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Original Research Article

Relationship Between Symptom Severity, Symptom Types and Quality of Life in Patient with Schizophrenia

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Abstract

Background: Quality of life in schizophrenia is affected by different symptom domains throughout the course of illness. Quality of life has been accepted as an important treatment goal in Schizophrenia.

Methods: . 100 patients with schizophrenia as per DSM Vcriteria fulfilling the inclusion and exclusion criteria formed the study group.PANSS was used to assess symptom severity and quality of life was assessed through Q-LE-Q-SF. The collected data were analyzed using descriptive and appropriate inferential statistics using Statistical Package for the Social Sciences (SPSS) version 17.0. $P \leq 0.05$ was considered to be significant

Results: The mean PANSS score was76.78±19.40. The mean score for positive and negative symptoms was 17.42±6.83 and 20.91±6.76 while it was 38.47±9.45 for general psychopathology. The mean QLES-Q-SF score was 41.5±13.99. Quality of life had significant negative correlation with PANSS symptom scales. PANSS total subscale had highest negative correlation followed by General Psychopathology subscale, negative subscale and positive subscale respectively. Quality of life correlated more inversely with negative symptoms as compared to positive symptoms.

Conclusion: Psychopathology is inversely correlated with quality of life. All symptom domains should be the target of treatment to improve the quality of life of patients with greater emphasis on general psychopathology and negative symptoms.

Keywords: Quality of life (QOL), Schizophrenia, Psychopathology, PANSS, Q-LES-Q-SF

Introduction

Schizophrenia is a severe mental disorder characterized by three broad categories of symptoms: positive symptoms, negative symptoms, and cognitive symptoms but no single symptom is pathognomonic of the disorder. The disease has usually a chronic course with heterogeneous outcomes ranging between recovery and severe states of chronicity.

The National Mental Health Survey of India, 2015-16 reported a lifetime prevalence of 1.4% and a current prevalence of 0.5% for schizophrenia [1]. The survey also found that two out of three persons with psychosis lived with a disability affecting family, social, and work-life significantly [1]. Schizophrenia is associated with significant functional impairment, challenges in community living, and the burden of disability [2]. The quality of life (QOL) in patients with schizophrenia has been found to be low as compared to the general population [3].

The concept of quality of life (QOL) becomes important to conditions that are chronic in course and when treatment is required for a long period and so it has been accepted as an important treatment goal in Schizophrenia [4, 5]. QOL is a multidimensional construct that encompasses both subjective and objective measures [4]. The WHO definition of QOL includes a person's physical health, psychological state, level of independence, social relationships, personal beliefs, and environment, all of which are shaped by culture and value systems [6]. Assessment of QoL remains controversial in schizophrenic patients due to the presence of varying psychotic symptoms, cognitive dysfunction, and lack of insight [7]. However, there have been reports indicating that it is feasible to collect statistically reliable quality of life data from chronic mentally ill patients and subjective measurement is acceptable both in terms of reliability and consistency [8].

There have been few studies of quality of life in schizophrenia patients in relation to symptomatology with inconsistent findings in India [9]. Therfore, present study aimed to understand the relationship of symptoms severity scores and type of symptoms severity scores with patients' quality of life in schizophrenia which will help in planning of remedial measures and rehabilitation services.

Methods

It was a cross-sectional, observational study design. Institute ethic committee approval was taken before inclusion of the subjects in the study. 100 cases with schizophrenia diagnosed as per DSM5 were recruited from the psychiatry department of a tertiary health care centre in western India. Verbal

and written informed consent was taken from all participants. Also, the confidentiality of patients was ensured at all stages of the data collection. Age group between 18 years and 60 years of age with enough intellectual capacity to answer and interact with the interviewer were included in the study. Co-morbid psychiatric condition, extremely suicidal, violent patients, neurological disorder or significant medical condition, mental retardation, history of substance use except for caffeine and nicotine, unwilling, uncooperative patients and those who were not in a position to give voluntary consent were excluded from the study.

A semi-structured proforma was used to record the patient's socio-demographic details along with clinical variables such as diagnosis, duration of illness, age of onset, their relevant history of psychiatric illness, and family history. Compliance was considered high if the patient was continuously on treatment since the beginning of the illness, low if the patient took treatment only in the acute phase and medium if the compliance was in between these two extremes. Details were taken from the patient and caregiver.

The positive and negative syndrome scale (PANSS) was administered to assess positive and negative symptoms and general psychopathology [10]. This 30-item, 7-point rating instrument(ranging from 1 to 7) was conceived as a carefully defined and operationalized method that evaluates positive, negative, or other symptom dimensions based on a formal semi-structured clinical interview and other informational sources. In the 30 items, seven are grouped to form a positive scale and seven items constitute negative scale, remaining 16 items constitute general psychopathology domain that gauges the overall severity of schizophrenic disorder. Quality of life enjoyment and satisfaction questionnaire short form (Q-LES-Q-SF) was used for evaluation of the quality of life in patients of schizophrenia [11]. The Q-LES-Q was developed in 1993 by Endicott et al for use in depressive patients to assess respondents' degree of enjoyment and satisfaction in different areas of daily life. It is a self-administered instrument. The long version of the QLES-Q includes 60 items with 33 additional optional items. The Q-LES-Q-SF, which is identical to the general activities subscale of the longer version of the Q-LES-Q instrument, includes 16 items. Each item uses a 5-point scale ranging from 1 (very poor) to 5 (very good). A total score is derived from 14 items with a maximum score of 70 and with higher scores indicating greater life satisfaction and enjoyment. Participants rate their satisfaction with the following domains of activity: physical health, feelings, work, household duties, school/course work, leisure time activities, and social relations. The two last items deal with medication and overall life satisfaction. It takes about five minutes to complete the Q-LES-Q-SF scale. The Q-LES-Q-SF has established internal consistency, test-retest reliability. Additional language versions have been developed over the used in Indian settings too [12].

Data analysis

SPSS version 17.0 was used to analyze data. Analysis were done in propotions, mean and standard deviations for descriptive data. Pearson correlation was used to find out the correlation between the quality of life and psychopathology. The correlation was considered significant at the 0.01 level (2-tailed).

Results

The sociodemographic and clinical details of the study sample is in table 1

The mean age of patients with schizophrenia was (39 ± 9.95) years. Most of the participants of our study were married, males, belonged to the Hindu religion, joint families, and urban backgrounds. The majority of the patients (59%) had studied up to primary school and were employed as a laborer (41%) .The duration of illness of 81% of patients with schizophrenia was more than five years.Mean age of onset of the disease was 27.64 years, 67% of patients had no family history of psychiatric illness ,50% had nicotine use disorder and 78% had fair compliance to treatment .The mean total PANSS and Q-LES-Q-SF score was 76.78. and 41.5±13.99 respectively. Q-LES-Q-SF had a significant negative correlation with PANSS symptom scales (Table 4).

Table 1: Socio-demographic and clinical characteristics of patients (n=100)

Variables	n (%)
Age (Range: 18-60 yrs.; Mean± SD= 39±10)	
<20	03 (03)
20-39	47 (47)
>=40	50 (50)
Sex	
Male	66 (66)
Female	34 (34)
Domicile	
Urban	58 (58)
Semi-urban	16 (16)

Rural	26 (26)
Religion	
Hindu	90 (90)
Muslim	10 (10)
Education	
Primary education	59 (59)
Sec./Higher secondary	37 (37)
Graduate	03 (03)
Postgraduate	01 (01)
Occupation	
Unemployed	33 (33)
Student	04 (04)
Laborer	44 (44)
Housewife	18 (18)
Retired	01 (01)
Marital Status	
Single	37 (37)
Married	41 (41)
Divorced/seperated	18 (18)
Widow/widower	04 (04)
Type of family	
Nuclear	43 (43)
Joint	47 (47)
Per capita monthfy family income in INR (Kuppuswamy scale)	
≥ 5571 (V)	
2786 -5570 (IV)	07 (07)
1671-2785 (III)	23 (23)
836 -1670 (II)	34 (34)
< 836 (I)	26 (26)
	10 (10)
Duration of illness in years (mean=11.31± 5.6)	
<5	19 (19)
5-10	27 (27)
>10	54 (54)
Mean age at onset	27.64± 9.05
Nicotine use	50 (50)
Compliance	
Fair	78 (78)
Poor	22 (22)
Family history of psychiatric illness	
Yes	33 (33)
No	67 (67)

Table-2: Correlation between PANSS and Q-LES-Q-SF

Variable	**Correlation Type**	**PANSS Positive Score** 17.42±6.83	**PANSS Negative Score** 20.91±6.76	**PANSS General Psychopathology Score** 38.47 ±9.45	**PANSS Total Score** 76.78 ±19.40
Q-LES-Q-SF Score(41.5±13.99)	Pearson Correlation	-0.585(**)	-0.656(**)	-0.685(**)	-0.767(**)
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	100	100	100	100

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

Discussion

Most of the studies on the quality of life of patients with schizophrenia were initially done using scales like WHO-QOL BREF (WHO Quality of life brief version) , which has been clinician rated in most of the study but more recently it has been realized that subjective assessment is equally important (13). Research carried out in the Indian setting has demonstrated that subjective QOL can substitute for objective QOL in patients with schizophrenia (13). Sense of self, satisfaction with daily activities, and activity levels contribute significantly towards the subjective perception of QOL in patients with schizophrenia (14), and hence a scale that covers these domains for the subjective assessment of the quality of life has been used in our study.

In our study, we found a negative correlation between the quality of life and severity of symtomatology in patients with schizophrenia. Different subscales of PANSS, as well as total PANSS, had a significant negative correlation with Q-LES-Q-SF mean score in our study and matched with work done by previous researchers, which predicted the association of severity of positive as well as negative symptoms to a poorer QOL.(15,16) Solanki R K et al (15)concluded that positive subscale and total PANSS were significantly negatively correlated with physical, psychological, social relationship domains and total QOL whereas negative subscale had significant negative correlation with physical and psychological domains and total QOL. Mishra Ajay et al (16) found all domains of psychopathology to be negatively correlated with all the domains of QOL. In this study, we found that negative symptoms of PANSS were negatively correlated with Q-LES-Q-SF score compared to which were in tune with studies in which negative symptoms were found to be the main factors predicting a decrease in the four domains of quality of life: physical health, psychological, social relationships, and environment (17). However, there have been studies involving quality of life that found no correlation between subjective assessments of the quality of life, well-being, and self-efficacy in patients with schizophrenia with negative symptoms (18). The difference from our study may be attributed to the exclusion of patients of $\geq$ 40 years and less serious negative symptoms in their study.

Few studies also point that subjectively reported life satisfaction is not related to positive or negative symptoms of schizophrenia but with depressive symptoms (19). However, the study by Rocca P et al (20) concluded that different symptoms affect the quality of life over the course of illness. Depressive symptoms mostly affect QOL during the early 3-year course of the illness, however negative symptoms mostly start affecting from 4 to 6 years of illness and later on and negative symptoms were the most reliable predictors of QOL during these years. After the 6-year course of illness, negative symptoms remained the most reliable predictors of QOL, together with the severity of illness, whereas positive and depressive symptoms had a minor role. Our study subjects had mean duration of illness more than 11 years (11.31) and among them, 54 % subjects had duration of illness more than 10 years. Among all three domains of PANSS, most affected domain was negative symptoms compared to others, which is matching Rocca et al observation.

In further continuation, Quality of life correlated more inversely with negative symptoms as compared to positive symptoms in our study. The longer mean duration of illness in patients of our study and a higher percentage of patients with a mean duration of illness > 5 years may be responsible for the association of negative symptoms with quality of life in our study. However in our study we found that the most negative correlation with quality of life was for general psychopathology domain and the finding matched with previous study where general psychopathology showed a consistent negative relationship with QOL across all study samples and treatment settings(21)

Since symptomatology of schizophrenia changes across the course of the illness, their relative influence on various domains of QOL also differs. Research needs to be done in identifying determinants of QOL in the different phases of the illness to target these during treatment interventions.

The present study was based on a tertiary, general hospital sample and is not representative of the entire schizophrenic community in this region. The cases were recuited as per one year outpatient propotions of Schizophrenia subjects calculated with hospital record data with convenient sampling method, as it was time bound project of student thesis. The QoL instrument Q-LES-Q-SF was not designed specifically for schizophrenic subjects. Variables were assessed cross-sectionally. Hence, the cause-effect relationship between variables and QoL or its contributory nature cannot be assumed at face value. QOL in the current study was assessed as an overall composite score, it might not be an accurate representation of various domains of QoL.

Conclusion

To conclude, severity of symptomatology is associated with poor quality of life scores(more with negative symptoms as compared to positive symptoms and others) in our study subjects. Though the overall quality of life is influenced by psychopathology or severity of symptomatology in schizophrenia, there is a need for longitudinal studies to find the different factors which come into play during the course of illness so that malleable

causes might be identified and used in improving the rehabilitation services.

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