Premorbid Functioning in Schizophrenia: A Controlled Study of Nigerian Patients

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We compared the premorbid social adjustment of 38 schizophrenic patients with that of 20 manic patients. Even though the small sample size affected the number of significant differences obtained, schizophrenic patients consistently showed evidence of poorer premorbid functioning than manics at various stages of social development. Schizophrenic men also tended to have functioned more poorly than women. Poor premorbid functioning was associated with negative syndrome, but not with positive or disorganization syndromes. Our findings suggest that poor premorbid adjustment is an early sign of schizophrenic illness even among patient populations who may be characterized by good short-term outcome.

POOR PREMORBID adjustment is said to characterize schizophrenic patients whose illness follows a chronic course,[1] who show poor response to neuroleptic treatment,[2] who have more neurological soft signs,[3] and who evidence more severe abnormalities on computer tomographic scanning.[4] By demonstrating an association between poor premorbid sociosexual functioning and features such as more severe left-to-right ventricular asymmetry, greater severity of negative symptoms, and worse current social functioning, a group of researchers have suggested that factors associated with severe social deterioration in chronic schizophrenia may also be associated with premorbid sociosexual impairment.[5] The evidence therefore is that poor premorbid functioning may predate a type of schizophrenia that is likely to follow a deteriorating course, and that such a pattern of functioning may not be shown by schizophrenics likely to have a good outcome.

Based on the results of studies conducted in a number of industrialized countries, the suggestion has been made that poor premorbid social functioning is an early manifestation of schizophrenia or is indeed a vulnerability factor of the disorder.[6,7] Such a suggestion derives from findings of greater impairment of premorbid functioning in schizophrenic patients as compared with patients with other psychiatric disorders or with normal controls.[8-10] It remains to be seen whether poor premorbid adjustment will distinguish schizophrenics from patients with other psychiatric disorders in nonindustrialized countries where schizophrenia has been shown to have a better short-term outcome.[11]

In this report, we examine the pattern of premorbid adjustment in a group of schizophrenic patients and compare this with the pattern in patients with mania. We are interested in determining whether schizophrenics are more likely to have shown impaired premorbid social functioning than manics, and if so, to see in what domains of functioning such a difference may emerge. We also examine the correlates of poor premorbid functioning in this group of young patients with an early onset of illness. Thus, we assess the relationship of premorbid functioning with patients' demographic and clinical status.

METHOD

As part of a much larger study, consecutively admitted patients on the two psychiatric wards of the University College Hospital, Ibadan, were assessed with the Composite International Diagnostic Interview,[12] the Scale for the Assessment of Negative Symptoms,[13] and an abridged version of the Brief Psychiatric Rating Scale.[14] The version of the Brief Psychiatric Rating Scale used for the study assessed positive symptoms of conceptual disorganization, grandiosity, suspiciousness, hallucinations, and unusual thought content. The interviews were conducted by either of two senior-trainee psychiatrists who were trained in the administration of the instruments by the first author. On the basis of this assessment, patients were assigned a diagnosis according to the Research Diagnostic Criteria.[15]

At admission, information was sought about each patient's premorbid functioning by interviewing the patient and a close relative or friend with sufficient knowledge of the patient. This interview was conducted by a senior-trainee psychiatrist or a master's-level clinical psychologist, both of whom were trained by the first author. Both were blind to the diagnostic status of the patients. For this assessment, an abridged version of the Premorbid Adjustment Scale (PAS)[16] was used. The PAS assesses premorbid adjustment from a developmental context. Thus, the scale permits evaluation of social, scholastic, and sexual develop-

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0010-440X/94/3506-0010$03.00/0

ment in four age periods: childhood (through age 11), early adolescence (ages 12 to 15), late adolescence (ages 16 to 18), and adulthood (age 19 and older). For this study, early and late adolescence were assessed together. Since a number of our subjects had not received formal education beyond the childhood period and many were engaged in jobs requiring no formal schedule, we also modified the instrument by deleting sections dealing with scholastic or school performance in adolescence and work-related activities in adulthood. We also have not included the score on the general section of the scale, since the general subscale is not strictly a measure of premorbid function. The PAS is scored on a Likert scale of 0 (normal) to 6 (severely impaired).

Since to our knowledge the PAS was being used for the first time in an African setting, we conducted a test of its internal consistency to see whether the instrument could be said to be assessing a unitary construct. We used Cronbach's test of internal consistency for this analysis. An α value of .773 was obtained, suggesting that the PAS assesses a unique feature.

RESULTS

Table 1 shows demographic characteristics of the schizophrenic patients and manic controls. Apart from the observation of a higher mean age at onset for the schizophrenics, the two groups were comparable in other respects.

Table 2 shows the results of blind ratings of the patients on the PAS. Even though schizophrenics showed a trend of having poorer adjustment in most of the domains in every age period, the difference between them and the manics reached statistical significance only in the domain of highest level of functioning in adulthood.

We next compared male and female schizophrenics with respect to their PAS scores. Men showed a consistent trend for greater impaired premorbid functioning than women. However, this was only significant in the domain of childhood adaptation to school (.8 ± 1.29 *v* .2 ± .38, $P < .04$). Surprisingly, the number of years of education had positive correlations with childhood sociability/withdrawal ($r = .35, P = .022$), childhood peer relationships ($r = .44, P = .005$), adolescent sociability/withdrawal ($r = .35$, $P = .020$), and adolescent peer relationships ($r = .35, P = .020$), suggesting that subjects who were less sociable and had poorer peer relationships had more years of formal education.

Following factor analysis, we derived three syndromes from the symptoms assessed by the Scale for the Assessment of Negative Symptoms and the Brief Psychiatric Rating Scale. (Results of this aspect of our study are being reported in full elsewhere.) The three syndromes are negative (consisting of affective flattening, anhedonia, avolition, and apathy), disorganization (conceptual disorganization and attentional impairment), and positive (hallucinations, delusions, and unusual thought content). We examined the association of poor premorbid adjustment with each of the three syndromes by conducting a (Pearson's) correlational analysis. The results are shown in Table 3, and they suggest that only negative syndrome had a significant positive association with measures of poor premorbid functioning. The measures were those of poor sociability and peer relationships in adolescence and evidence of impaired interest in life in adulthood. Some correlations with positive syndrome were suggestively high but not significant, whereas the correlations with disorganization syndrome were generally low.

Table 1. Demographic Characteristics of the Groups

	Schizophrenics (n = 38)	Manics (n = 20)
Sex (% female)	40	60
Age (yr)	27.1 ± 5.16	26.1 ± 5.41
Age of onset (yr)*	24.1 ± 5.11	21.4 ± 4.44
Education (yr)	11.3 ± 4.42	12.9 ± 2.41
Length of current hospitalization, (d)	43.5 ± 20.19	36.5 ± 14.52

NOTE. Results are the mean ± SD.
*$P = .05$.

Table 2. Mean ± SD PAS Scores of the Groups

	Schizophrenics (n = 38)	Manics (n = 20)
Childhood		
Sociability/withdrawal	.9 ± 1.03	1.0 ± 1.08
Peer relationships	1.0 ± .94	1.0 ± 1.1
Scholastic performance	2.2 ± 1.09	1.9 ± 1.21
Adaptation to school	.6 ± 1.08	.8 ± 1.12
Adolescence		
Sociability/withdrawal	1.2 ± 1.27	.9 ± .91
Peer relationships	1.3 ± 1.27	1.0 ± .82
Sexual life	2.2 ± 1.59	2.4 ± 1.91
Adulthood		
Highest level of functioning*	1.7 ± 1.31	.9 ± .72
Degree of interest in life	1.9 ± 1.56	1.6 ± 1.54
Energy level	1.6 ± 1.40	1.1 ± 1.23
Functioning in previous 3 years	1.5 ± 2.08	.7 ± 1.31
Functioning in previous 6 months	2.5 ± 2.60	2.3 ± 2.47

*$P = .002$.

Table 3. Correlation of Three Syndromes With Ratings of Premorbid Functioning (PAS-score)

Variables	Syndromes		
	Negative	Disorganization	Positive
Childhood			
Sociability	.26	−.11	.22
Peer relationships	.21	−.16	.30
Scholastic performance	.01	−.04	.22
Adaptation to school	−.02	−.20	.13
Adolescence			
Sociability	.43*	−.01	.34
Peer relationships	.38*	−.11	.35
Social aspects or sexual life	.35	.12	.06
Adulthood			
Highest level of functioning	.21	.13	.26
Interest in life	.44*	.11	.34
Energy level	.37	.25	.24
Functioning in previous 3 years	−.05	−.14	−.26
Functioning in previous 1 year	.10	−.12	−.01

*$P < .01$.

DISCUSSION

This study has a number of limitations that may have affected the pattern of results obtained. Chief among these is the small sample size. This may have attenuated the power of the statistical comparisons, thereby reducing the chance of observing significant differences between manic and schizophrenic groups. Thus, even though schizophrenics showed a general trend for evidencing a poorer premorbid functioning than manics, only in one of the evaluated domains were the two groups significantly different. The range of domains examined may also have been rather limited. Even though we have used a standardized assessment procedure, the PAS, which was developed in a different sociocultural setting, may lack items relevant for rating certain functional areas pertinent to the culture in which we conducted our study.

Despite the limitations, our findings suggest that schizophrenics were more likely to evidence a poorer premorbid functioning than manics. This is in keeping with previous observations that schizophrenic patients show a significantly lower level of premorbid social adjustment than other psychiatric patients.[10] It is interesting that such a pattern of premorbid deficit is shown even by patients selected in a social environment that has been suggested to be characterized by a more favorable outcome of the illness. Our results thus provide some tentative support for the notion that impaired premorbid adjustment may be an early sign of a type of schizophrenia or a vulnerability factor for some individuals who may develop such type of the illness.[6,7]

We observed that poor premorbid social functioning was associated with a higher number of years of formal education. Even though this finding was surprising, it could indicate that schizophrenics who spent more years at school were able to do so because their social withdrawal had provided a buffer against interpersonal stresses that could have led to dropping out of school early. On the other hand, the observation that male schizophrenics had generally shown a poorer level of functioning than females is consistent with the suggestion that men tend to have an earlier onset and a more severe form of the illness.[17,18] Again, even though these trends reached statistical significance only in the domain of scholastic performance, a small sample size may have reduced the chances of more significant observations.

Our observation that negative syndrome was more likely in individuals who had shown poorer premorbid adjustment is consistent with the findings of other investigators.[19] Researchers who have examined the underlying dimensions of schizophrenia psychopathology and obtained three factors with identical composition to our own have not reported on the associations of the three syndromes with measures of premorbid functioning.[20] However, a fuller report of our validation of the three-syndrome concept, to be presented elsewhere, suggests that different factors are associated with these syndromes. Thus, we observed that whereas poor premorbid functioning characterizes the negative syndrome, disorganization syndrome was strongly associated with impaired cognitive functioning. It thus seems plausible to suggest that, even though they possibly reflect neurodevelopmental anomalies, impaired social functioning and cognitive deficits may characterize different schizophrenic populations, and that these features of the illness may indeed have different pathogenetic origins.

REFERENCES

1. Gittelman-Klein R, Klein DF. Premorbid asocial adjustment and prognosis in schizophrenia. J Psychiatr Res 1969;7:35-53.

2. Klein DF, Rosen B. Premorbid asocial adjustment and response to phenothiazine treatment among schizophrenic inpatients. Arch Gen Psychiatry 1973;29:480-485.

3. Quitkin F, Rifkin A, Klein DF. Neurologic soft signs in schizophrenia and character disorders. Arch Gen Psychiatry 1976;33:845-853.

4. Pearlson GD, Garbacz DJ, Moberg PJ, Ahn HS, DePaulo JR. Symptomatic, familial, perinatal, and social correlates of computerized axial tomography (CAT) changes in schizophrenics and bipolars. J Nerv Ment Dis 1985;173:42-50.

5. Keefe RSE, Mohs RC, Losonczy MF, Davidson M, Silverman JM, Horvath TB, et al. Premorbid sociosexual functioning and long-term outcome in schizophrenia. Am J Psychiatry 1989;146:206-211.

6. Wallace CJ. Community and interpersonal functioning in the course of schizophrenic disorders. Schizophr Bull 1984;10:233-257.

7. Nuechterlein KH, Dawson ME. A heuristic vulnerability/stress model of schizophrenic episodes. Schizophr Bull 1984;10:300-312.

8. Lewine RRJ, Watt NF, Fryer JH. A study of childhood social competence, adult premorbid competence, and psychiatric outcome in three schizophrenic subtypes. J Abnorm Psychol 1978;87:294-302.

9. Watt NF. Patterns of childhood social development in adult schizophrenics. Arch Gen Psychiatry 1978;35:160-165.

10. Foerster A, Lewis S, Owen M, Murray RM. Premorbid personality in psychosis. Br J Psychiatry 1991;158:171-176.

11. Sartorius N, Jablenki A, Korten A, Ernberg G, Anker M, Cooper JE, et al. Early manifestations and first-contact incidence of schizophrenia in different cultures. Psychol Med 1986;16:909-928.

12. Robins LN, Wing J, Wittchen HU, Helzer JE, Babor TF, Burke J, et al. The Composite International Diagnostic Interview: an epidemiologic instrument suitable for use in conjunction with different diagnostic systems and in different cultures. Arch Gen Psychiatry 1988;45:1069-1077.

13. Andreasen NC. Scale for the Assessment of Negative Symptoms (SANS). Iowa City, IA: University of Iowa Press, 1981.

14. Overall JE, Gorham DR. Brief Psychiatric Rating Scale. Psychol Rep 1962;10:799-812.

15. Spitzer RL, Endicott J, Robins E. Research Diagnostic Criteria: rationale and reliability. Arch Gen Psychiatry 1978;35:773-782.

16. Cannon-Spoor HE, Potkin SG, Wyatt RJ. Measurement of premorbid adjustment in chronic schizophrenia. Schizophr Bull 1982;8:470-484.

17. Gureje O. Gender and schizophrenia: age at onset and sociodemographic attributes. Acta Psychiatr Scand 1991;83:402-405.

18. Bardenstein KK, McGlashan TH. Gender differences in affective, schizoaffective, and schizophrenic disorders: a review. Schizophr Res 1990;3:159-172.

19. Andreasen NC, Flaum M, Swayze VW, Tyrrell G, Arndt S. Positive and negative symptoms in schizophrenia: a critical reappraisal. Arch Gen Psychiatry 1990;47:615-621.

20. Liddle PF, Morris DL. Schizophrenic syndromes and frontal lobe performance. Br J Psychiatry 1991;158:340-345.