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Quality of life of patients with schizophrenia and its determinants

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Abstract

Introduction: As mortality rates are decreasing, thanks to new inventions and discoveries, morbidity rates are probably on the rise. Schizophrenia is a chronic mental disorder mostly requiring lifelong maintenance treatment. Therefore Quality of life (QOL) is assuming more importance in the medical field as an important outcome measure.

Aims: This study was conducted to examine the QOL of patients with schizophrenia and its determinants.

Materials & Methods: Quality of life in patients with schizophrenia, aged 18-60 years, with no significant medical and other primary psychiatric illnesses, from the outpatient and inpatient facility of a tertiary care hospital in South India and its association with social and clinical variables was studied. WHO QOL BREF scale was used to assess the QOL.

Results & Conclusion: Thirty subjects were recruited for the study. Majority of them were male, single, of rural background and Hindu religion, unemployed with less than 10 years of education. The mean age of patients was 34 years and the mean duration of illness was seven years.

QOL improved with age, especially in the physical domain. QOL was significantly poor in professionals, in the environmental domain of QOL scale. In the psychological domain also professionals had poor QOL, though not statistically significant. Depression and general psychopathology item in the PANSS were found to have significant inverse correlation with QOL.

Keywords: Schizophrenia, quality of life, determinants, QOL.

Introduction

The concept of quality of life is a comparatively new and important aspect of mental health care. Quality of life is defined by the World Health Organization (WHO) as an “Individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns.” It is a broad-ranging concept affected in a complex way by individuals’ physical health, psychological state, personal beliefs, social relationships and their relationships to the salient features of their environment.[(1)]

Quality of life studies in schizophrenia started from de-institutionalization of persons with mental illness, which took place in the 1960s and 1970s in many western countries.[(2)] With the advent of deinstitutionalization, it became apparent that psychopathological symptoms alone were not sufficient to reflect the outcome of schizophrenia. It became evident that long term outcomes were better measured by parameters like QOL. Such outcome measures were also important in designing management plans so as to enable patients with schizophrenia to lead more satisfying lives.[(3)] The determinants of QOL of schizophrenia are varied and complex. The psychopathology which has deleterious effects on the QOL are found to be mainly depression and negative symptoms. Personal and social functioning are also important determinants of QOL of patients with schizophrenia. Reduced insight into the illness has been associated with a higher subjective QOL.[(4)] Awad and Voruganti, pioneers in the field of QOL research in schizophrenia, underline the need for integrating QOL data in clinical practice.[(5)] Though not as popular as in the developed countries, the concept of QOL is gradually gaining momentum in India.[(6)] In schizophrenia, the impact of illness depends upon subjective responses as well as social and environmental factors. Despite several decades of pharmacological and non-pharmacological interventions, schizophrenia is still one of the leading causes of disability in the world. [(7)]

The notion of QOL was much neglected in the care of schizophrenia patients in India.[(6)] There are however some Indian studies which looked into the QOL patients of schizophrenia. In a study conducted in North India, comparing QOL of patients with schizophrenia, with and without depression, general psychopathology symptoms as measured by PANSS was found to be the most important determinant of subjective and combined (objective + subjective) QOL, while positive symptoms of PANSS was the main determinant of objective QOL. Interestingly depressive symptoms had no significant effect on QOL.[(8)] In another study done in a tertiary care hospital in New Delhi, on first episode schizophrenia patients, the general psychopathology symptoms had a significant impact on QOL. Negative symptoms had more influence than positive symptoms on subjective QOL.[(9)] Comparing the QOL of patients with schizophrenia and SLE (systemic lupus erythematosus) in a tertiary care centre in South India, significant correlation between PANSS general psychopathology scores, and the scores on WHOQOL-

BREF physical health domain and environmental domain were seen.[10] However studies from the southern part of India, exploring the various aspects of QOL of patients with schizophrenia are few. In this study, carried out in a tertiary care centre in South India, we examined the socio demographic and clinical variables of patients with schizophrenia and their associations with QOL.

Materials & Methods

The sample comprised of patients with schizophrenia, aged 18-60 years, from the outpatient and inpatient facility of a tertiary care teaching hospital in South India. The sampling technique was convenient sampling and the total sample was 30.Informed consent was obtained from each subject and their caregiver. Institutional approval was obtained for the study.

Inclusion criteria:

1. Patients fulfilling criteria for schizophrenia as per ICD 10 DCR
2. Patients between 18-60 years of age of either sex
3. Willing to give informed consent
4. Accompanied by a reliable caregiver

Exclusion criteria:

1. Patients with other comorbid psychiatric disorders.
2. Patients with any significant medical illness

Assessment

The following instruments were used

1. Positive and Negative syndrome scale (PANSS)

This is a 30 item scale. The PANSS measurement derives from behavioural information plus a four phase 30-45 minute clinical interview. This is followed by seven point ratings on 30 symptoms for which each item and each level of symptom severity are defined. The rating provide summary scores on a seven item positive scale, seven item negative scale and a sixteen item – general psychopathology scale.[11]

2. WHO Quality of Life Instrument (WHO QOL - BREF)

The WHOQOL-BREF, an abbreviated 26-item version of the WHOQOL-100, was developed using data from the field-trial version of the WHOQOL-100.It measures the quality of life. It consists of 26 items, under four domains-physical, psychological, social and environmental. The WHOQOL-BREF contains two items from the overall quality of life and general health (asked separately) and one item from each of the remaining 24 facts included in the WHOQOL-100. Its psychometric properties have been found to be comparable to that of full version of WHO QOL 100. [12] WHOQOL – BREF should be self-administered, if respondents have sufficient ability; otherwise interviewer assisted forms should be used. 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. Then the scores of items in each domain are added and the mean calculated to give the domain score. Domain scores are scaled in a positive direction. The 4 domain scores denote an individual's perception of QOL in each particular domain.

3. Socio-Economic Status Schedule (SESS)

This scale designed to assess Socio-Economic 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 and Sharma in 1986.[13] This scale has a test-retest reliability of 0.74. Regarding validity the reported coefficient of correlation is 0.65 indicating substantial validity.

A specially designed semistructured proforma was used to collect the socio demographic and clinical variables.

Procedure

Patients who satisfied the inclusion and exclusion criteria were recruited for the study. Informed consent was obtained from each subject and their caregiver. The patients were chosen by convenience sampling over a period of one year. The diagnosis was ascertained by face to face clinical interview of the patient and their carers, by a qualified psychiatrist, using the ICD 10 DCR criteria. The socio demographic and the clinical variables were collected from the subjects and/or carers. They were then administered SESS, PANSS and WHO QOL BREF version.

Statistical Analysis

Data was collected, coded and was analyzed using descriptive statistics such as frequency, means and standard deviation. Statistical analysis was done using Mann Whitney U test, Fisher's F test and correlation co-efficient. SPSS vers.10.0 was utilized.

Results

Thirty subjects with schizophrenia were recruited for the study. The socio demographic details are recorded in Table 1. Majority of the subjects were males, single, residing in rural area, belonging to Hindu religion, unemployed with education between 7th and 10th class. The mean age of patients was 34 years and the mean duration of illness was seven years.

Table 1: Socio-demographic data

Variables		Number of patients n (%)	Mean (SD)
Sex	Male	21 (70.0)	
	Female	9 (30.0)	
Religion	Hindu	19 (63.3)	
	Christian	7 (23.3)	
	Muslim	4 (13.3)	
Occupation	Unemployed	15 (50.0)	
	Unskilled	6 (20.0)	
	Skilled	7 (23.3)	
	Professional	2 (6.7)	
Marital status	Single	18 (60.0)	
	Married	11 (36.7)	
	Separated	1 (3.3)	
Educational Status	< 7 class	5 (16.7)	
	7-10 class	11 (36.7)	
	College	10 (33.3)	
	Professionals	4 (13.3)	
Domicile	Rural	22 (73.3)	
	Urban	8 (26.7)	
Mean age (in years)			34.17(10.03)
Socio economic status score			20.40(9.13)
Duration of illness			6.98(5.52)
Duration of treatment (in years)			4.5(3.95)

QOL of the sample

Table 2 displays the mean and standard deviation of the subjects' scores on each domain of QOL, QOL total and the two WHOQOL- BREF items that are analyzed independently, ie perception of overall quality of life and perception of health.

Table 2: Descriptive statistics of QOL scores

Domain score + Q_1, Q_2	Schizophrenia (n=30) Mean (S.D)
Physical domain score D_1	3.64(0.67)
Psychological D2	3.46(0.67)
Social relationship D3	3.38(0.80)
Environmental D_4	3.26(0.58)
Overall perception of life Q1	3.57(0.94)
Overall perception of health Q2	3.33(0.84)
QOL total	20.64(4.5)

The association between QOL scores in patients with schizophrenia and socio demographic and clinical variables was assessed. The different domain scores of QOL was insignificant with respect to gender (Table 3), domiciliary status (Table 3), marital (Table 4) and educational status (Table 4)

Table 3: Relationship between QOL and gender and domicile of patients with schizophrenia

Schizophrenia (n=30)			QOL domain score- Mean (SD)				Overall perception of life Q1	Overall perception of health Q2
			Physical D1	Psycho-logical D2	Social D3	Environ-Mental D4		
Gender	Male	21	3.67 (0.62)	3.48 (0.63)	3.39 (0.81)	3.33 (0.58)	3.67 (0.91)	3.19 (0.93)
	Female	9	3.56 (0.81)	3.43 (0.80)	3.37 (0.82)	3.11 (0.59)	3.33 (1.0)	3.67 (0.50)
	Z value		0.43	0.27	9.1	0.70	0.77	1.47
	P value		0.67	0.78	0.93	0.48	0.44	0.14
Domicile	Rural	22	3.73 (0.63)	3.49 (0.68)	3.41 (0.78)	3.30 (0.59)	3.45 (0.74)	3.23 (0.81)
	Urban	8	3.37 (0.76)	3.37 (0.70)	3.31 (0.91)	3.16 (0.60)	3.88 (1.36)	3.63 (0.91)
	Z value		1.15	0.23	0.36	0.59	1.64	1.12
	P value		0.25	0.81	0.72	0.56	0.10	0.26

Z = Mann Whitney U test, p = Probability value, ns=not significant, SD=standard deviation.

Table 4: Relationship between QOL, marital, educational and employment status in patients with schizophrenia

	Schizophrenia (n=30)		QOL domain score, Mean (SD)				Overall perception of life (Q_1)	Overall Perception of Health (Q_2)
Marital status			Physical (D1)	Psych (D_2)	Social (D_3)	Environ-Mental (D_4)		
	Single	18	3.48 (0.73)	3.37 (0.70)	3.27 (0.91)	3.17 (0.65)	3.5 (1.16)	3.28 (0.83)
	Married	11	3.82 (0.50)	3.51 (0.59)	3.58 (0.63)	3.37 (0.46)	3.63 (0.50)	3.36 (0.92)
	Separated	1	4.43	4.5	3.3	3.7	4	4
	F value		1.621	1.43	0.48	0.78	0.17	0.34
	P value		0.22	0.26	0.62	0.47	0.84	0.71
Educational status	<7class	5	4 (0.30)	3.6 (0.59)	3.67 (0.53)	3.23 (0.35)	3.8 (0.45)	3.0 (1.22)
	7-10class	11	3.43 (0.80)	3.35 (0.69)	3.36 (0.85)	3.17 (0.65)	3.2 (1.27)	3.45 (0.69)
	College	10	3.77 (0.69)	3.61 (0.79)	3.48 (0.96)	3.50 (0.58)	3.90 (0.73)	3.50 (0.97)
	Professional	4	3.43 (0.42)	3.20 (0.42)	2.8 (0.33)	2.97 (0.61)	3.25 (0.50)	3.00 (0.00)
	F Value		1.11	0.51	0.88	0.98	1.05	0.65
	P value	0.36	0.68	0.47	0.42	0.29	0.38	0.59
Occupational status	Unemployed	15	3.52 (0.75)	3.38 (0.64)	3.38 (0.83)	3.03 (0.51)	3.47 (1.2)	3.33 (0.89)
	Un-skilled	6	3.71 (0.55)	3.69 (0.65)	3.92 (0.65)	3.88 (0.46)	3.83 (0.75)	3.5 (0.83)
	Skilled	7	3.8 (0.74)	3.50 (0.81)	2.90 (0.71)	3.39 (0.50)	3.43 (0.53)	3.14 (0.89)
	Professional	2	3.57 (0.20)	3.25 (0.82)	3.50 (0.71)	2.69 (0.09)	4.00 (1.41)	3.5 (0.71)
	F value		0.36	0.36	1.89	5.4	0.39	0.20
	p value		0.79	0.78	0.16	0.005	0.76	0.89

F=Fisher's F test p= probability value, S.D=standard deviation

When the association between occupational status and QOL was examined (Table 4) significant results were obtained in the environmental domain of QOL (F value=5.4, p=0.005).Professionals reported a significantly impoverished QOL, followed by unemployed patients.

Table 5: Relationship between QOL and age of patients with schizophrenia

n = 30

Age	Domain scores (Mean + SD)				Over All life Q_1	Overall health Q_2
	Physical D_1	Psych D_2	Social D_3	Environmental D_4		
R	0.47	0.97	0.32	0.15	0.18	0.03
p value	0.009	0.610	0.087	0.45	0.33	0.86

R= Correlation coefficient, p=probability value, S.D=standard deviation

Regarding the relationship between quality of life and the age of patients, (Table 5) results in the physical domain were significant. QOL was enhanced with increasing age.

Table – 6: Correlation between QOL and PANSS scores.

Symptom Profile		QOL domain score				Overall Perception Of life Q_1	Overall Perception Of health Q_2
		Physical D_1	Psych D_2	Social D_3	Environ-mental D_4		
Positive syndrome	r	-0.20	-0.083	-0.20	-0.47	-0.26	0.25
	p	0.29	0.66	0.29	0.009*	0.17	0.18
Negative syndrome	r	-0.28	-0.067	0.03	0.05	0.01	0.30
	p	0.15	0.74	0.86	0.79	0.96	0.12
General psycho pathology	r	-0.43	-0.29	-0.26	-0.39	-0.23	-0.007
	p	0.019*	0.123	0.17	0.033*	0.22	0.97
Anergia	r	-0.18	-0.13	0.008	0.07	-0.002	0.19
	p	0.34	0.49	0.97	0.699	0.990	0.314
Thought disturbance	r	-0.106	0.084	-0.109	-0.33	-0.23	0.39
	p	0.58	0.66	0.57	0.079	0.213	0.032*
Activation	r	-0.24	-0.19	-0.134	-0.218	-0.178	0.174
	p	0.198	0.31	0.479	0.248	0.347	0.358
Paranoid	r	-0.340	-0.193	-0.406	-0.595	-0.201	-0.068
	p	0.066	0.308	0.026*	0.001*	0.286	0.722
Depression	r	-0.434	-0.157	-0.398	-0.610	-0.398	-0.004
	p	0.017*	0.406	0.029*	0.00	0.029*	0.983

r= correlation coefficient, p=probability value, *p<0.05=significant

On analyzing the relationship between QOL scores and symptom profile in the PANSS, depression was found to have significant negative correlation with QOL scores in the physical and social domains, as also in the overall perception of life.

There was also significant negative correlation between PANSS general psychopathology scores, and the scores on WHOQOL-Bref physical health domain and environmental domain.

Discussion

Fifty percent of the group was unemployed, suggesting the magnitude of the disability levels caused by the illness. Low employment rates in patients with schizophrenia have been reported in several studies. [14] Sixty percent of the sample were not married, consistent with the low marriage rates in schizophrenia.[15] However other Indian studies revealed a high marital rate.[16]

When the association between QOL and the age of patients was examined, statistically significant results were obtained only in the physical domain of QOL, suggesting that as age advances, QOL becomes better. In all other domains too, QOL was better with increasing age, but did not reach statistical significance. This was in variance with other studies where increasing age was associated with poor QOL.[17] The reason of our finding could be the decreasing psychopathology in schizophrenia with increasing age. Jeste et al. found that aging was associated with decreased psychopathology, even after controlling for duration of illness.[18] Another reason could be the downward adaptation of aspirations of the disorder over time. As aspirations decrease, the gap between the person's expectations and achievements, narrow, ultimately improving QOL as suggested by Calman.[19]

On examining the association between QOL and occupational status, significant results were obtained in the environmental domain of QOL. Professionals perceived their QOL in the environmental domain, significantly poorly, followed by unemployed people. Their QOL in the psychological domain was also poor as compared to others though not statistically significant. Environmental domain of QOL comprises financial resources, home environment, accessibility to health and recreational facilities, physical environment etc. This finding might reflect the professionals' higher expectations in these areas of life compared to non-professionals. While rehabilitating schizophrenia patients, aiming for gainful employment, it is also worthwhile to look into the QOL issues of those seemingly well placed like professionals, whom we may tend to ignore. Psychosocial interventions have to be undertaken to narrow the gap between their expectations and realities and address the subtle but significant employment issues.

Educational status did not significantly affect the QOL contrary to other studies, where QOL was poorer in well-educated subjects.[20,21] Marital status too, had no significant impact on the QOL of our patients, in variance with other studies.[22,23]

When the relationship between QOL scores and symptom profile on PANSS score was analysed, depression was found to have significant negative correlation with QOL scores. Patients who had depressive symptoms had poorer QOL. Depression often a concomitant feature of schizophrenia is related to have a negative cognitive set of viewing the self, the world and the future.[21,24,25] The patient usually

perceives his well-being, social functioning and living conditions as worse than they actually are. This is in line with other studies which have also found significant correlation between depressive symptoms and poor QOL.[4,26,27,28] This has important implications. While aggressively managing the psychopathology of schizophrenia, care should be taken to assess and address mood symptoms like depression, because it is these, rather than the core symptoms of schizophrenia which determine the QOL.

The general psychopathology scores on PANSS also had an influence on the QOL of patients. Similar findings emerged from other Indian studies too.[8,10] Therefore these symptoms should also be targeted while managing schizophrenia patients so as to enable them a better QOL.

Strengths and limitations

Small sample size was the major limitation of our study. As the study was conducted in a tertiary referral centre, sample might have been biased by consisting of more severally ill patients. Therefore it may not be generalizable to the population. Moreover this was a cross sectional study.

Our sample consisted of patients with schizophrenia without any significant medical illnesses. Considering the fact that comorbid medical disorders are over represented in schizophrenia patients, studying such a pure sample of schizophrenia patients, though a small number was both our strength and limitation.

Conclusion

QOL was found to be improving with increasing age especially in the physical domain. QOL was observed to be significantly poor in professionals in the environmental domain, followed by unemployed people. In the psychological domain also their reported QOL was poor though it did not reach statistical significance. Depression was found to have significant inverse correlation with QOL in our patients. As mood symptoms are a significant determinant of the QOL, they should not be ignored in the pursuit of aggressively managing the core psychopathology of schizophrenia. The general psychopathology symptoms of PANSS also have an impact on the QOL, which should therefore be focused in the treatment plan.

Suggestions for futures research

Similar studies using larger sample size are essential to substantiate the findings of our study. The trends of changes in QOL over time, has to be researched by longitudinal studies.

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