

ORIGINAL ARTICLE

PATTERN OF POSITIVE AND NEGATIVE SYMPTOMS IN SCHIZOPHRENIA PATIENTS: ROLE OF PATIENTS' PERCEPTION, MOTIVATIONS, AND SOCIOECONOMIC STATUS

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Background: Treatment of Schizophrenia requires resources and strict adherence from the patients, both of which are usually lacking. This study investigated the severity of positive, negative and general psychopathological symptoms along with the impact of patients' perception, motivations and socioeconomic status and treatment outcomes for treating patients with schizophrenia disorder. **Methods:** A total of 110 patients, 58.2% males and 41.8% females were included. Patients were divided into low, middle and high income status. Patients classified into group getting treatment immediately, delayed and reluctant toward treatment. After one month of the medication, patients were assessed using PANSS. **Results:** Prevalence of positive symptoms (54.5–72.7%), negative (53.6–71.8%) and general psychopathological symptoms were found (24.5–80%). Significant difference was found between patients with positive and negative perception toward treatment on PANSS. Patients with high income status were found significantly different from middle and low income status on PANSS (i.e., $F=166.04, p<0.001$; $F=34.32, p<0.001$; $F=47.26, p<0.001$ respectively). Patients who got treatment immediately were found significantly different as compared to those who delayed and showed reluctant attitude toward treatment on PANSS (i.e., $F=194.75, p<0.001$; $F=142.19, p<0.001$; $F=66.37, p<0.001$ respectively). **Conclusion:** The frequency of symptoms was found higher. Patients' positive perception, motivation and financial resources play an important role in treatment adherence.

Keywords: Positive and Negative Symptoms, Perception, Motivation, Patients, Schizophrenia

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INTRODUCTION

Schizophrenia is a chronic, debilitating and life-long disorder which is prompted in heterogeneous, complex and multi-dimensional manners by a miscellaneous pallet of biological, developmental and environmental threats.¹ The psychosis incidence rate is calculated 0.7% in the population with 14% global burden of disease which is an alarming number.^{2,3} Another estimate reported, 21 million people are suffering from schizophrenia worldwide and 2–3% mortality rate than general population.⁴ Moreover, approximately 7 out of 1000 individuals affected with psychosis age 15–35 years.⁵ In the United State, 22.1% of individuals around age 18 years are affected due to schizophrenia.⁶ Psychosis rate is also higher in the Middle East and East Asia as compared to Japan, Australia and the United States.⁷ In Asian countries, like Bangladesh, the incidence rate is calculated 1.10% in adults, 0.10% in children and 2.54 out of 1000 in rural population.⁸ In India, 3/1000 is affected by schizophrenia and more or less similar incidence rate is estimated in other Asian countries.⁸ In Pakistan, the prevalence of schizophrenia disorder is estimated at 1.5% on a total sample of adults and 0.3–0.7% prevalence is estimated on a variety of samples worldwide (DMS-5).⁹

Schizophrenia matches to the most recognizable group of symptoms; such as positive, negative and general psychopathological symptoms.^{10,11} The most cardinal and prominent symptoms are hallucinations and delusions.¹² Deficits commonly appear in individuals with multi-factorial fashions, prominently in 'neurocognition' domain that causes marked impairment in attention, working memory and executive functioning.¹³ Another domain is social cognition that is affected remarkably and causes impairment in understanding and interpreting the state of mind, facial expression and body gestures, and difficulty to understand and judge the modes of verbal and non-verbal communications.¹⁴ Since impairment, it is very unfortunate, when social cognition is not addressed over time it drives to negative symptoms.¹⁵ Overtime time deficits increase in an individual's perception that replicates due to low motivation, socioeconomic burden, lack of social support and loss of employment.² In adolescents or young adults, it comes with a blunt psychotic episode with high risk and severe symptoms. Occasional and severe symptoms may appear in the prodromal period and patients with high risk and untreated symptoms eventually transit to other comorbid disorder.¹⁶

Patients' perception and motivation toward treatment are the key elements of recovery. Patients'

negative perception about treatment shepherds to low motivation that ultimately causes termination.¹⁷ Lack of awareness and guidance are the main factors behind it. Stigma is another issue of treatment avoidance. Severe deficits reflect in individuals' daily functioning when symptoms remain unmanaged. After a while patient develops negative beliefs about treatment because he has attempted some unsuccessful attempts. Eventually, the patient decreases interest in treatment and becomes reluctant. Findings of 39 studies have been reported, patients with low motivation developed 41–50% negative perception and 70% of patients avoided medication due to negative belief toward treatment.¹⁸ Another key reason is poverty. It is observed, 4/10 major reason for psychosis is a dearth of resources and therefore, psychosis is more common in unprivileged countries.¹⁹ Individuals with financial difficulties cannot accomplish essential needs and how they afford costly treatment. The survey conducted in 11 unprivileged countries, the prevalence of positive symptoms was estimated 71.4% and negative symptoms were 56.5%.²⁰ Another survey conducted in 14 countries, reported 2.8% of people are with Years Lived with Disability and 1.1% for people with Disability-Adjusted Life Years.²¹ In low-income countries, financial resources are insufficient to fulfil treatment facility. Therefore, prevalence is being higher and its significance we may compare with the US government who spends approximately \$62.7 billion yearly to address psychiatric but problems still exist.²¹

The purpose of the current study was to explore the role of patients' perception and motivation in treatment adherence of patients with schizophrenia disorders. Further, the study aims to investigate the impact of socioeconomic status in the course of treatment. The variables impact was calculated on the pattern of positive, negative and general psychopathological symptoms after medication. Moreover, it was noticed to boost up patients' motivation and change their perception in favour of medication is how much important for effective treatment.

METHODOLOGY

This was a comparative study conducted from June 2017 to October 2018. A total of 110 schizophrenia patients were taken from different psychiatric hospitals of the Karachi. The sample size was estimated using formula $N > 50 + 8K$.²² The sample size was calculated as 100 cases while 110 patients were recruited for the current study in age range 18–50 years. Purposive sampling technique was used to collect the data. Approval of ethical committee was obtained. Initially, patients were referred to clinical psychologists for psychological assessment. All patients were diagnosed according to DSM-V criteria. Some structured

interviews were conducted and checklists were applied to assess patients' level of motivation and perception about treatment. Patients' socioeconomic status was determined on the base of monthly income. Patients with a co-morbid medical and psychiatric problem, with a chronic history of illness, and a history of multiple episodes were excluded. Patients included with the intact ability to read, write and understand.

After the psychological assessment, patients were referred to as trained psychiatrists for pharmacotherapy. Psychiatrists prescribed the medication and guide the patients about dose and frequency per day. Patients were called for follow up with a one-week interval. On each appointment, clinical psychologist educated the patients and guided them about the significance of medication and follow-ups. Psychiatrists and clinical psychologists worked together throughout the study. After one month follows up PANS scale was administered to assess treatment progress.

The PANSS is 30 items scale. It is administered individually.²³ The PANSS is designed to measure the severity of the symptom of schizophrenia patients (i.e., positive, negative and general psychopathological symptoms). This scale identifies the symptoms in patients at different ranges; such as the absence of symptoms, presence of symptoms and severe symptoms. PANSS is a reliable and valid measure that has been used in various studies. It has good reliability and validity estimation. The PANSS was administered by a trained clinical psychologist in form of a clinical interview. Scale administration time is approximately 40–50 minutes.

After completion, the protocols were scrutinized. Incomplete forms were excluded and remaining data were scored according to the manual. Further, data excel sheet was prepared and then it was shifted to SPSS-22 for statistical analysis. Frequency distribution statistics were used to check symptoms of severity in the sample. Further, *t*-test statistics using $\alpha = 0.05$ with .95 confidence interval was applied to find out the difference in the variables between two groups. Furthermore, One-Way analysis of variance was used to calculate difference among a group of socioeconomic status on different variables.

RESULTS

Study sample consisted of 58.20% males and 41.80% females. Among them, 39.10% were single, 44.50% were married and 16.40% were separated families. Regarding education level, 28.20% were below Matric, 32.70% were up to Matric, 26.40% were Intermediate, and 12.70% had education up to undergraduate level. Patients from nuclear family system were 71.80% and from joint family system were 28.20%.

Thirty percent patients had high, 33.60% had middle, and 36.40% had low income status. Frequency of positive, negative, and general psychopathological symptoms are tabulated as Table-1. Patients with positive and negative perception toward treatment were found significantly different on PANSS (Table-

2). Participants who got treatment immediately were found significantly different as compared to delayed and reluctant patients on PANSS (Table-3). There was found significant difference among low, middle and high income status on PANSS (Table-4).

Table-1: Frequency distribution statistics of patients with schizophrenia disorder on PANSS [n=110, n (%)]

Symptoms	Absent	Mild	Severe
P1-Delusion	32 (29.1)	4 (3.6)	74 (67.3)
P2-Conceptual distortion	42 (38.2)	3 (2.7)	65 (59.1)
P3-Hallucinatory behaviour	32 (29.1)	4 (3.6)	74 (67.3)
P4-Excitement	46 (41.8)	4 (3.6)	60 (54.5)
P5-Grandiosity	31 (28.2)	11 (10.0)	68 (61.8)
P6-Suspiciousness/persecution	25 (22.7)	7 (6.4)	78 (70.9)
P7-Hostility	22 (20.0)	9 (8.2)	79 (71.8)
N1-Blunted affect	27 (24.5)	8 (7.3)	75 (68.2)
N2-Emotional withdrawal	27 (24.5)	6 (5.5)	77 (70.0)
N3-Poor rapport	17 (15.5)	14 (12.7)	79 (71.8)
N4-Passive social withdraw	42 (38.2)	5 (4.5)	63 (57.3)
N5-Difficulty in abstract thinking	42 (38.2)	9 (8.2)	59 (53.6)
N6-Lack of spontaneity	33 (30.0)	14 (12.7)	63 (57.3)
N7-Stereotype thinking	36 (32.7)	7 (6.4)	67 (60.9)
G1-Somatic concern	50 (45.5)	8 (7.3)	52 (47.3)
G2-Anxiety	28 (25.5)	2 (1.8)	80 (72.7)
G3-Guilt feelings	38 (34.5)	2 (1.8)	70 (63.6)
G4-Tension	39 (35.5)	6 (5.5)	65 (59.1)
G5-Mannerism and posturing	66 (60.0)	9 (8.2)	35 (31.8)
G6-Depression	31 (28.2)	7 (6.4)	72 (65.5)
G7-Motor retardation	52 (47.3)	12 (10.9)	46 (41.8)
G8-Uncooperativeness	71 (64.5)	12 (10.9)	27 (24.5)
G9-Unusual thought content	37 (33.6)	24 (21.8)	49 (44.5)
G10-Disorientation	28 (25.5)	26 (23.6)	56 (50.9)
G11-Poor attention	52 (47.3)	19 (17.3)	39 (35.5)
G12-Lack of judgment/insight	40 (36.4)	10 (9.1)	60 (54.5)
G13-Disturbance of volition	19 (17.3)	3 (2.7)	88 (80.0)
G14-Poor impulse control	39 (35.5)	5 (4.5)	66 (60.0)
G15-Preoccupation	32 (29.1)	7 (6.4)	71 (64.5)
G16-Active social avoidance	24 (21.8)	7 (6.4)	79 (71.8)

Table-2: Difference between schizophrenia patients with positive perception and negative perception toward treatment on PANSS (n=110, Mean±SD)

Symptoms	Patients' positive perception towards treatment (n=56)	Patients' negative perception towards treatment (n=54)	t	p
P1-Delusion	2.86±1.71	5.04±1.91	-6.32	<0.001
P2-Conceptual distortion	1.93±1.31	4.22±2.03	-7.04	<0.001
P3-Hallucinatory behaviour	2.57±1.78	4.98±2.08	-7.01	<0.001
P4-Excitement	2.09±1.28	3.13±1.96	-4.28	<0.001
P5-Grandiosity	1.91±1.58	3.39±2.36	-4.85	<0.001
P6-Suspiciousness/ persecution	2.91±1.69	5.06±2.07	-6.00	<0.001
P7-Hostility	3.13±2.11	4.81±2.17	-4.14	<0.001
N1-Blunted affect	1.38±0.75	2.89±1.78	-5.78	<0.001
N2-Emotional withdrawal	1.38±1.01	3.31±1.91	-6.64	<0.001
N3-Poor rapport	1.14±0.52	3.19±1.85	-8.01	<0.001
N4-Passive social withdraw	1.55±1.07	4.11±1.60	-8.81	<0.001
N5-Difficulty in abstract thinking	1.41±0.91	4.06±1.84	-8.52	<0.001
N6-Lack of spontaneity	1.84±1.24	3.46±2.14	-4.86	<0.001
N7-Stereotype thinking	2.41±1.92	3.93±1.95	-4.11	<0.001
G1-Somatic concern	1.96±1.36	3.13±2.09	-3.48	<0.001
G2-Anxiety	2.46±1.45	3.54±1.48	-4.01	<0.001
G3-Guilt feelings	2.29±1.48	3.48±1.60	-3.99	<0.001
G4-Tension	2.43±1.74	2.96±1.98	-0.98	>0.135
G5-Mannerism and posturing	1.18±0.58	2.24±1.22	-5.90	<0.001
G6-Depression	2.80±1.32	3.09±1.74	-1.00	>0.327
G7-Motor retardation	1.54±0.89	2.00±1.07	-2.48	<0.015
G8-Uncooperativeness	1.46±0.76	1.78±1.00	-1.85	>0.067
G9-Unusual thought content	1.75±1.03	2.80±1.98	-3.48	<0.001
G10-Disorientation	2.05±0.94	2.54±0.77	-2.94	<0.004
G11-Poor attention	2.43±0.99	3.50±2.73	-3.74	<0.001
G12-Lack of judgment / insight	1.89±1.59	3.78±1.98	-5.52	<0.001
G13-Disturbance of volition	3.16±1.82	4.44±1.73	-3.80	<0.001
G14-Poor impulse control	3.18±1.69	4.01±2.00	-4.93	<0.001
G15-Preoccupation	2.43±1.31	3.39±2.26	-2.74	<0.007
G16-Active social avoidance	2.88±1.78	4.04±2.04	-3.19	<0.002

Table-3: Analysis of variance statistics for level of motivations toward treatment among patients with schizophrenia disorder on PANSS (n=110)

Treatment Motivations	Descriptive Statistics		ANOVA		Tukey Test (Group Comparisons)			
	n	Mean±SD	F	p	(I)	(J)	D (I-J)	p
On Scores of Positive Symptoms Scale (P1 to P7)								
GIT	35	41.86±5.21	194.75	<0.001	GIT	WDT	-13.15	<0.000
						RAT	-29.70	<0.000
WDT	37	55.00±3.19			WDT	GIT	13.15	<0.000
						RAT	-16.56	<0.000
RAT	38	71.55±9.24			RAT	GIT	29.70	<0.000
						WDT	16.56	<0.000
On Scores of Negative Symptoms Scale (N1 to N7)								
GIT	35	31.23±1.14	142.19	<0.001	GIT	WDT	-9.61	<0.000
						RAT	-28.91	<0.000
WDT	37	40.84±4.42			WDT	GIT	9.61	<0.000
						RAT	-19.29	<0.000
RAT	38	60.13±11.92			RAT	GIT	28.91	<0.000
						WDT	19.29	<0.000
On Scores of General Psychopathological Symptoms Scale (G1 to G16)								
GIT	35	44.14±6.43	66.37	<0.001	GIT	WDT	-3.18	>0.143
						RAT	-17.80	<0.000
WDT	37	47.32±4.61			WDT	GIT	3.81	>0.143
						RAT	-14.63	<0.000
RAT	38	61.95±9.33			RAT	GIT	17.80	<0.000
						WDT	14.63	<0.000

GIT=Get Immediate Treatment, WDT=With Delayed Treatment, RAT=Reluctant Attitude towards Treatment

Table-4: One-way analysis of variance statistics for different socioeconomic status among schizophrenia patients on PANSS (n=110)

Socioeconomics status	Descriptive Statistics		ANOVA		Tukey test (Groups Comparison)			
	N	Mean±SD	F	p	(I)	(J)	D (I-J)	p
On Scores of Positive Symptoms Scale (P1 to P7)								
High	33	42.03±4.69	166.04	<0.001	H	L	-11.78	<0.000
						M	-28.99	<0.000
Middle	37	53.81±5.16			M	L	12.00	<0.000
						H	-16.91	<0.000
Low	40	70.99±8.98			L	M	28.99	<0.000
						H	17.21	<0.000
On Scores of Negative Symptoms Scale (N1 to N7)								
High	35	33.82±4.88	34.32	<0.001	H	L	-8.43	<0.006
						M	-21.44	<0.000
Middle	37	42.24±12.72			M	L	8.43	<0.006
						H	-13.01	<0.000
Low	40	55.25±13.18			L	M	21.44	<0.000
						H	13.01	<0.000
On Scores of General Psychopathological Symptoms Scale (G1 to G16)								
High	33	42.94±6.55	47.26	<0.001	H	L	-6.33	<0.003
						M	-7.31	<0.000
Middle	37	49.27±8.43			M	L	6.33	<0.003
						H	-10.98	<0.000
Low	40	60.25±7.98			L	M	17.31	<0.000
						H	10.98	<0.000

SES=Socioeconomic Status, SS=Sum of Squares, H=High, M=Middle, L=Low

DISCUSSION

Findings reported prevalence of positive and negative symptoms were found significantly high among patients with schizophrenia disorder. This indicates patients' lack of motivations, negative perception toward treatment and financial resources significantly does matter a lot in the treatment of schizophrenia disorders. When the patient does not believe in treatment he/she avoids medications and even sometimes patient skips medication or delayed time interval intentionally because they perceive the medication is worthless.²⁴ Sometimes patients avoid or skip medication due to worse side effects of the medication. The reason we observed in our clinical

sample, those patients who came with positive perception and high motivations they significantly improved their symptoms and responded better on medication and even took medication on time.¹⁷ While those who were not motivated for treatment and some others their attitude was negative toward treatment they sustain their positive and negative symptoms and did not respond significantly on medications. Mostly, such patients were seemed less motivated, reluctant, and avoidant about treatment and poor insight was also another matter. While patients with positive beliefs and high motivations toward treatment they perceived high rate of treatment efficacy because they internally and intentionally showed interest in treatment and they want to change oneself toward a better life, while less

motivated and with negative beliefs toward treatment experience the symptoms with high severity because they started to avoid and skip medication or they take medication according to mood.²⁵

Despite these factors, poverty is another factor which significantly contributes to the treatment of patients with schizophrenia disorders. Similarly, study findings reported, patients with high-income resources were found significantly different as compared to patients with low and middle-income status. These findings are consistent with the findings of various countries such as Asian countries, there is a high poverty rate, and there is a high prevalence rate of schizophrenia comparatively.²⁶ Patients with low-income resources already have very limited resources to manage daily routines; additionally, if they have to face psychiatric illness they fell very difficult and this thing also affects their lifestyle badly and gradually it leads to problem severity.²⁰

In the opposite side, patients with high-income resources can avail better treatment opportunities, they afford best practitioners and bear medication expenses.²⁷ Moreover, patients with high-income status usually approach practitioner on the right time because they have no issue of affordability while patients with low-income resources they have to manage their resources first and then they can avail treatment, and sometimes it causes reason of delay of treatment. Another reason is a lack of treatment facilities and support system which also causes of severity in patients.²⁸

CONCLUSION

In schizophrenia patients, severity of symptoms increases without treatment. Patients' positive perception, motivation, and having better financial resources produce better treatment outcomes. Further, studies are recommended to deal with schizophrenia patients with latest and multi-fashioned treatment intervention.

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