

## Premorbid Social Functioning in Schizophrenia and Healthy Controls – A Comparative Study

Dr. I. Meenakshi, M.D. (Psy).

Associate Professor and Head of the Department, Department of Psychiatry, Thanjavur Medical College Hospital, Thanjavur, Tamil Nadu

Corresponding Author: Dr. I. Meenakshi, M.D. (Psy).

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**Abstract:** Objective of the study is to compare the premorbid social adjustment in patients with schizophrenia and healthy controls. Method: Maternal recall was used to assess the premorbid adjustment of patients with schizophrenia recruited from a survey of consecutive hospital admission for schizophrenia and healthy controls drawn from the same catchment area. Results: In the study there is significant difference in premorbid sociability and school functioning between subject with schizophrenia and healthy controls. These results are comparable to the previous studies on premorbid functioning in schizophrenia. Conclusion: The results of this study showed the association between poor social functioning in childhood and adult schizophrenia. In our study there is significant difference in premorbid sociability and school functioning between subjects with schizophrenia and healthy controls.

**Keywords** – premorbid adjustment, schizophrenia, sociability

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### I. Introduction

Investigations of childhood precursors of adult psychosis will clarify our understanding of the etiology and may aid in strategies for early detection and treatment. Premorbid period is defined as the period 6 months before first hospitalization or psychiatric contact or 6 months before florid psychotic symptomatology such as delusions, hallucinations, thought disorder, inappropriate or bizarre behaviour in which symptoms are not apparently due to organic causes (Cannon – Spoor et al. 1982).

Earlier investigations have shown approximately one third of patients with schizophrenia exhibited obvious premorbid behavioural abnormalities (Offord et al. 1969). Unfortunately most studies on premorbid functioning in psychosis have lacked healthy comparison group and have not been able to examine the distribution of childhood and adolescence social impairment among groups of patients compared with the normal population.

Prospective and retrospective cohort studies have found differences in childhood social and intellectual functioning between pre-schizophrenic children and the general population. This study is undertaken to examine the social functioning in childhood and adolescence among subjects with schizophrenia, and of healthy controls. An attempt is made to investigate the relation between premorbid adjustment and risk factors for schizophrenia.

Malmberg A., Lewis G. et al. (1998) reported that there is a clear association between poor social functioning in childhood and adult psychosis. It has been found that there were significant differences in premorbid social functioning between subjects with schizophrenia and normal comparison subjects. Poorer one's social adjustment, the greater the probability of developing schizophrenia. Mary E. Kelley et al. (1992) in their study found an association between poor premorbid functioning and residual negative symptom syndrome. They found that deterioration in functioning between the periods of childhood and early adolescence was associated with later presence of negative symptoms. They also found that premorbid variables did not correlate with positive symptoms.

### II Materials and Method

This is a retrospective case control study was carried out on patients on Institute of Mental Health at Chennai. The study period was from October 2004 to February 2005. A total of 30 patients of Schizophrenia aged between 18 to 30 years and 30 healthy controls.

**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 aged between 18 to 30 years and 30 healthy controls.

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**Subjects and selection method:** The study population was drawn from in-patients of Institute of Mental Health 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:**

1. Patients with diagnosis of Schizophrenia according to DSM IV.
2. Presence of psychotic symptoms in clear consciousness.
3. Age between 18-30 years.
4. Education – Minimum 8<sup>th</sup> std.
5. Duration of illness within 5 years of illness.
6. Patient mother is the informant who does not have psychotic illness.
7. Drug free patients for one year.

**Exclusion criteria:**

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.

**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 were 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.

These instruments were used for the study:

1. Semi-structured 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 and 6 instruments are given only to patients with schizophrenia

**Statistical analysis:**

Data were analyzed by Post hoc test with Bonferroni correction for multiple tests. Log transformation of premorbid adjustment scales score were used to fulfill the assumption of equal variances. Change scores were computed by substrating childhood score from adolescent score to examine the premorbid deterioration with age. The individual items socialization, peer relations and interests are taken into one factor as sociability items relating to school performance, adaptation to school are taken into another factor as schooling based on work of Cannon et al. (1997).

Pearson correlational analysis was performed on the premorbid adjustment items and negative symptoms of schizophrenia.

**III. Results**

**SAMPLE DESCRIPTION**

**Socio-demographic description of the sample**

**Table 1**  
**Age at the time of study**

Age	Schizophrenia	Control
<20	0	0
20 – 25	15	15
25 – 30	15	15
Total	30	30
Mean and SD	25 and 2.91	26 and 2.91

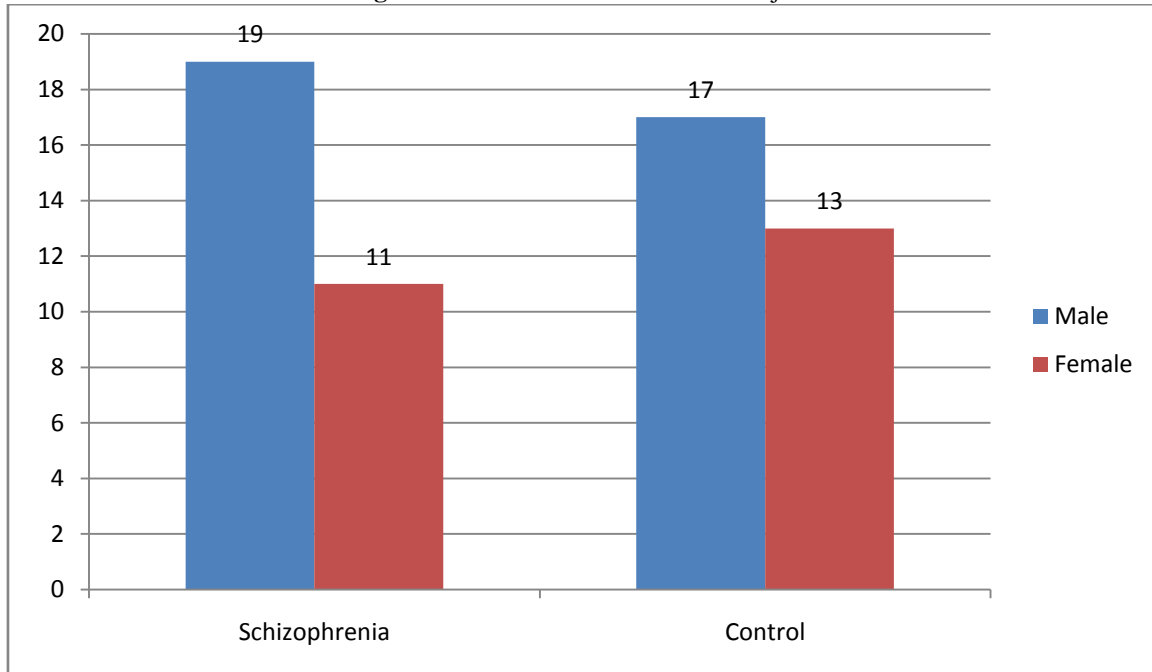
The mean age of the subjects with diagnosis of Schizophrenia is 25 (SD 2.91). Mean age of healthy comparison subjects is 26 (SD 2.91).

**Table 2: Gender distribution of the subjects**

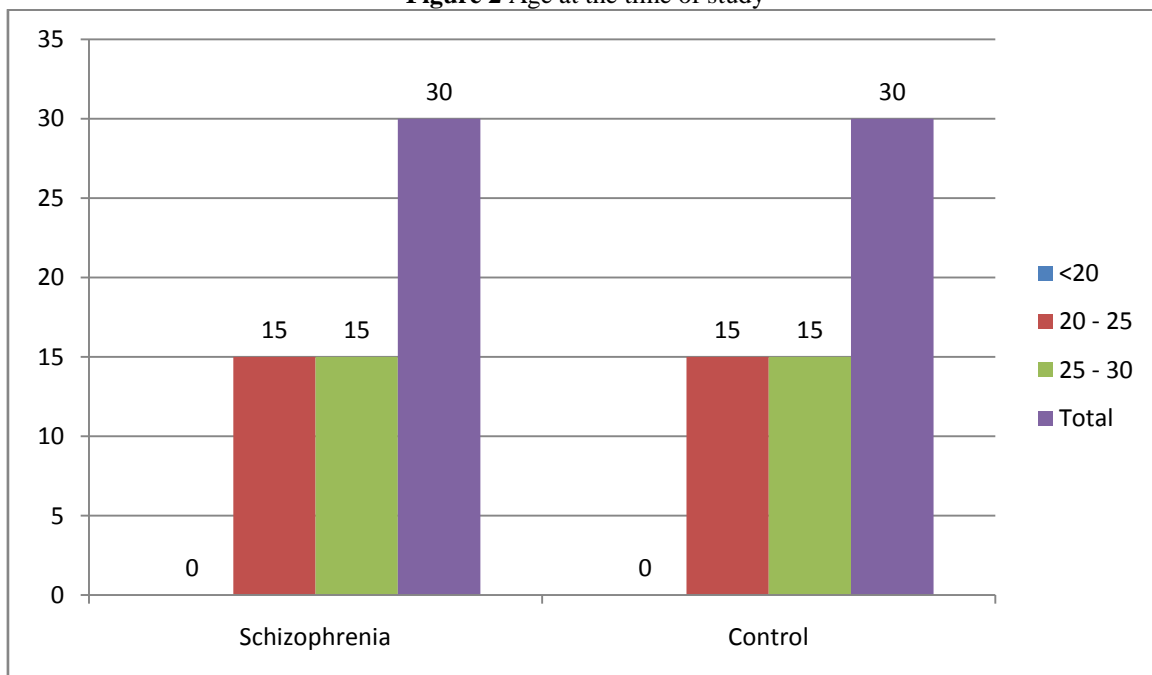
Gender	Schizophrenia	Control
Male	19	17
Female	11	13

From the above table it is seen that there is 19 male subjects of schizophrenia. In this group there is slightly higher number of males.

**Figure 1 Gender distribution of the subjects**



**Figure 2 Age at the time of study**



**Table 3 : Marital Status of the subjects**

Marital Status	Schizophrenia N = 30 (%)	Control N = 30 (%)
Single	22 (73%)	19 (63.3%)
Married	4 (13%)	11 (37.67%)
Separated	2 (6.7%)	-
Divorced	2 (6.7%)	-

In both groups majority were single. In subjects with schizophrenia 73 % were single. In the control group 63.3% were single. In subjects with schizophrenia 2 were divorced.

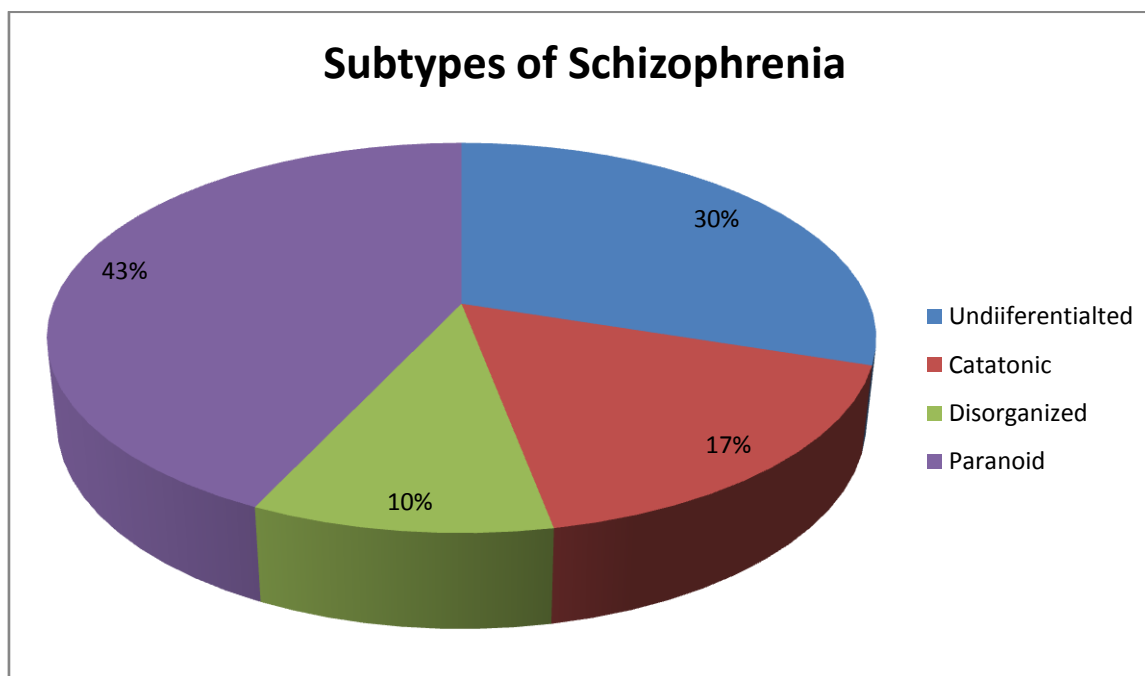
**Table 4: Duration of illness in years – Schizophrenia**

No of Years	Number of persons N = 30 (%)
1 year	5 (16.5 %)
2 years	6 (19.98 %)
3 years	11 (37.67 %)
4 years	5 (16.5 %)
5 years	3 (10 %)

N = Number of subjects

- 37.67 % of subjects had 3 years duration of illness.
- 10 % of subjects had 5 years duration of illness.

**Figure 3 Subtypes of Schizophrenia**



**Table 5 Premorbid social adjustment scale scores of Healthy comparison and patients with schizophrenia**

Premorbid Adjustment scale measure	A (Control)		B (Schizophrenia)		A Versus B	
	Mean	SD	Mean	SD	t	p <sup>c</sup>
Score at 5-11 years	11.57	3.01	15.83	5.46	4.26	0.002
Score at 12-16 years	8.87	1.55	19.43	5.62	10.6	0.000
Total Score	20.43	4.25	35.27	10.69	14.8	0.000
Sociability sub-score 5-11 years	7.43	2.08	11.03	4.38	3.6	0.001
Sociability sub-score 12-16 years	5.23	1.43	13.70	4.77	8.47	0.000
Schooling sub score 5-11 years	7.43	2.08	11.03	4.38	0.667	0.350
Schooling sub-score 12-16 years	3.63	0.72	5.7	2.03	2.1	0.000

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

The patients with schizophrenia score significantly worse than control subjects and childhood 5-11 years ( $t = 4.26, P < 0.002$ ), adolescent 12-16 years ( $t = 10.6, P < 0.000$ ) adjustment scores. No statistical difference in the sex, social class and distribution between the two groups.

**Table 6: Correlation between premorbid functioning and negative symptoms in drug free patients with schizophrenia**

Tests of schizophrenic symptoms	Correlation with score on premorbid adjustment scale			
	Age 5-11 years		Age 12-16 years	
	r	P	r	p
Affective flattening	-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

r = Correlation coefficient

P < 0.05 is significant

The results of Pearson correlational analysis are presented in this table. The negative symptoms such as affective flattening ( $P < 0.706$ ), alogia ( $P < 0.861$ ), avolition – apathy ( $P < 0.503$ ), anhedonia – asociality ( $P < 0.531$ ) did not correlate with premorbid adjustment items 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

This study was done using a retrospective case control design. The subjects with diagnosis of schizophrenia, and the healthy controls were analyzed for socio-demographic variables such as age, sex, marital status, social class of father at the time of subject's birth. There is no difference on socio-demographic variables such as age, sex, marital status. The results of this study showed the association between poor social functioning in childhood and adult schizophrenia.

In our study there is significant difference in premorbid sociability and school functioning between subjects with schizophrenia and healthy controls. These results are comparable to the previous studies on premorbid functioning in schizophrenia (Cannon et al. 1997; Vourdas et al. 2003). Cannon *et al.* (1997) In study of similar design which included 70 subjects of schizophrenia with control of 100 subjects reported significant difference ( $P < 0.0001$ ). Vourdas et al. (2003) have found that in their study poor premorbid adjustment in childhood which became even more deviance in adolescence particularly boys. Malmberg et al. 1998 reported that problems with social adjustments were more common in young men who go on to develop schizophrenia although such problems are widespread in general population.

In our study the school functioning between ages of 5-11 years of subjects with schizophrenia and is not significant compared with control. The school functioning between age of 12-16 years in subjects of schizophrenia is impaired when compared with control. In our study though there was decrease in sociability, the subjects of schizophrenia may be able to function moderately in schooling.

The age of onset of illness in our study is taken only above the age of 16 years, because to know about the premorbid social functioning upto the age of 16 years. We are not able to correlate the family history of psychosis and premorbid social functioning as only 3 subjects of schizophrenia had family history of psychosis.

In our study the negative symptoms in subjects of schizophrenia did not correlate with poor premorbid social functioning. We had 8 subjects of schizophrenia with negative symptoms. Small number of subjects make it difficult to give meaningful correlation.

The main strengths of our study design were the inclusion of healthy controls assessed with the same instruments used for the patients and the use of mothers as the source of information on premorbid adjustments. Mothers are best placed to give accurate retrospective information about a child's early development. (Cannon et al. 1997)

#### V. Conclusion

1. This study is done on the hospital based sample. It is not representative of persons with diagnosis of schizophrenia.
2. The study is a retrospective case control design. So there is a possibility of significant recall bias.
3. The education of the mother is not taken into account.
4. Small sample size prevented subgroup analysis in subjects with schizophrenia.

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