------|
| Monotherapy             | 15                 | 27.3       |
| Two-drug combinations   | 30                 | 54.5       |
| Three-drug combinations | 10                 | 18.2       |

**Table3: Clinical Variables**

| Clinical variables                        |            | Number of patients | Percentage |
|---|------------|--------------------|------------|
| Frequency of seizure during last 6 months | No seizure | 29                 | 52         |
|   | ≥1 seizure | 26                 | 48         |
| Number of drugs used                      | 1          | 15                 | 27.2       |
|   | 2          | 30                 | 54.4       |
|   | 3          | 10                 | 18.4       |
| Family h/o epilepsy                       | Yes        | 7                  | 12.7       |
|   | No         | 48                 | 87.3       |
| Time since last seizure                   | <6months   | 26                 | 48         |
|   | ≥6 months  | 29                 | 52         |
| Age of onset of seizure                   | <10        | 6                  | 11.3       |
|   | 10-29      | 42                 | 76         |
|   | ≥30        | 7                  | 12.7       |

**Table 4: Scores of QOLIE-31 subscales**

| Subscales             | Mean Score | Minimum Score | Maximum Score |
|-----------------------|------------|---------------|---------------|
| Seizure worry         | 60.05      | 24.66         | 100.00        |
| Overall QOL           | 58.91      | 45.00         | 82.50         |
| Emotional wellbeing   | 62.55      | 36.00         | 84.00         |
| Energy/Fatigue        | 58.63      | 40.00         | 80.00         |
| Cognitive Functioning | 55.46      | 31.67         | 82.50         |
| Medication Effects    | 60.60      | 44.43         | 72.23         |
| Social Functioning    | 64.73      | 41.25         | 95.00         |
| Overall Score         | 59.85      | 41.92         | 76.08         |

**Table 5: P-values of various factors on QOL**

| Parameter                         | Mean score | SD    | P-value |
|-----------------------------------|------------|-------|---------|
| <b>Sex</b>                        |            |       |         |
| Male(29)                          | 59.40      | 10.75 | 0.698   |
| Female(26)                        | 58.37      | 8.57  |         |
| <b>Marital Status*</b>            |            |       |         |
| Married(40)                       | 57.06      | 8.32  | 0.020   |
| Unmarried(15)                     | 63.83      | 11.61 |         |
| <b>Educational Status*</b>        |            |       |         |
| Illiterate (17)                   | 56.96      | 7.98  | 0.002   |
| Primary(19)                       | 54.55      | 6.97  |         |
| Secondary(13)                     | 64.42      | 10.16 |         |
| Higher secondary(6)               | 67.5       | 11.73 |         |
| <b>Occupational Status</b>        |            |       |         |
| Employed (31)                     | 60.08      | 10.62 | 0.313   |
| Unemployed (24)                   | 57.40      | 8.36  |         |
| <b>Residence</b>                  |            |       |         |
| Rural(28)                         | 57.68      | 8.30  | 0.343   |
| Urban (27)                        | 60.19      | 10.98 |         |
| <b>Family History of Epilepsy</b> |            |       |         |
| Yes(7)                            | 57.86      | 10.65 | 0.762   |
| No (48)                           | 59.06      | 9.67  |         |
| <b>Therapy</b>                    |            |       |         |
| Monotherapy (15)                  | 62.33      | 10.29 | 0.110   |
| Polytherapy (40)                  | 57.63      | 9.28  |         |
| <b>Seizure Frequency*</b>         |            |       |         |
| 0 (27)                            | 64.17      | 10.07 | 0.000   |
| 1 or more (28)                    | 53.84      | 6.03  |         |

\*statistically significant

**Table 6: Correlation between some clinic social variables and total QOLIE-Score**

| Variable                        | Person's Correlation Coefficient (r) | P-Value |
|---------------------------------|--------------------------------------|---------|
| Age of patient                  | 0.320*                               | 0.017   |
| Age of onset of seizure         | 0.061                                | 0.656   |
| Frequency of seizure            | -0.393**                             | 0.003   |
| Time since last seizure episode | 0.246                                | 0.070   |
| Use of one or more drugs        | -0.235                               | 0.085   |

\*. Correlation is significant at the 0.05 level (2-tailed)

\*\*. Correlation is significant at the 0.01 level (2-tailed)

**Table 7: Correlation between QOLIE-31 subscales and total QOLIE-Score**

| QOLIE-31 subscales    | Person's correlation coefficient(r) | p-value |
|-----------------------|-------------------------------------|---------|
| Seizure worry         | 0.826**                             | 0.000   |
| Overall QOL score     | 0.741**                             | 0.000   |
| Emotional well-being  | 0.838**                             | 0.000   |
| Energy/fatigue        | 0.791**                             | 0.000   |
| Cognitive functioning | 0.763**                             | 0.000   |
| Medication effects    | 0.391**                             | 0.003   |
| Social functioning    | 0.901**                             | 0.000   |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

**DISCUSSION:**

In this study, QOL was found to be decreased with age which was also seen in previous studies.<sup>5,7</sup>Age of the patient significantly correlated with QOL score( $r=-0.320$ ,  $p=0.017$ ).It is predictable that age has significant negative association with QOL in epileptics.People with increasing age are more likely to have limited physical reserve and more fatigue which may contribute to lower QOL.

Lower QOL was also exhibited by female sex but this was not statistically significant( $p=0.698$ ) which was in contrast to previous studies.<sup>5,8</sup>

Similarly, higher QOL score(60.08) was associated with employed patients in contrast to lower QOL score(57.40) in unemployed patients though statistically not significant was understandable as employment increased the potential for social support, self satisfaction.Having enough money is important not only to meet people's basic needs but also to allow participation in society and also prepares people for unexpected expenses and emergencies.This finding was similar to that of some previous studies.<sup>9</sup>

QOL was found to be higher in patients having single status as compared to married patients and this was statistically significant( $p=0.020$ ).This finding is similar to previous study.<sup>10</sup>. Marital status might impose more family burden and the responsibility on the individuals.At the same time, social and emotional aspects of individual might be considerably affected resulting in poorer QOL in married people.

Similarly, patients from urban background had higher QOL score as compared to those from

rural background but this was statistically not significant( $p=0.343$ ). This might be due to better access to education regarding illness, medications availability or more facility present in urban area in contrast to rural areas. Sinha et. al also revealed significant association of rural residence with lower QOL score.<sup>10</sup>

QOL was found to be decreased with lower education level and this was statistically significant( $p=0.002$ ). This was understandable because patient having higher education status may have better perception of nature of disease, possible complications and better understanding of effects disease had on their daily activities. Vanitha rani et al also observed the direct relationship of educational status with increased QOL score.<sup>5</sup> This study also revealed that frequency of seizure had significant effect on QOL of people with epilepsy.

In this study, people having one or more seizure episode during the previous six months before evaluation, had lower QOL score(53.84) as compared to those without any seizure episode during the same period(64.17). This was statistically significant( $p=0.000$ ). This study demonstrated statistically significant negative correlation between seizure frequency and overall QOL( $r=-0.393$ ,  $p=0.003$ ). Shetty et. al also found out that poor QOL was associated with higher number of seizure and most recent seizure attack which was statistically significant.<sup>11</sup>

patients receiving monotherapy had higher QOL score(62.33) as compared to those receiving polytherapy(57.63). This finding, however, not found to be statistically significant in this study( $p=0.110$ ). This might be due to poor perception regarding adverse effects of commonly used antiepileptic medications and giving more emphasis on the intake of prescribed medications in our setting rather than focusing on possible or actual side effects. This finding was in contrast to revelations in previous studies that polytherapy had statistically significant reciprocal relationship with QOL score in epileptic patients.<sup>30,31</sup> This study also tried to correlate the age of onset of seizure with QOL in patients with epilepsy. It didn't reveal any statistically significant association( $p=0.656$ ) of age of onset of seizure with QOL. This finding was in contrast to the previous study which showed significant

correlation in this regard giving reasons such as negative impact on learning and memory performance.<sup>12,13,14</sup>

Patients having positive family history for epilepsy were found to have lower QOL score(57.86) as compared to those without any family history of epilepsy(59.06). This association was not statistically significant( $p=0.762$ ). This association might be due to poor disease perception, negative attitude towards epilepsy itself and impact of social stigma related to the disease. This finding was in contrast to revelation made in a previous study where significant reciprocal association of family history of epilepsy observed with QOL in epileptic patients.<sup>10</sup>

sample size of this study may be inadequate for the generalization of the results.

#### **CONCLUSION:**

Evaluation of quality of life in epilepsy relatively measures the outcome for treatment for epilepsy. The care of the epileptic patients must be taken into account by considering various factors influencing the quality of life in these patients and management of epilepsy should be focused on better control of seizure with appropriate use of antiepileptic medications.

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