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Research Article

A case-control study of quality of life in schizophrenic patients

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Abstract: Background: Schizophrenia is a severe mental disorder characterized by three broad categories of symptoms: positive symptoms, negative symptoms, and cognitive symptoms. Quality of life (QoL) is defined by the World Health Organization as "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." **Materials and Methods:** This is a descriptive epidemiological, non-interventional, study single center, cross sectional, observational study. The study was conducted at Department of Psychiatry, Tertiary care Teaching Hospital with inpatient units, outpatient clinics, and specialty psychiatric rehabilitation services. Thirty-five consecutive outpatients with schizophrenia attending the hospital fulfilling the inclusion and exclusion criteria were recruited for this study. **Result:** The mean duration of illness was 6.32 years for schizophrenics and the duration of treatment was 6.10 years. On comparing the domain raw score, the mean physical and psychological domain raw scores for Schizophrenia were 21.24±5.16 and 17.32±2.97, respectively, while among the controls these were 24.36±2.89 and 21.37±1.95, respectively. The differences between them were statistically significant. In the mean social domain raw score, there was a difference noted with a borderline significance (P = 0.0514) while the mean environment raw score was not significant. **Conclusion:** The deleterious effects of schizophrenia on QoL occur significantly. Management should be planned with this consideration to yield better outcomes.
Keywords: Schizophrenia, Quality of life (QoL), Psychiatric Rehabilitation Services.

INTRODUCTION

Schizophrenia is a serious mental disorder described by three general classes of side effects: positive indications, negative manifestations, and intellectual manifestations. Schizophrenia is related with critical practical impedance, challenges in network living, and weight of inability. [1] Moreover, the indications and weakened job working, schizophrenia influences numerous spheres of living, for example, relational and socio-word related areas. [2]

Quality of life (QoL) is characterized by the WHO as "People's impression of their situation in life with regards to the way of life and worth frameworks wherein they live, and according to their objectives, desires, guidelines, and concerns." [3] Over the most recent years, there has been expanding enthusiasm for personal satisfaction in schizophrenic patients, since schizophrenia is an extreme, debilitating, long lasting problem, related with serious social and word related dysfunction. Besides, the advancement of atypical antipsychotics with more extensive viability and lower occurrence of extrapyramidal results than typical neuroleptics has advanced more prominent enthusiasm from the patient's viewpoint. [4]

Explaining the connection between mental manifestations and QoL speaks to a significant advance both in clarifying the elements that influence QoL for people with schizophrenia and in understanding the utility of the idea of QoL for directing future treatment improvement endeavors. For instance, if markers of QoL share just a humble sum difference with mental side effects, such discoveries would propose that proportions of QoL have some discriminant legitimacy as well as highlight the significance of looking past manifestation decrease procedures for improving QoL in schizophrenia. [5,6] While these issues have been the focal point of much exploration in the course of recent many years and are of specific significance if proportions of QoL are to be the benchmarks for novel medicines pointed toward improving utilitarian results in schizophrenia, until now, discoveries across contemplates have been blended.

Information on the deciding components of personal satisfaction in individuals with schizophrenia can assist experts with picking the most suitable strategies and more viable mediations. Hence, we trust that this study will add to adjusting intercession procedures at psychosocial rehabilitation services, considering factors that ideal for improving personal satisfaction.

MATERIALS AND METHODS

This is a descriptive epidemiological, non-interventional, study single center, cross sectional, observational study.

The study was conducted at Department of Psychiatry, Tertiary care Teaching Hospital with inpatient units, outpatient clinics, and specialty psychiatric rehabilitation services. Psychiatric Rehabilitation Services of the institute is comprised of a

multidisciplinary team. For the primary data, the patients and controls were recruited from the psychiatry outpatient wing of a teaching institution. At the start of the study, author (AMA) was educated and calibrated by senior faculties by providing education and training for using the standardized instruments. Repeated checks by faculties ensured its continuous standardized use.

Inclusion criteria for the study were as follows:
1. Patients fulfilling criteria for Schizophrenia as per ICD-10
2. Patients between 18 - 60 years of age;
3. Having received adequate doses of the same antipsychotic drugs for at least 3 months;
4. No history of hospitalization, exacerbation, or electroconvulsive therapy application within the last 3 months;
5. Enough intellectual capacity to answer the scale questions and interact with the interviewer.

Exclusion criteria are the following:
1. History of alcohol and/or drug addiction or abuse;
2. Unwilling patients and those who were not in a position to give voluntary consent;
3. With any other systemic diseases.
4. Those with irregular treatment-seeking behaviour; and
5. Newly diagnosed patients.

Gender, age group, and educational status were matched as far possible with the controls. Apparently normal and healthy controls were drawn from the normal public visiting the hospital. Care was ensured to recruit these controls from willing persons fulfilling the inclusion and exclusion criteria except for inclusion criteria 1 and 3. Those in the control population who had their first- or second-degree relative suffering from any psychiatric disorders were excluded from this study.

From all potential participants, a preformatted, semi structured data collection form for each patient was earlier filled out by a single author (AMA). Details of the sociodemographic information and disease status (for schizophrenics) were collected. The following predictor variables were used. Age was categorized as: i. below the 3rd decade of life, ii. 4th decade of life, iii. 5th decade of life, and iv. 6th decade of life. Education, income, and occupation were classified as per updated Kuppuswamy's socioeconomic scale. [7] Familial setup (joint/nuclear) and marital status (single/married/separated/divorced) were the other parameters used. Clinical severity of the disease was evaluated using the established norms. For this current study, the following forms were translated to the regional language using the standard, prescribed WHO methodology. [8] The positive and negative syndrome scale (PANSS-positive/PANSS-negative) [9] and general psychopathology scale [10] were used to measure details of the disease in schizophrenic patients.

WHO-QoL-BREF formed the outcome measure tool to collect the QoL of schizophrenic patients. This instrument considers four domains with six items each for physical, psychological, social, and environmental domains and two items from the overall QoL and one in general health. [11] The scale is much similar to Likert with each structural rating done from 1 to 5. Both the raw score and the transformed score of the domains were used. Total score of WHO-BREF was considered as the overall score and used in this study. The higher the score, the better the QoL.

Statistical analysis

Data were collected and analysed using the SPSS 20.0 version. Descriptive statistics were provided for the numeric and categorical variables using mean, standard deviation (with prefix ±), and percent distribution (%) as necessary. Group differences were determined using chi-square ($\chi 2$) test for categorical variables and Student's t-test for continuous variables. Cross-tabulation and the chi-square tests were performed. Kruskal–Wallis test was used to determine the overall significant differences among groups. Overall significant differences were analyzed for the presence of pairwise difference using the Mann–Whitney U-test. Wilcoxon signed-rank test was used to assess the distribution of two paired variables in two related samples. P value of less than 0.05 was used for statistical significance.

RESULT

The sample was composed of patients with schizophrenia (n = 35) and Control (n = 35).

Table 1: Distribution of socio-demographic profile in schizophrenia and control groups

Variables		**Schizophrenia, (n=35) (%)**	**Controls (n = 35) (%)**	**p-value**
Sex	Male	29	27	0.341
	Female	6	8	
Age group	<20	4	5	0.542
	21-40	19	17	
	41-60	11	12	
	>61	1	1	
Mean Age		37.43 ± 7.42	38.21 ± 8.31	0.843
Religion	Hindu	26	23	0.635
	Muslim	7	11	

	Christian	1	-	
	Sikh	1	1	
Occupation	Unemployed	19	14	0.043
	Unskilled	12	9	
	Skilled	3	7	
	Professional	1	5	
Marital status	Single	13	12	0.493
	Married	21	23	
	Divorced/Separated	1	0	
Educational status	Illiterate	1	1	0.734
	Primary school	1	2	
	Middle school	7	8	
	High school	22	18	
	Inter	3	4	
	Graduate	1	2	
Locality	Rural	12	9	0.834
	Urban	23	26	

In Table 1. Gender wise, there was an equal distribution among the schizophrenics and controls. The mean age of the schizophrenic and control groups were 37.43 ± 7.42 years and 38.21 ± 8.31 years, respectively, and there was no statistically significant difference (P = 0.328). The age group, religion, education, marital status, educational status and locality did not show statistically significantly difference between the case and control groups in table 1.

Table 2 Distribution of duration of illness, and treatment of schizophrenia patients

Variables	**Schizophrenia, (Mean±SD)**
Duration of illness (years)	6.32±1.46
Duration of treatment (years)	6.10±1.01

The mean duration of illness was 6.32 years for schizophrenics and the duration of treatment was 6.10 years in table 2.

Table 3: Mean Raw Score of the Domains in the study Population

Parameters	**Schizophrenia Mean± SD**	**Controls Mean± SD**	**p-value**
Physical domain (raw score)	21.24±5.16	24.36±2.89	0.0026
Psychological domain (raw score)	17.32±2.97	21.37±1.95	0.0001
Social domain (raw score)	9.56±1.55	10.13±1.11	0.0514
Environment domain (raw score)	24.83±4.04	25.72±3.82	0.3470

On comparing the domain raw score, the mean physical and psychological domain raw scores for Schizophrenia were 21.24±5.16 and 17.32±2.97, respectively, while among the controls these were 24.36±2.89 and 21.37±1.95, respectively. The differences between them were statistically significant. In the mean social domain raw score, there was a difference noted with a borderline significance (P = 0.0514) while the mean environment raw score was not significant [Table 3].

Table 4: Mean Transformed Score of the Domains and Overall Quality of Life Score in the Study Population

Parameters	**Schizophrenia Mean± SD**	**Controls Mean± SD**	**p-value**
Physical domain (transformed)	53.86±14.25	65.10±8.72	0.0002
Psychological domain (transformed)	54.24±15.29	60.56±8.18	0.0346
Social domain (transformed)	57.12±17.93	63.83±16.14	0.1014
Environment domain (transformed)	57.13±12.91	61.27±15.12	0.2222
Overall	83.21±11.23	91.47±8.36	0.002

The mean transformed score was statistically different between the physical domain (schizophrenia 53.86±14.25 and controls 65.10±8.72) and psychological domain. Similar to the raw score, a borderline significance was noted between the schizophrenics and normal controls in the social domain. The mean overall WHO-BREF score for

schizophrenics was 83.21±11.23 while for controls, it was 91.47±8.36. The difference between them was statistically significant (P = 0.002) [Table 4].

Table 5: The p-value of comparison of Demographic Factors, WHO-BREF (Raw Scores) Domains, and Overall Scores

Parameters	Physical domain	Psychological domain	Social domain	Environment domain	Overall
Age group	0.783	0.083	0.371	0.213	0.217
Gender	0.283	0.932	0.323	0.832	0.317
Religion	0.421	0.435	0.538	0.383	0.893
Education	0.532	0.152	0.323	0.273	0.283
Occupation	0.029	0.053	0.423	0.032	0.037
Income	0.634	0.173	0.653	0.143	0.382
Marital status	0.731	0.721	0.521	0.074	0.643

On comparing the demographic factors and domain scores, the age group, gender, religion, education, income, and marital status did not statistically differ among the groups. Table 5 depicts the P value between the domains, overall score, and the groups. Occupation exhibited significant difference in the physical domain, environment domain, and overall score [Table 5].

Table 5: Correlation of the PANSS-Positive, PANSS-Negative Scale, and the General Psychopathology Scales with WHO-BREF Scores in the Schizophrenia Population

Score	WHO QoL-BREF Domain	PANSS-positive		PANSS-negative		General psychopathology	
		Correlation	p-value	Correlation	p-value	Correlation	p-value
Raw Score	Physical	-0.498	**0.002**	−0.199	0.251	−0.131	0.453
	Psychological	−0.196	0.259	−0.316	0.064	−0.454	0.006
	Social domain	−0.319	0.061	−0.281	0.102	−0.257	0.136
	Environment domain	−0.231	0.181	−0.153	0.380	−0.234	0.176
Transformed Score	Physical	−0.601	0.000	−0.176	0.311	−0.116	0.506
	Psychological	−0.254	0.140	−0.316	0.064	−0.476	0.003
	Social domain	−0.313	0.067	−0.214	0.217	−0.253	0.142
	Environment domain	−0.213	0.219	−0.187	0.282	−0.211	0.223
Overall		−0.486	0.003	−0.246	0.154	−0.312	0.068

On correlating the PANNS-positive, -negative, and general psychopathology scales, it was observed that raw score was negatively correlated ($\rho = -0.498$) with the physical domain and general psychopathology was related to the psychological domain raw scores. The transformed score of the psychological domain correlated negatively (ρ = -0.476) with a statistical significance. The overall WHO-BREF score was negatively correlated ($\rho = -0.486$, P = 0.003) with the PANNS-positive scale [Table 6].

DISCUSSION

This study examined the distinguish in the area of QOL in patients with schizophrenia and healthy, the earlier speaking to a persistent mental disease and the last a constant physical sickness.

The subject of contrasts in assessment of the personal satisfaction among males and females has been broadly discussed about in the literature, although numerous inconsistencies have been watched. Numerous studies have demonstrated that male had a more quality of life than females, particularly in the region of social working. [12] Jarema et al. demonstrated that the personal satisfaction was preferred in males with schizophrenia over in females. [13] In some cases, there was no critical relationship found among gender and the quality of life. [14-19]

Evaluations of unemployment in individuals with schizophrenia were 70-85%, [20] while in our schizophrenic just 29.8% were discovered to be jobless. This can be clarified by the way that in created nations occupations are more convoluted than in less development social orders. [21] It is likewise realized that progress of schizophrenic patients is better in non-industrial nations due to all the more treatment of

patients in families and in the public eye and less systematization. [22]

In our study, the mean term of illness was 6.32 years for schizophrenics and the length of therapy was 6.10 years Comparative outcomes can be found in considers embraced by different creators from Poland and abroad. Gorna et al. demonstrated that in individuals with schizophrenia, inside a normal time of 5 years after the primary hospitalization. [23]

In our study, table 3 and table 4 feature that the QoL of schizophrenics is generally improved than that of evidently ordinary solid controls. On QoL scores, schizophrenic patients had most reduced scores in the crude social relationship space. It has been recorded that patients experiencing constant psychological maladjustment have a solid aversion for the related shame attributable to which they reject themselves from ordinary public activity. All things considered, there is a high predominance of formal and casual separations by society/network. This is as per the investigation of Solanki et al. [24] Such underestimated individuals frequently pull back as well as respond by bringing down their social connection and additionally desire as reflected by helpless social scores. Henceforth, the distinction of the mean was most minimal in the social area. Furthermore, the presence of negative indications, for example, sociality, a volition, and detachment were found in patients like Gupta et al. [25]

As seen in table 5, occupation had a critical relationship with the social relationship area of QoL. This shows that occupation may give the social solace to the schizophrenics better than to the ordinary controls. Our examination is steady with Solanki et al., and this can presumably be clarified by the yearning of the patients to live and acquire like "typical individuals" in order to have an ordinary social relationship as clarified before. [25] There was no huge connection between QoL with individual pay too with the social relationship space that was in inconsistency to a past report from India. [26] This was likely because of the distinction in the technique for money assortment. Past examinations gathered the entire family pay, though the current investigation gathered the individual pay of the patients. Additionally, the span of disease and treatment had no relationship with QoL or its area.

PANSS-positive scores were fundamentally corresponded negative way with the physical area and all out QoL table 6, which were like the consequence of Solanki et al. [24] actually, there was no critical relationship in the PANSS-negative scale. The overall psychopathology subscale had a critical negative connection with the mental space in particular. In inconsistency to appropriate writing, just certain areas seem to add to the distinction in the QoL. [27] This could be because of an inalienable contrast in the investigation populace or attributable to the factor that the current populace was under dynamic treatment for fluctuating time spans with countless them having ≥5 long periods of dynamic treatment, prompting adjustment of indications in singular areas. In any case, the current investigation is in accordance with the investigation of Heslegrave et al. [28] It must be remembered that the size of general psychopathology contains things with questions identified with side effects of despondency and nervousness. It is plausible that nervousness and sadness cloud the other cardinal highlights of schizophrenia. As refered to in the writing this relationship could provide a guidance for future schizophrenic examination. [29]

Social help is viewed as one of the most significant defensive elements of emotional wellness, and is likewise associated with a superior personal satisfaction in individuals with schizophrenia. Numerous examinations affirmed the positive impact of psychoeducation exercises on the personal satisfaction in individuals with mental issues. [30,31]

Limitations

1. Small sample size might have affected results, for example; difference in psychological health subscale of the WHOQOL may reached statistical significance in a larger sample.
2. The current study was based on an exclusively hospital-based outpatient sample that might not be representative of patients in the community.
3. The current study included patients with DOI of 2 years or more to make the sample homogenous, which limits the generalisation of results to schizophrenic patients having an acute illness.
4. As chronic stable patients were included in this study, data from patients with more severe illness were missing.

CONCLUSION

There is a relatively poor QoL for schizophrenics as compared to normal individuals in spite of the long term of pharmacological treatment. Chronic schizophrenic patients require more attention in physical and social domains too. Certain factors influencing QoL are not changeable; those that can be changed need to be identified. Effective management of these factors would improve the QoL of these patients. WHO-BREF construct can be used to periodically evaluate the treatment efficiency for targeted interventions and create more specific measures of response to treatment. The study also underlines the need for India-specific QoL BREF questionnaire, given the consideration of our locoregional and cultural aspects.

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