

# Quality of life (QOL) of patients with schizophrenia and epilepsy attending an outpatient clinic in a tertiary care hospital in Sri Lanka

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## Abstract

### Background

Schizophrenia and epilepsy are chronic relapsing disorders, that share common disadvantages that affects QOL.

### Methods

A cross-sectional descriptive study was conducted on 68 patients with schizophrenia and 68 patients with epilepsy, presenting to psychiatry and neurology clinics of the Colombo South Teaching Hospital (CSTH). The validated Sinhala and Tamil version of the WHO QOL 100 was used to assess the QOL.

### Results

Schizophrenia group had poorer QOL in physical ( $p<0.05$ ), social ( $p<0.01$ ), independence ( $p<0.05$ ) and

environmental ( $p<0.05$ ) domains, compared to epilepsy. Longer duration of illness ( $> 5$  years) was associated with poorer QOL in the independence ( $p<0.05$ ) and social domains ( $p<0.05$ ) and longer duration of untreated illness was associated with lower QOL in the physical ( $p<0.01$ ) and social domains ( $p<0.01$ ) in schizophrenia group.

### Conclusions

Patients with schizophrenia had poorer QOL compared to patients with epilepsy. Longer duration of untreated illness was associated with poorer QOL in both groups.

**Keywords:** quality of life, schizophrenia, epilepsy, Sri Lanka

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## Introduction

Schizophrenia affects 24 million people of the world, while epilepsy affects approximately 50 million people globally (1,2). Both disorders are associated with high morbidity, socio-occupational dysfunction and economic burden. Stigma and discrimination are also common to both disorders (1,2), which often results in poor treatment seeking.

Quality of life (QOL) is considered the ultimate indicator of treatment outcome (3). QOL is defined as an “individuals’ perception 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” (4). QOL does not merely depend on the absence of symptoms, but takes into account the patient’s perspective on their well-being (5). Despite the advances in treatment, the QOL in those with chronic illness remains poor (6).

We compared the QOL between epilepsy and schizophrenia to identify the difference in QOL in chronic physical versus mental illnesses in Sri Lanka. This information can be utilized in planning and prioritizing services in a resource limited setting, to optimize patient well-being with the available resources.

## Methods

A cross-sectional descriptive study was done among patients attending the outpatient neurology and psychiatry clinics of the Colombo South Teaching Hospital (CSTH), Sri Lanka. Patients diagnosed with schizophrenia by a psychiatrist, according to ICD-10 criteria, and patients diagnosed to have generalized tonic-clonic epilepsy by a neurologist were included in the study. Patients between 30-55 years, with symptom remission for 3 months were recruited. Patients with cognitive impairment, dual diagnosis (epilepsy and schizophrenia), other types of epilepsies, communication

problems and patients who cannot give consent were excluded. Every third patient who met the criteria was selected from clinic registries.

WHOQOL-100 was used to assess the QOL. The WHOQOL-100 measures the QOL of healthy and non-healthy populations, and is validated for Sinhala and Tamil languages (7). It has 100 questions grouped into 25 facets to identify 6 domains of QOL; namely physical health, psychological health, level of independence, social relationship, environmental and spirituality. Each facet includes four items, rated on a five-point Likert scale, with higher scores indicating more positive evaluations for most facets. Some facets (pain and discomfort, negative feelings, dependence on medication) are not scaled in a positive direction, meaning that for these facets higher scores do not denote higher QOL. Domain and facet scores are transformed to a 0-100 scale during the final scoring. A sample size of 68 from each was calculated using the following formula.

$$n = \frac{(\sigma_1^2 + \sigma_2^2)(z_{1-\alpha} + z_{1-\beta})^2}{\Delta^2}$$

Data was collected following informed written consent. In the absence of variances of domains of QOL among patients with epilepsy and schizophrenia in studies done locally, the variance of studies done in India and Greece were included (8,9).

Data was analyzed by using SPSS version 22. Ethical approval was obtained from the Ethics Review Committee of CSTH.

## Results

Mean age of epilepsy and schizophrenia groups were 41.98 and 42.57 years respectively. Majority of the epilepsy (58.8%) and 47.1% of the schizophrenia group were males. Half of the epilepsy (51.5%) and 25% of the schizophrenia group were married. Less than a third (29.4%) of the schizophrenia and 55.9% of the epilepsy group were employed (Table 1).

Almost a three quarter (71.2%) of the epilepsy group, and approximately half (52.9%) of the schizophrenia group have had the illness for more than 5 years. More than three-quarter of the epilepsy group (79.4%) and two thirds (67.6%) of the schizophrenia group have had the illness for more than 1 year before receiving treatment. Both groups had high compliance with prescribed medications (epilepsy group 95.6%; schizophrenia group 92.6%).

The overall QOL was similar in the two groups (mean score=epilepsy 63.2; schizophrenia 61.1). The schizophrenia group had poorer QOL than the epilepsy group in several domains (Table 2).

Male gender was significantly associated with poorer overall QOL ( $p < 0.01$ ) and lower QOL in psychological ( $p < 0.05$ ), independence ( $p < 0.01$ ), environmental ( $p < 0.05$ ) and religious and spiritual ( $p < 0.05$ ) domains in the schizophrenia group. There was no association between gender and QOL in the epilepsy group.

Table 1. Socio-demographic details

| Characteristics           | Epilepsy (n=68) |      | Schizophrenia (n=68) |      |
|---------------------------|-----------------|------|----------------------|------|
|                           | n               | %    | n                    | %    |
| <b>Sex</b>                |                 |      |                      |      |
| Male                      | 40              | 58.8 | 32                   | 47.2 |
| Female                    | 28              | 41.2 | 36                   | 52.9 |
| <b>Age</b>                |                 |      |                      |      |
| 35-39                     | 23              | 33.8 | 23                   | 33.8 |
| 40-44                     | 11              | 16.2 | 11                   | 16.2 |
| 45-49                     | 18              | 26.5 | 10                   | 14.7 |
| 50-55                     | 16              | 23.5 | 24                   | 35.3 |
| <b>Place of residence</b> |                 |      |                      |      |
| Urban                     | 31              | 45.6 | 32                   | 47.1 |
| Semi urban                | 17              | 25.0 | 11                   | 16.2 |
| Rural                     | 20              | 29.4 | 25                   | 36.8 |
| <b>Nationality</b>        |                 |      |                      |      |
| Sinhalese                 | 54              | 79.4 | 63                   | 92.6 |
| Tamil                     | 6               | 8.8  | 4                    | 5.9  |
| Muslim                    | 6               | 8.8  | 0                    | 0    |
| Burgers                   | 2               | 29.9 | 1                    | 2.2  |

(Continued)

| Characteristics           | Epilepsy (n=68) |      | Schizophrenia (n=68) |      |
|---------------------------|-----------------|------|----------------------|------|
|                           | n               | %    | n                    | %    |
| <b>Level of education</b> |                 |      |                      |      |
| No formal Edu             | 4               | 5.9  | 2                    | 2.9  |
| Primary school            | 14              | 20.6 | 14                   | 20.6 |
| 2ry school                | 47              | 69.1 | 50                   | 75.5 |
| University                | 0               | 0    | 1                    | 1.5  |
| Postgraduates             | 3               | 4.4  | 1                    | 1.5  |
| <b>Marital status</b>     |                 |      |                      |      |
| Single                    | 29              | 42.6 | 44                   | 64.7 |
| Married                   | 35              | 51.5 | 17                   | 25.0 |
| Separated                 | 2               | 2.9  | 1                    | 1.5  |
| Divorced                  | 0               | 0    | 2                    | 2.9  |
| Widow                     | 2               | 2.9  | 4                    | 5.9  |
| <b>Employment status</b>  |                 |      |                      |      |
| Employed                  | 38              | 55.9 | 20                   | 29.4 |
| Unemployed                | 30              | 44.1 | 48                   | 70.6 |

Table 2. Differences among QOL domains between two groups

| Domains and facets                     | Epilepsy   |       | Schizophrenia |       | Significance |
|----------------------------------------|------------|-------|---------------|-------|--------------|
|                                        | Mean score | SD    | Mean score    | SD    |              |
| <b>Physical domain</b>                 | 55.7       | 09.70 | 52.0          | 09.80 | <b>.029*</b> |
| Pain/discomfort                        | 37.6       | 22.52 | 40.3          | 24.77 | .135         |
| Energy and fatigue                     | 55.2       | 12.24 | 48.4          | 14.55 | <b>.001*</b> |
| Sleep and rest                         | 47.7       | 16.55 | 48.0          | 16.14 | .461         |
| <b>Psychological domain</b>            | 58.3       | 14.40 | 54.8          | 13.74 | .145         |
| Positive feelings                      | 59.2       | 23.32 | 57.2          | 17.25 | .348         |
| Thinking/learning/memory/concentration | 62.1       | 16.10 | 58.5          | 18.16 | .109         |
| Self-esteem                            | 66.5       | 17.31 | 59.9          | 24.65 | <b>.037*</b> |
| Bodily image and appearance            | 45.0       | 14.55 | 40.2          | 17.12 | <b>.040*</b> |
| Negative feelings                      | 41.0       | 20.71 | 42.3          | 24.27 | .385         |
| <b>Independence domain</b>             | 55.0       | 09.70 | 50.5          | 12.42 | <b>.018*</b> |
| Mobility                               | 57.0       | 16.29 | 48.1          | 19.35 | <b>.002*</b> |
| Activities of daily living             | 52.5       | 15.00 | 46.3          | 12.74 | <b>.000*</b> |
| Dependence on medication or treatments | 59.9       | 20.72 | 53.0          | 26.84 | <b>.046*</b> |
| Work capacity                          | 70.7       | 20.58 | 60.6          | 29.50 | <b>.011*</b> |
| <b>Social domain</b>                   | 55.0       | 15.93 | 47.9          | 14.31 | <b>.007*</b> |
| Personal relationships                 | 61.9       | 19.60 | 56.4          | 17.17 | <b>.041</b>  |
| Social support                         | 59.7       | 21.35 | 52.5          | 23.56 | <b>.031</b>  |
| Sexual activity                        | 43.5       | 17.95 | 34.8          | 20.86 | <b>.005</b>  |

(Continued)

| Domains and facets                              | Epilepsy   |       | Schizophrenia |       | Significance |
|-------------------------------------------------|------------|-------|---------------|-------|--------------|
|                                                 | Mean score | SD    | Mean score    | SD    |              |
| <b>Environmental domain</b>                     | 57.3       | 10.16 | 52.9          | 14.79 | <b>.044*</b> |
| Physical safety                                 | 58.5       | 17.31 | 51.0          | 19.81 | <b>.010*</b> |
| Financial resource                              | 49.6       | 10.19 | 44.5          | 15.25 | <b>.009*</b> |
| Health and social care accessibility            | 60.5       | 18.24 | 60.1          | 23.63 | .456         |
| Accruing new information / skills               | 48.1       | 18.35 | 48.4          | 23.93 | .460         |
| Leisure                                         | 60.6       | 19.11 | 58.1          | 22.72 | .243         |
| Physical environment                            | 62.5       | 14.65 | 51.0          | 20.98 | <b>.000*</b> |
| Transport                                       | 49.0       | 17.06 | 44.6          | 15.34 | .057         |
| Religious/Spirituality/ Personal Beliefs domain | 65.2       | 15.92 | 60.3          | 24.92 | .177         |
| Overall QOL                                     | 63.2       | 19.75 | 61.1          | 27.12 | .604         |

Marital status was not associated with QOL in the schizophrenia group, while being married was associated with a better QOL in the physical domain in the epilepsy group ( $p < 0.01$ ). There was no significant association between age, place of residence and level of education with QOL in either group.

Longer duration of illness ( $> 5$  years) was associated with poorer QOL in the independence ( $p < 0.05$ ) and social domains ( $p < 0.05$ ) in the schizophrenia group, while duration of illness was not associated with QOL in the epilepsy group. Longer duration of untreated illness was associated with lower QOL in the physical ( $p < 0.01$ ) and social domains ( $p < 0.01$ ) of the schizophrenia group, while in the epilepsy group it was associated with poorer QOL in the psychological domain ( $p < 0.05$ ).

## Discussion

Previous literature shows that the QOL in patients with schizophrenia is poorer compared to the general population and those with chronic physical illnesses such as Systemic Lupus Erythematosus and multiple sclerosis (10,11). We could not find any studies comparing the QOL between patients with schizophrenia and epilepsy.

The poorer QOL in the schizophrenia group in the energy and fatigue domain may be explained by the sedative effects of anti-psychotics. The lower QOL in the self-esteem and body image domains may be explained by the significant weight gain associated with antipsychotic medications, which has been shown in previous literature to contribute to low self-esteem and loss of self-worth (12,13). Sedation and sexual side effects of antipsychotics

may account for the poorer QOL in the work capacity and sexual activity facets in the schizophrenia group. The poorer QOL in mobility in schizophrenia may be due to the extrapyramidal side effects (EPSE) of anti-psychotics. Poor mobility may impact self-care and employment, contributing to poorer QOL in terms of independence. Patients with schizophrenia are often subjected to victimization and aggression (14), which may contribute to poorer QOL in the physical safety domain.

We found that male gender was associated with poorer QOL in several domains in the schizophrenia group. The evidence on the association of gender with QOL in schizophrenia is equivocal with some studies showing male gender to be associated with poorer QOL, with others showing the opposite (15-17). We found no association between the patients' age, level of education or area of residence with QOL in patients with schizophrenia, which is in keeping with previous literature (18,19). We also found no association between socio-demographic factors (other than marital status) and QOL in patients with epilepsy, which is supported by previous studies (19).

Our study revealed a longer duration of illness ( $> 5$  years) to be associated with poorer QOL in the independence and social domains in the schizophrenia group, which is in keeping with previous studies (15). Furthermore, we found that the longer duration of untreated illness was associated with poorer QOL in the physical and social domains of the schizophrenia group and poorer QOL in the psychological domain in the epilepsy group. This highlights the need for early treatment of both conditions,

in order to improve the QOL. The presence of negative symptoms, positive symptoms, depressive symptoms and medication side effects have also been identified as predictors of QOL in patients with schizophrenia (15,17). However, we did not examine the association of QOL with these variables.

Although the patients in our study were in remission, their QOL was poor in several areas, showing the need to focus on QOL in addition to symptom remission in patients with schizophrenia. The low QOL in the body image, self-esteem and sexual activity facets in the schizophrenia group shows the need to be mindful of the sexual and metabolic side effects when prescribing anti-psychotics, and the need to screen for these side effects during follow-up. We suggest that periodic assessment of QOL should be incorporated into routine follow-up care.

## Limitations

This study did not assess the impact of negative symptoms or depressive symptoms on the QOL. It was done on a relatively small sample size and in a major teaching hospital in Colombo, Sri Lanka. Therefore, the results may not be generalizable to the entire population.

## Conclusions

The QOL in patients with schizophrenia is poorer than in those with epilepsy in several domains. Further studies with larger sample sizes are needed to design strategies to improve QOL in those with schizophrenia.

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None.

## Statement of contribution

PSA was responsible for the conception of the design, data collection and data analysis. All authors were responsible for the interpretation of findings, writing up the article and revision of the article.

## Declaration of Interest

There are no conflicts of interest.

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