Quality of life of patients with schizophrenia and chronic obstructive pulmonary disease: An observational study

Smitha Ramadas,
Vyjayanthi Bonanthaya
Department of Psychiatry,
Government Medical College,
Thrissur, Kerala,
Departments of Psychiatry,
Manipal Hospital, Bengaluru,
Karnataka, India

ABSTRACT

Background: Quality of life (QOL) is a novel and holistic parameter in measuring health outcome. Recently, the concept is gaining importance as an outcome measure in illnesses, with a chronic and progressive course. Schizophrenia and chronic obstructive pulmonary disease (COPD) are psychological and physical illnesses, respectively, which share this characteristic. Studies comparing the QOL of psychological and physical illnesses are few. The extant literature did not reveal any studies comparing the QOL of schizophrenia and COPD. Aim: The aim of this study was to compare the QOL of patients with schizophrenia, a chronic psychiatric disorder, and COPD, a chronic physical illness. Materials and Methods: The study was cross-sectional in design. The QOL of thirty patients each with schizophrenia and COPD, from a tertiary care teaching hospital, was assessed using the WHO Quality of Life Assessment-BREF scale. Comparison was done between the two groups. Results: The QOL of patients with schizophrenia was significantly better in the physical domain (Z = 2.75, P = 0.006) and overall perception of life (Z = 3.25, P = 0.001). Overall perception of health was also better in schizophrenia (Z = 1.94, P = 0.052). The social domain was the only one in which COPD patients had a better score than schizophrenic patients, though it was not statistically significant (Z = 0.17, P = 0.86). Conclusion: The QOL of schizophrenic patients is slightly better compared to that of COPD patients. Only in the social domain was the QOL of schizophrenic patients inferior to that of COPD patients. Therefore, in schizophrenic patients, priority interventions to improve the social deficits are important because these determine their QOL vis a vis, a chronic physical illness.

Keywords: Chronic obstructive pulmonary disease, quality of life, schizophrenia

How to cite this article: Ramadas S, Bonanthaya V. Quality of life of patients with schizophrenia and chronic obstructive pulmonary disease: An observational study. Ind Psychiatry J 2017;26:140-5.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

Access this article online

Quick Response Code:
Website: www.industrialpsychiatry.org
DOI: 10.4103/ipj.ipj_76_16
MATERIALS AND METHODS

The study was cross-sectional in design. The sample consisted of patients with schizophrenia and COPD, aged 18–60 years, from the outpatient and inpatient facilities of a tertiary care teaching hospital in South India.

Inclusion criteria for schizophrenia patients
1. Patients fulfilling criteria for schizophrenia as per the International Classification of Diseases-10 Diagnostic Criteria for Research
2. Patients between 18–60 years of either sex.

Exclusion criteria for schizophrenia patients
1. Patients with any significant physical illness
2. Patients not willing to consent for the study.

Inclusion criteria for chronic obstructive pulmonary disease patients
1. Patients diagnosed as COPD by the physician, as recorded in the case sheet
2. Patients aged between 18 and 60 years of either sex.

Exclusion criteria for chronic obstructive pulmonary disease patients
1. Patients with comorbid psychiatric illness
2. Patients with any other chronic physical illness
3. Patients not willing to consent for the study.

Tools used for assessments
Positive and Negative Syndrome Scale
This is a 30-item, 7-point rating scale. The Positive and Negative Syndrome Scale (PANSS) measurement derives from behavioral information plus a four-phase 30–45-min formal semi-structured clinical interview. This is followed by 7-point ratings on thirty symptoms for which each item and each level of symptom severity are defined. In the thirty items, seven are grouped to form a positive scale, seven items constitute negative scale, and the remaining 16 items constitute psychopathology scale.

WHO Quality of Life Instrument-BREF
The WHO Quality of Life Assessment (WHOQOL)-BREF is a short 26-item version of the WHOQOL-100. It was developed using data from the field-trial version of the WHOQOL-100. It measures the QOL under four domains – physical, psychological, social, and environmental. It consists of 26 items. All the items have a range of 1–5. The scores of questions 3, 4, and 26 are reversed so as to transform these negatively framed questions to positively framed questions. Then, the scores of items in each domain are added and the mean is calculated to give the domain score. There are also two items that are examined separately, namely overall perception of life (Q1) and overall perception of health (Q2). The four domain scores denote an individual’s perception of QOL in each particular domain. Its psychometric properties have been found to be comparable with that of the full version of WHOQOL 100.[1]

Socioeconomic Status Schedule
This scale is designed to assess socioeconomic status (SES) based on age; caste; education; profession; income; material possession; social participation on behalf of community; housing; accommodation; marital status; and military, scientific, and intellectual achievement. This scale was developed by Sodhi in 1986.[3] It has a test–retest reliability of 0.74. Regarding validity, the reported coefficient of correlation is 0.65, indicating substantial validity.

A specially designed structured pro forma was used to collect the sociodemographic and clinical variables.

Procedure
Thirty patients with schizophrenia, fulfilling the inclusion and exclusion criteria, were selected from among those attending the outpatient psychiatry clinic as well as patients admitted in psychiatry wards of a tertiary care teaching hospital, by convenience sampling, during a period of 12 months. After obtaining informed consent, the sociodemographic variables and clinical details were recorded. SESS, WHOQOL BREF, and PANSS were then administered.

Thirty patients with COPD, fulfilling the inclusion and exclusion criteria, were enrolled for the study. They were recruited from the outpatient clinic and the inpatient wards, of the same hospital, by convenience sampling. After obtaining informed consent, the sociodemographic and clinical details were recorded. SESS and WHOQOL BREF were also administered.

Statistical analysis
Data were collected and analyzed using descriptive statistics such as frequency, means, and standard deviation. Statistical analysis was done using Chi-square test, Mann–Whitney U-test, and Student’s t-test.

RESULTS

Demographics
The sample was composed of patients with schizophrenia ($n = 30$) and COPD ($n = 30$).

There was no significant difference between the two groups in gender distribution, religion, occupation, and domicile. There were significant differences between the two
groups in terms of age (t = 7.77, P < 0.01), marital status (χ² = 11.829, P = 0.003), educational status (χ² = 16.729, P < 0.01), and SES (Z = 2.25, P = 0.024) [Tables 1 and 2].

The mean duration of illness between the two groups was also different (Z = 2.33, P = 0.02), so also the duration of treatment (Z = 3.84, P = 0.001) [Table 2].

Quality of life
The QOL of patients with schizophrenia was significantly better in the physical domain (Z = 2.75, P = 0.006) and overall perception of life (Z = 3.25 P = 0.001). Overall perception of health was also better in schizophrenia (Z = 1.94, P = 0.052). The social domain was the only one in which COPD patients had a better score than schizophrenic patients, though it was not statistically significant (Z = 0.17, P = 0.86) [Table 3].

DISCUSSION
This study examined the differences in the domain of QOL in patients with schizophrenia and COPD, the former representing a chronic psychiatric illness and the latter a chronic physical illness.

Almost 50% of the schizophrenia group as well as the COPD group were unemployed, suggesting the magnitude of the disability levels caused by the illness. Only 36.7% of patients with schizophrenia were married, unlike patients with COPD where 80% were married.

The mean duration of illness in patients with COPD was significantly higher than patients with schizophrenia (9.5 years vs. 6.98 years). Similarly, duration of treatment also was longer in patients with COPD than in patients with schizophrenia (9.10 vs. 4.5 years).

Quality of life
The QOL between the two groups was compared using the WHOQOL BREF scale. Both schizophrenic and COPD patients were recruited from the outpatient department and patient wards. Therefore, both groups consisted of inpatients of varying degrees of severity and treatment. We had not compared the QOL across the groups vis a vis their severity.

It was observed that patients with schizophrenia had a significantly better QOL in the physical domain. This is understandable as COPD is a physical illness, whereas

| Table 1: Sociodemographic data of patients with schizophrenia and chronic obstructive pulmonary disease |
|----------------------------------------|-----------|-----------|-------|-------|-------|
| Variables                       | Diagnosis |           | χ²   | df   | P     |
|---------------------------------|-----------|-----------|------|------|-------|
|                                 | Schizophrenia, n (%) | COPD, n (%) |      |      |       |
| Sex                             | Male      | 21 (70.0) | 25 (83.3) | 1.491 | 1 | 0.222 |
|                                 | Female    | 9 (30.0)  | 5 (16.7)  |      |    |      |
| Religion                        | Hindu     | 19 (63.3) | 16 (53.3) | 0.618 | 2 | 0.734 |
|                                 | Christian | 7 (23.3)  | 9 (30.0)  |      |    |      |
|                                 | Muslim    | 4 (13.3)  | 5 (16.7)  |      |    |      |
| Occupation                      | Unemployed| 15 (50.0) | 14 (46.7) | 2.387 | 3 | 0.496 |
|                                 | Unskilled | 6 (20.0)  | 8 (26.7)  |      |    |      |
|                                 | Skilled   | 7 (23.3)  | 8 (26.7)  |      |    |      |
|                                 | Professional | 2 (6.7) | 0 | | | |
| Marital status                  | Single    | 18 (60.0) | 6 (20.2)  | 11.829 | 2 | 0.003 |
|                                 | Married   | 11 (36.7) | 24 (80.0) |      |    |      |
|                                 | Separated | 1 (3.3)   | 0 | | | |
| Educational status              | <7 class   | 5 (16.7)  | 18 (60.0) | 16.729 | 3 | 0.001 |
|                                 | 7-10 class | 11 (36.7) | 10 (33.3) |      |    |      |
|                                 | College   | 10 (33.3) | 2 (6.7)   |      |    |      |
|                                 | Professionals | 4 (13.3) | 0 | | | |
|                                 | Domicile  | Rural     | 22 (73.3) | 17 (56.7) | 1.832 | 1 | 0.176 |
|                                 |           | Urban     | 8 (26.7)  | 13 (43.3) |      |    |      |
|                                 | Mean age (years) | 34.17±10.03 | 53.23±8.93 | t=7.77 | <0.01 |

Significant at P<0.05. P – Probability value; t=Student’s t-test; COPD – Chronic obstructive pulmonary disease; χ² = Chi square test; df=degrees of freedom
schizophrenia mainly affects the mental functions. Significant impairment in activities of daily living and mobility had been reported in patients with COPD.\cite{6-9} In the domain of overall perception of life and overall perception of health, patients with schizophrenia reported a significantly better QOL than patients with COPD. Despite schizophrenia, afflicting every sphere of the patients’ lives, and the associated social difficulties and the negative attitude of the society toward them, these patients still reported a better perception of life than patients with COPD.

In the psychological and environmental domains of QOL, patients with schizophrenia fared better than patients with COPD, though it was not statistically significant. Only in the domain of social relationship, did the COPD group score better, but was statistically not significant.

Atkinson et al.\cite{10} compared the QOL of patients with schizophrenia with that of physically ill patients, from Ferrans and Powers group of hemodialysis patients. They found that, with the exception of the family component of the Quality of Life Index (QLI), no significant differences were observed between the patients with schizophrenia and patients on hemodialysis. In the family component of QLI, however, schizophrenic patients scored significantly less than patients on hemodialysis.

Our results were also in concordance with that of the study by Hasanah et al.\cite{11} They compared the subjective QOL of patients with diabetes with asymptomatic schizophrenic patients, using WHOQOL-100. They found that there were no significant differences in the psychological well-being and level of independence between the two groups. The most impaired aspect of well-being in the schizophrenic group was the social relationship. In our study also, social relationship was the only domain in which patients with COPD did better than patients with schizophrenia, though it did not reach statistical significance. In a study comparing the QOL of patients with schizophrenia and systemic lupus erythematosus, the scores on three of the four domains of the WHOQOL-BREF scale, namely, physical health, psychological well-being, and environmental domain, were comparable in both groups, though the schizophrenic group had better scores. Patients with schizophrenia had significantly lower scores in the social domain, as in our study.\cite{12} On comparing QOL in schizophrenia and multiple sclerosis also, comparable scores were obtained in all the four domains.\cite{13}

Studies have shown that psychiatric patients tend to report better levels of life satisfaction despite a background of impoverished living conditions. Hopes, aspirations, and perceived control may function as internal yardsticks which influence the ratings of satisfaction and consequently the QOL.\cite{14} Ultimately, it boils down to the fact that QOL is a subjective measurement. Lack of insight could also affect QOL assessments.\cite{15} The adaptation level theory which posits that the human mind has a built-in adaptation mechanism by which people gradually adapt to changes in their environment and reach a stable phase of acceptance of adverse circumstances could also account for this finding.\cite{16} Whatever the reasons attributed to, patients with schizophrenia do not experience a substantially inferior QOL as compared to physically ill patients.

In many studies comparing the QOL of patients with schizophrenia and chronic physical illnesses, the social domain was the one which was compromised in schizophrenia. The greatest challenge even today for patients, their carers, and mental health professionals is the poor social functioning. Therefore, novel treatment strategies such as oxytocin, targeting social cognition deficits that underlie the social disability, are needed.\cite{17}

### Table 2: Socioeconomic status, duration of illness, and treatment

| Variables                      | Mean±SD         | Z  | P     |
|--------------------------------|-----------------|----|-------|
|                                | Schizophrenia   |    | COPD  |
| SESS score                     | 20.4±9.13       | 14.8±7.35 | 2.25 | 0.024 |
| Duration of illness (years)    | 6.9±5.52        | 9.5±4.71 | 2.33 | 0.02 |
| Duration of treatment (years)  | 4.5±3.95        | 9.0±4.45 | 3.84 | 0.001 |

Z – Mann-Whitney U-test; P – Probability value; SD – Standard deviation; SESS – Socioeconomic Status Schedule; COPD – Chronic obstructive pulmonary disease

### Table 3: Quality of life scores of patients with schizophrenia and chronic obstructive pulmonary disease

| Domain score+Q1, Q2            | Diagnosis (mean±SD) | Z  | P     |
|--------------------------------|---------------------|----|-------|
|                                | Schizophrenia (n=30)|    | COPD (n=30) |
| Physical domain score D1       | 3.64±0.67           | 3.12±0.59 | 2.75 | 0.006 |
| Psychological domain D2        | 3.62±0.67           | 3.22±0.59 | 1.31 | 0.19 |
| Social relationship domain D3  | 3.38±0.80           | 3.43±0.68 | 0.17 | 0.86 |
| Environmental domain D4        | 3.26±0.58           | 3.20±0.48 | 0.35 | 0.73 |
| Overall perception of life Q1  | 3.57±0.94           | 2.73±1.01 | 3.26 | 0.001 |
| Overall perception of health Q2| 3.33±0.84           | 2.77±1.22 | 1.94 | 0.052 |

Significant at P<0.05. Z – Mann-Whitney U-test; P – Probability value; SD – Standard deviation; COPD – Chronic obstructive pulmonary disease
**Strengths and limitations**

We could not come across any published literature comparing the QOL of patients with schizophrenia and COPD. We had excluded COPD patients with psychological illnesses. Hence, the measured QOL of COPD patients is attributable only to their physical ill health.

The sample size was small. Being conducted in a tertiary care center, the sample is not representative of the community. The study was cross-sectional in nature; therefore, changes in the QOL could not be examined in a longitudinal manner.

There were significant differences between schizophrenia and COPD patients in terms of age, marital status, SES, duration of illness, and treatment. Schizophrenia strikes at a young age and COPD is a diagnosis of older age. A disease which begins at a younger age has its impact on marital prospects, employment opportunities, and therefore SES. Therefore, such a difference between the two groups though inevitable would have had its influence on deciding the QOL.

**CONCLUSION**

The QOL of patients with schizophrenia is by and large comparable with that of patients with COPD. In certain domains, such as physical domain and overall perception of life and overall perception of health, patients with schizophrenia scored significantly better than patients with COPD. The social domain of QOL was the only one in which schizophrenic patients did poorly, though not statistically significant. However, the current priority in managing schizophrenia is symptom reduction, though there is enough evidence that social functioning deficits begin early on in the disease and is present throughout the course. Although schizophrenia is often described as a chronic, devastating mental illness with poor prognosis, it is not always so. It has comparable or even better QOL than patients with chronic physical illnesses. This is important in prognosticating the outcome to schizophrenic patients and their carers who feel devastated on receiving a diagnosis of schizophrenia.

**Future directions**

In light of the current study and several other robust studies, it is imperative that social functioning should be addressed on a priority basis in the management of schizophrenia. Antipsychotics do not have a robust role in improving social functioning in schizophrenia as per the current evidence. Novel psychosocial and pharmaco-therapeutic approaches should be attempted toward the amelioration of the social functioning deficits which ultimately hamper the QOL in schizophrenia, when compared to similar chronic physical illnesses. This should be done as aggressively as addressing the main psychopathology, for a better outcome.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. The world health organization quality of life assessment (WHOQOL): Development and general psychometric properties. Soc Sci Med 1998;46:1569-85.
2. Chaturvedi SK, Prasad MK, Pathak A. Beyond assessment of quality of life in schizophrenia: Cultural, clinical, and research perspectives from India, a case study. In: Awad G, Voruganti LN, editors. Beyond Assessment of Quality of Life in Schizophrenia. 1st ed. Switzerland: Springer; 2016. p. 197-215.
3. Tharoor H, Chauhan A, Sharma PS. A cross-sectional comparison of disability and quality of life in euthymic patients with bipolar affective or recurrent depressive disorder with and without comorbid chronic medical illness. Indian J Psychiatry 2008;50:24-9.
4. Lehman AF, Ward NC, Linn LS. Chronic mental patients: The quality of life issue. Am J Psychiatry 1982;139:1271-6.
5. Sodhi S. Socio Economic Status Schedule. Agra, India: National Psychological Corporation; 1986.
6. Barstow RE. Coping with emphysema. Nurs Clin North Am 1974;9:137-45.
7. Mc Sweeny AJ, Grant I, Heaton RK, Adams KM, Timms RM. Life quality of patients with chronic obstructive pulmonary disease. Arch Intern Med 1982;142:472-8.
8. Prigatano GP, Wright EC, Levin D. Quality of life and its predictors in patients with mild hypoxemia and chronic obstructive pulmonary disease. Arch Intern Med 1984;144:1613-9.
9. Williams SJ, Bury MR. Impairment, disability and handicap in chronic respiratory illness. Soc Sci Med 1989;29:609-16.
10. Atkinson M, Ziben S, Chuang H. Characterizing quality of life among patients with chronic mental illness: A critical examination of the self-report methodology. Am J Psychiatry 1997;154:99-105.
11. Hasanah CI, Razali MS. Quality of life: An assessment of the state of psychosocial rehabilitation of patients with schizophrenia in the community. J R Soc Promot Health 2002;122:251-5.
12. Radhakrishnan R, Menon J, Kanigere M, Ashok M, Shobha V, Galgali RB, et al. Domains and determinants of quality of life in schizophrenia and systemic lupus erythematosus. Indian J Psychiatr Med 2012;34:49-55.
13. Chopra P, Herrman H, Kennedy G. Comparison of disability and quality of life measures in patients with long-term psychotic disorders and patients with multiple sclerosis: An application of the WHO disability assessment schedule II and WHO quality of life-BREF. Int J Rehabil Res 2008;31:141-9.
14. Gutek B, Allen H, Tyler T, Lau RR, Majchrzak A. The importance of internal referents as determinants of satisfaction. J Commun Psychiatry 1983;11:111-20.
15. Scharloo M, Kaptein AA, Weinman J, Hazes JM, Willems LN, Bergman W, et al. Illness perceptions, coping and functioning in patients with rheumatoid arthritis, chronic obstructive pulmonary disease and psoriasis.
16. Bartholomeusz CF, Ganella EP, Labuschagne I, Bousman C, Pantelis C. Effects of oxytocin and genetic variants on brain and behaviour: Implications for treatment in schizophrenia. Schizophr Res 2015;168:614-27.

17. Birgenheir DG, Pepper CM. Social functioning across the course of schizophrenia. Curr Psychiatry Rev 2013;9:284-92.

18. Kucharska-Pietura K, Mortimer A. Can antipsychotics improve social cognition in patients with schizophrenia? CNS Drugs 2013;27:335-43.