Premorbid Social functioning in Schizophrenia, Bipolar Affective disorder and Healthy Controls – A Comparative Study

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Abstract: Objective of the study was to compare the premorbid social adjustment in patients with schizophrenia, bipolar affective disorder and healthy controls. Method: Maternal recall was used to assess the premorbid adjustment of patient with schizophrenia, bipolar affective disorder recruited from a survey of consecutive hospital admission for schizophrenia, bipolar affective disorder and healthy controls drawn from same catchment area. Results: In the study there was significant difference in poor social functioning in childhood and adult psychosis. Conclusion: The results of the study showed there was significant difference in premorbid sociability, and school functioning between patients with schizophrenia, bipolar patients exhibited poorer social impairment though to a lesser degree than subjects with schizophrenia.

I. INTRODUCTION

Premorbid is defined as the period six months before first hospitalization or psychiatric contact or six months before florid psychotic symptoms such as delusions, hallucinations, thought disorder inappropriate or bizarre behavior in which symptoms are not apparently due to organic causes (Cannon – Spoor et al, 1982). Earlier investigations had shown approximately one third of patients with schizophrenia exhibited obvious premorbid behavioural abnormalities (Offord and Cross, 1969) studies directly comparing the premorbid functioning of patients with Schizophrenia and patients with affective disorder have shown greater impairment in patients with Schizophrenia. Prospective and retrospective cohort studies had found differences in childhood social, and intellectual functioning between pre-schizophrenic children and general population. There is evidence showing similar effects for children destined to develop affective disorder (Angust and Paul, 1986). The premorbid adjustment of patients who developed affective disorder has been studied less frequently. Studies directly comparing the premorbid functioning of patients with schizophrenia and affective disorder have shown greater impairment in patients with schizophrenia. Marry E Kelley and Mark Gillbertson,1992 on their study found an association between premorbid functioning and residual negative symptoms syndrome.

II. Materials and Method

This is a retrospective case control study was carried out on patients of Institute of Mental Health at Chennai. The study period was from October 2004 to February 2005 and a total of 30 patients of Schizophrenia, 30 patients of Bipolar affective disorder and 30 Healthy Controls aged between 18 to 30 years participated in this study.

Study design: A retrospective case control study.
Study location: This was a tertiary care teaching hospital attached to Madras Medical College.
Study duration: October 2004 to February 2005.
Sample size: 30 patients of Schizophrenia, 30 patients of Bipolar affective disorder and 30 Healthy Controls.
Subjects and selection method: The study population was drawn from in-patients of Institute of Mental Health, Chennai who were consecutively admitted in an in-patient ward and their friends accompanying the patients were taken as healthy controls. Only subjects with mother as the informant had been recruited for the study.

INCLUSION CRITERIA FOR SCHIZOPHRENIA AND BIPOLAR AFFECTIVE DISORDER
1. Patients with diagnosis of Schizophrenia and Bipolar Affective disorder according to DSM IV.
2. Presence of psychotic symptoms in clear consciousness.
3. Age between 18-30 years.
4. Education – Minimum 8[th]std.
5. Duration of illness within 5 years of illness.
6. Patient mother is the informant who did not have psychotic illness.

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7. Drug free patients for one year.

EXCLUSION CRITERIA FOR SCHIZOPHRENIA AND BIPOLAR AFFECTIVE DISODER
1. Organic cause
2. Alcohol or substance abuse
3. Mental retardation
4. Age of onset of illness before the age of 16 years
5. Childhood psychiatric disorders

CONTROL
The comparison subjects were chosen to represent the population aged 18 – 30 years. Friends who are accompanying the patients and not related to the patients.

Procedure methodology
Informed consent obtained from each subject and the mother after complete description of the study. The methodology of the study is approved by the ethics committee of the Institute of Mental Health, Chennai. Age, sex matched controls where from the friends who are accompanying the patients and not related to them. Patients were recruited from the in-patients department of Institute of Mental Health consecutively admitted from October 2004 to February 2005. All the patients, controls and the mothers were interviewed and all the records pursued. The mothers recall was used to assess the premorbid adjustment using Premorbid Social Adjustment Scale.

INSTRUMENTS USED
1. Semistructured questionnaire to elicit the socio demographic data.
2. Socioeconomic scale for urban population (Gupta and Sethi).
3. Premorbid social adjustment scale (Foerster et al.)
4. Family history method – Research diagnostic criteria (FH – RDC).
5. Scale for assessment of positive symptoms (SAPS)
6. Scale for assessment of negative symptoms (SANS) (5,6 instruments are given only for patients of schizophrenia).

STATISTICAL METHOD
ANOVA one way analysis of variance
ANOVA multivariate analysis of variance
Posthoc test with Bonferroni correction multiple test
Pearson correlational analyses

III. Results
Table 1: One-way Analysis of variance on premorbid social adjustment scale scores between group of childhood and adolescence

ANOVA	(df = 2, 89)	
	F	Significant
Sociability at 5-11 years	7.578	0.001
Sociability at 5-11 years	1.406	0.251
Sociability at 12 - 16 years	44.542	0.000
Schooling at 12 – 16 years	12.209	0.000
Score at 5 – 11 years	7.263	0.001
Score at 12 – 16 years	51.211	0.000
Change Score	57.055	0.000
Total Score	25.636	0.000

Analysis of variance was applied to compare the mean of three groups (Schizophrenia, Bipolar affective disorder, control) (df = 2,89) on different sub scores. Significant differences was noted in the subscores of premorbid social adjustment scale measures at 5 – 11 years (F=7.578, P < 0.001), 12-16 years (F=51.2 P < 0.000).

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No significant difference was noted between the three groups on the subscore of schooling at 5-11 years. Further analysis of the results was done using Bonferroni correction for multiple tests.

The patients with schizophrenia score significantly worse than control subjects on childhood 5-11 years (t =4.26, P<0.002),adolescent 12-16 years (t=10.6, P<0.000) adjustment scores. The patient with bipolar disorder score significantly worse than control subjects on childhood, 5-11 years (t=3.46 P <0.01), adolescent 12-16 years (t=9.03, P<0.000).

The control group shows negative mean change score(-2.7) indicating that social adjustment improved in adolescence. In contrast both patient groups exhibited positive mean change score indicated that functional deterioration in adolescence. The patients with schizophrenia had higher mean change score (3.6) over patients with bipolar affective disorder (2.87) but the values are not statistically significant (P < 0.89).

The patients of schizophrenia scored significantly worse than comparison subjects on sociability sub score (t=8.47, P<0.000) and schooling sub sore at 12-16 years (t =2.1, p<0.000).

No significant difference was found between the two groups of patients on schooling sub score for the age of 5-11 years (p<0.35).

The Bipolar affective disorder patients differed significantly from the comparison groups on sociability (t=7.67, P<0.000), and schooling subsore at 12-16 years (t=1.37, P<0.006) and not on schooling subscore at 5-11 years (P<0.67).

No statistical significant difference in the sex, social class, distribution between the three groups.

Table 2: Table 2 Premorbid social adjustment scale scores of Healthy comparison subjects and patients with bipolar disorder and schizophrenia

Premorbid Adjustment scale measure	A Control		B (Bipolar)		C (Schizophrenia)		B versus A[b]		C versus A[b]		B versus C[b]	
	M	SD	M	SD	M	SD	t	p[c]	t	p[c]	t	p[c]
Score at 5-11years	11.57	3.01	15.03	4.99	15.83	5.46	3.46	0.010	4.26	0.002	-.08	1.0
Score at 12-16 years	8.87	1.55	17.90	4.8	19.43	5.62	9.03	0.000	10.6	0.000	-1.53	0.53
Total score	20.43	4.25	32.93	9.54	35.27	10.69	12.5	0.000	14.8	0.000	-2.3	0.89
Sociability sub-score 5-11 years	7.43	2.08	10.37	4.48	11.03	4.38	2.93	0.01	3.6	0.001	-0.667	1.0
Sociability sub-score 12-16 years	5.23	1.43	12.90	4.40	13.70	4.77	7.677	0.000	8.47	0.000	-0.8	1.0
Schooling sub score 5-11 years	7.43	2.08	10.37	4.48	11.03	4.38	0.533	0.625	0.667	0.350	-0.133	1.0
Schooling sub-score 12-16 years	3.63	0.72	5.00	1.93	5.7	2.03	1.37	0.006	2.1	0.000	-0.733	0.278

a – Higher scores indicate poorer adjustment

b – Performed on log transformed values of scores

c – pairwise test with Bonferroni correction

SD – Standard Deviation

t – test for means

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Table 3: Demographic and clinical characteristics of 30 (Drug free for one year) Patients of Schizophrenia with positive, mixed, or negative symptoms

Characteristic	Positive Symptoms N=4		Mixed Symptoms N=18		Negative Symptoms N=8		Analysis of Variance df=2.29	
	Mean	SD	Mean	SD	Mean	SD	F	P[a]
Age at the time of Study (Years)	26.00	2.71	25.67	3.09	26.75	2.82	0.366	0.697
Age at onset of first psychotic symptoms (Years)	21.75	2.50	23.00	3.07	24.25	2.87	1.024	0.373
Duration of illness (Years)	4.25	0.96	2.67	1.24	2.50	0.76	3.882	0.033
Formal education (Years)	1.50	1.91	10.06	2.55	10.63	2.56	0.165	0.849
Scores on premorbid Adjustment scale Childhood 5-11 Years	16.00	6.22	16.33	6.44	14.63	2.00	0.259	0.773
Adolescence 12-16 Years	19.00	7.30	20.06	6.37	18.25	2.66	0.284	0.755
Change Score	3.00	3.46	3.72	2.87	3.63	3.20	0.093	0.911

Change score – Early adolescence premorbid adjustment scale minus childhood score on the premorbid adjustment scale.

ANOVA was used to assess the group differnces in premorbid adjustment variables (Childhood 5-11 years adolescence 12-16 years). ANOVA was used to assess the differences in demographic and premorbid deterioration variables across groups.

An ANOVA on the premorbid deterioration variable (Adolescence premorbid adjustment scale score minus childhood score) indicated that overall functioning between childhood and adolescence was not significant among groups.

Table 4: Correlation between premorbid functioning and negative symptoms in drug free patients with schizophrenia

Correlation with score on premorbid adjustment scale				
Tests of Schizophrenia Symptoms	Age 5-11 Years		Age 12-16 Years	
	R	P	r	p
Affective	-0.072	0.706	-0.008	0.966
Alogia	0.033	0.861	0.036	0.849
Avolition	0.127	0.503	0.059	0.755
Anhedonia	-0.119	0.531	.063	0.741
Attention	0.271	0.147	0.214	0.256

The results or Pearson correlational analysis are presented in this table. The negative symptoms such as affective flattening (P < 0.706) (P<0.861)/ Avolition − apathy (P<0.503), anhedonia − asociality (P<0.0531), attention (P<0.147) did not correlate with premorbid adjustment item for the childhood group (5-11 years).

The negative symptoms did not correlate with premorbid adjustment items for the adolescent group (12-16 years).

IV. Discussion

The study was done using a retrospective case control design. The patients with diagnosis of schizophrenia, bipolar affective disorder and healthy controls were analyzed for socio-demographic variables such as age, sex, marital status , social class of father at the time of subjects birth. There is no difference of socio-demographic variables such as age, sex and marital status. The results of the study showedthe association between poor social functioning in childhood and adult psychosis. In our study the comparison between bipolar subject and healthy subjects there is significant difference on pre-morbid social functioning in bipolar patients. This finding is comparable with previous studies Cannon et al, 1997 reported poorer premorbid social functioning in bipolar affective disorder. In our study there is significant differences in premorbid sociability and school functioning between subjects with schizophrenia and normal healthy comparison subjects (Cannon et al, 1997, Vourdass et al, 2003).

V. Conclusion

1. The study was done on in the hospital based sample. This is not the representative of persons with diagnosis of schizophrenia and bipolar affective disorder.
2. The study was retrospective case control design so there is possibility of significant recall by us.
3. The education of the mother is not taken into account.

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