PREMORBID ADJUSTMENT IN PATIENTS WITH FIRST EPISODE PSYCHOSIS

By

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ABSTRACT:

Association between premorbid social and intellectual impairments and the predisposition for schizophrenia has been reported since the time of Kraepelin and Bleuler. Evidence has accumulated indicating that social and intellectual impairments during adolescence are predictive of schizophrenia onset. This study evaluates premorbid functioning in 137 patients with first episode psychosis as well as 61 healthy control subjects using the Premorbid Adjustment Scale. Patients had significantly worse premorbid functioning than healthy control subjects in all domains during childhood, early adolescence as well as late adolescence. Patients continued to deteriorate over time with the worst premorbid functioning was when they were close to their psychosis onset.

KEY WORDS:

Premorbid adjustment Schizophrenia
First episode psychosis.

INTRODUCTION:

Schizophrenia is a devastating multifactorial disorder with genetic and environmental elements contributing to overall risk (McGuffin et al., 2002). It is known to be a major cause of disability (Ustun et al., 1999). The lifetime risk of schizophrenia is approximately 1% (Gottesman, 1991).

The term premorbid functionning or premorbid adjustment is defined as the individual's social, interpersonal, academic, and occupational functioning prior to the onset of psychotic symptoms. It has received much attention in the field of schizophrenia research (Addington & Addington, 2005).

Kraepelin (1919) and Bleuler (1911, tr. 1950) were the first to note the association between premorbid social and intellectual impairments and the predisposition for schizophrenia. Since that time, evidence has accumulated indicating that social and intellectual impairments during adolescence are predictive of schizo-phrenia onset (Malmberg et al., 1998; Davidson et al., 1999; Hafner, 2000; Rabinowitz et al., 2000 and Klosterkotter et al., 2001).

One of the most widely used retrospective rating scales for premorbid functioning in schizo-phrenia is the Premorbid Adjustment Scale (PAS) which assesses premorbid functioning during childhood (up to 11 years), early adolescence (12-15 years), late adolescence (16-18 years) and adulthood (19 + years). Individual items in the childhood and adolescent cate-

gories assess premorbid adjustment by asking about sociability and social withdrawal, peer relationships, scholastic performance, adaptation to school, and ability to form socio-sexual relationships. Ratings in the adult period focus on social relationships while the General Scale ratings are broader, including educational achievement, adult social relationships, and level of interest in and enjoyment of major life activities (work, family, etc). Performance is scored on a 7-point scale ranging from 0 (best functioning) to 6 (worst functioning) (Cannon-Spoor et al., 1982).

Some investigators have examined premorbid functioning as constituting two different domains or dimensions comprised of academic functioning (school functioning domain) and social functioning (socialization domain) rather than as individual variables in PAS (Van Kammen et al., 1994; Cannon et al., 1997 and Allen et al., 2005). This classification has been supported by factor analysis, and relationships have been shown between the school functioning domain and neuropsychological (NP) variables, especially intelligence, as well as between the socialization domain and symptoms, especially negative symptoms (Allen et al., 2001). The distinction between premorbid school functioning and social functioning dimensions has been shown to be more specific than total measures of premorbid functioning because combining the two domains may obscure the associations between premorbid functioning and specific outcome variables (Allen et al., 2005).

There is considerable evidence that at least some individuals who develop schizophrenia as adults demonstrate signs of neurodevelopmental deficits long before the onset of illness. This evidence has emerged from a variety of sources but includes the study of children born to mothers with schizophrenia (Fish et al., 1992) and the study of developmental milestones and school achievement in birth cohorts (Jones et al., 1994). Abnormalities of premorbid social and academic functioning can be viewed as the result of these neurodevelopmental problems. These abnormalities have been described in discordant monozygotic twins and in non-ill children of mothers with schizophrenia (Dworkin et al., 1991 and Reichenberg et al., 2000). Moreover, it has been demonstrated that there is an association between cognitive functioning in childhood and the development of illness in adulthood (Reichenberg et al., 2006 and Smith et al., 2006).

Poor premorbid adjustment has been shown to be associated with poor social functioning during adulthood (San et al., 2007), early and insidious onset of illness (Gupta et al., 1995 and Vyas et al., 2007), more negative symptoms and poor treatment response (Bailer et al., 1996), longer duration of hospitalizations (Levitt et al., 1994), poor long-term outcome (Childers & Harding, 1990), poorer medication compliance (DeQuardo et al., 1994), larger cerebral ventricles (Weinberger et al., 1980), abnormal computed tomographic (CT) and positron-emission tomographic scans (Erel et al., 1991; Van Kammen et al., 1994; Gur et al., 1995 and Cannon et al., 1997) and more severe neuropsychological impairments (Palmer et al., 1997 and Rabinowitz et al., 2002). In contrast, good premorbid functionning is predictive of better response to treatment (Stoffelmayr et al., 1983; Gupta et al., 1995; Bailer et al., 1996; Larsen et al., 2004; Addington & Addington, 2005; Haim et al., 2006 and Rabinowitz et al., 2006).

Furthermore, better premorbid history has been associated with older age at onset of illness, later age of first neuroleptic use, and later age at first hos- pitalization (Haas & Sweeney 1992). Males generally score worse than females on a range of premorbid variables (Klorman et al., 1977; Goldstein, 1988; Childers & Harding, 1990; Dworkin, 1990; Haas & Sweeney, 1992; Castle et al., 1993 and Hafner et al., 1993). Patients with the paranoid subtype of schizophrenia have better premorbid functioning compared to patients with nonparanoid types of schizophrenia (Jorgensen & Parnas, 1990 and Fenton & McGlashan, 1991).

Research that focuses on the development of psychosis, first episode psychosis, and early detection and early intervention should define different phases in the development of the illness as the premorbid period, the prodromal period and the period of untreated psychosis (Larsen et al., 1998). Understanding and distin- guishing between these periods is crucial to future research, early detection and illness management. Thus, PAS that is an appropriate measure that supports these goals and is both valid and reliable for FE samples is required (Mastrigt & Addington, 2002).

SUBJECTS AND METHODS:

The sample included a hundred thirty seven first episode patients and sixty one healthy control subjects.
Data was collected from the assess- ment of first episode patients partici- pating in a number of studies carried out at the Commonwealth Research Center (CRC), Psychiatry Department, Harvard Medical School, USA.

Study Variables:

A. Demographic characteristics:

For the purposes of this study, the following operational definitions and/or measures of the demographic variables of interest were used:
- **Age:** is the number of years living.
- **Gender:** is the sex of the participant.
- Race and/or ethnicity: is based on the participant's self-report
- **Marital Status**: is the participants' self-reported current marital status.
- Education is measured as the total number of years of education completed.
- **Socioeconomic Status (SES):** SES is measured using the Hollingshead scale (Hollingshead, 1975).
- Handedness: is measured as the participants' self-reported primary handedness.

B. Illness Characteristics
- Psychiatric Axis I Diagnosis: is defined as a DSM-III-R (American Psychiatric Association, 1987), DSM-IV (American Psychiatric Association, 1994) or DSM-IV-TR (American Psychiatric Association, 2000) diagn- oses of Schizophrenia, Schizophre- niform, or Schizoaffective Disorder. This diagnosis was determined by the use of the Structured Clinical Interview for DSM-IV (SCID) (First et al., 2002), a semi-structured clinical interview for Axis I disorders.
- Premorbid Adjustment: is measured by using the Premorbid Adjustment Scale (PAS; Cannon-Spoor et al., 1982). The PAS comprises 36 items describing levels of functioning before the onset of psychosis. These items cover sociability and withdrawal, peer relationships, scholastic performance, adaptation to school and capacity to establish socio-sexual relationships, assessed during four periods in life: childhood (up to 11 years), early adole- scence (12-15 years), late adolescence (16-18 years) and adulthood (19 years and beyond). The rating is based on interviews with the subject and/or with

family members. The scoring range of each item is 0-6, with 0 indicating the best level of functioning and 6 the worst. In this dissertation project, we will examine socialization and school functioning domains from the PAS.

The socialization domain is represented by the sum of the social-bility and withdrawal, and peer relationships items, while the school functioning domain is represented by the sum of the scholastic performance and adaptation to school items. These 2 domains and the overall score of PAS are studied in 3 phases of development: Childhood, early adolescence and late adolescence. The fourth phase (young adulthood) is excluded because most of the SSD FE participants were already psychotic by then.

RESULTS:

A. Demographic characteristics

As compared to controls (see table (1)), the FE sample was significantly older, had more males (82.6% of patients in contrast to 50.8% of healthy controls), had lower parental SES, a significantly higher family history of psychosis (11.6% of patients compared to no family history of psychosis for controls), and fewer years of completed education with controls having more education (13.1) than FE participants (12.3 years).

Table (1): Demographic characteristics in patients vs controls

		FE (n=137)	**Controls (n=61)**	***P***
Age (years): Mean (SD)		22.3 (4.4)	20.1 (3.8)	**.001**
Gender: N (%)	Males	113 (82.5%)	31 (50.8%)	
	Females	24 (17.5%)	30 (49.2%)	**<. 001**
Race: N (%)	Caucasian	74 (54%)	41 (67.2%)	
	African American	33 (24.1%)	13 (21.3%)	
	Hispanic	14 (10.2%)	0 (0%)	.102
	East/SE Asian	8 (5.8%)	3 (4.9%)	
	Other	8 (5.8%)	4 (6.6%)	
Marital status: N(%)	Single	129 (94.2%)	59 (96.7%)	
	Married	5 (3.6%)	1 (1.6%)	.721
	Divorced	3 (2.2%)	1 (1.6%)	
Handedness:N (%)	Right	96 (87.3%)	43 (95.6%)	
	Left	12 (10.9%)	2 (4.4%)	.281
	Mixed	2 (1.8%)	0 (0%)	
Number of years of education: Mean (SD)		12.3 (2.5)	13.1 (2.9)	**.047**
Parental SES: N (%)	1	23 (28%)	30 (49.2%)	
1 is highest	2	19 (23.2%)	19 (31.1%)	
	3	16 (19.5%)	10 (16.4%)	**.001**
	4	17 (20.7%)	2 (3.3 %)	
	5	7 (8.5%)	0 (0%)	
Family history of psychosis in first degree relatives: N (%)				
	Yes	11 (11.6%)	0 (0%)	**.003**
	No	84 (88.4%)	61 (100%)	

B. Premorbid adjustment (PAS):
B.1. Childhood PAS (age up to 11 years):

Table 2: Premorbid adjustment in childhood (higher scores are worse):

PAS items		N	Mean	SD	*P*
Sociability & withdrawal	Cases	87	1.15	1.37	
	Controls	60	.52	.83	**.001**
Peer relations	Cases	87	1.45	1.2	
	Controls	60	.70	.77	**<. 001**
Socialization domain	Cases	87	2.60	2.38	
	Controls	60	1.22	1.34	**<. 001**
Scholastic performance	Cases	88	1.73	1.49	
	Controls	60	.95	1.17	**.001**
Adaptation to school	Cases	87	.94	1.15	
	Controls	60	.40	.83	**.001**
School functioning domain	Cases	87	2.63	2.36	
	Controls	60	1.35	1.78	**<. 001**
Total PAS score	Cases	87	5.23	3.61	
	Controls	60	2.57	2.30	**<. 001**

Bolded values are significant. SD = Standard deviation.

As shown in table (2), patients had very significantly worse childhood premorbid functioning than healthy control subjects as indicated by higher scores (higher scores are worse) in all childhood PAS items and these differences were statistically signify-cant in all domains.

B.2. Early adolescence PAS (ages 12-15 years):

Table 3: Early adolescence PAS in FE and control groups:

PAS items		N	Mean	SD	*P*
Sociability & withdrawal	Cases	87	1.45	1.41	**<. 001**
	Controls	60	.35	.71	
Peer relations	Cases	87	1.52	1.14	
	Controls	60	.45	.72	**<. 001**
Socialization domain	Cases	87	2.97	2.26	
	Controls	60	.80	1.2	**<. 001**
Scholastic performance	Cases	87	2.45	1.7	
	Controls	60	1.02	1.2	**<. 001**
Adaptation to school	Cases	87	1.60	1.5	
	Controls	60	.35	.7	**<. 001**
School functioning domain	Cases	87	4.05	3	
	Controls	60	1.37	1.6	**<. 001**
Total PAS score	Cases	87	7.01	4.1	
	Controls	60	2.20	2.2	**<. 001**

Bolded values are significant. SD = Standard deviation.

As shown in table (3), patients had significantly worse premorbid functioning than healthy control subjects in early adolescence as indicated by higher (almost triple the level) scores in all early adolescence PAS items and these differences were statistically significant in all domains.

B.3. Late adolescence PAS (ages 16-18 years):

Table 4: Late adolescence PAS in FE and control groups:

PAS items		N	Mean	SD	*P*
Sociability & withdrawal	Cases	82	1.9	1.6	**<. 001**
	Controls	53	.26	.6	
Peer relations	Cases	82	1.8	1.3	
	Controls	53	.40	.7	**<. 001**
Socialization domain	Cases	82	3.7	2.5	
	Controls	53	.70	1.1	**<. 001**
Scholastic performance	Cases	82	3.1	1.9	
	Controls	53	1.1	1.1	**<. 001**
Adaptation to school	Cases	82	2.4	1.8	
	Controls	53	.40	.7	**<. 001**
School functioning domain	Cases	82	5.5	3.5	
	Controls	53	1.5	1.6	**<. 001**
Total PAS score	Cases	82	9.2	4.9	
	Controls	53	2.1	2.2	**<. 001**

Bolded values are significant. SD = Standard deviation.

As shown in table (4), patients had worse late adolescence premorbid functioning than healthy control subjects as indicated by higher (almost 5 times) scores in all late adolescence PAS items and these differences were statistically significant in all domains.

Figure 1: Change in premorbid functioning over time:

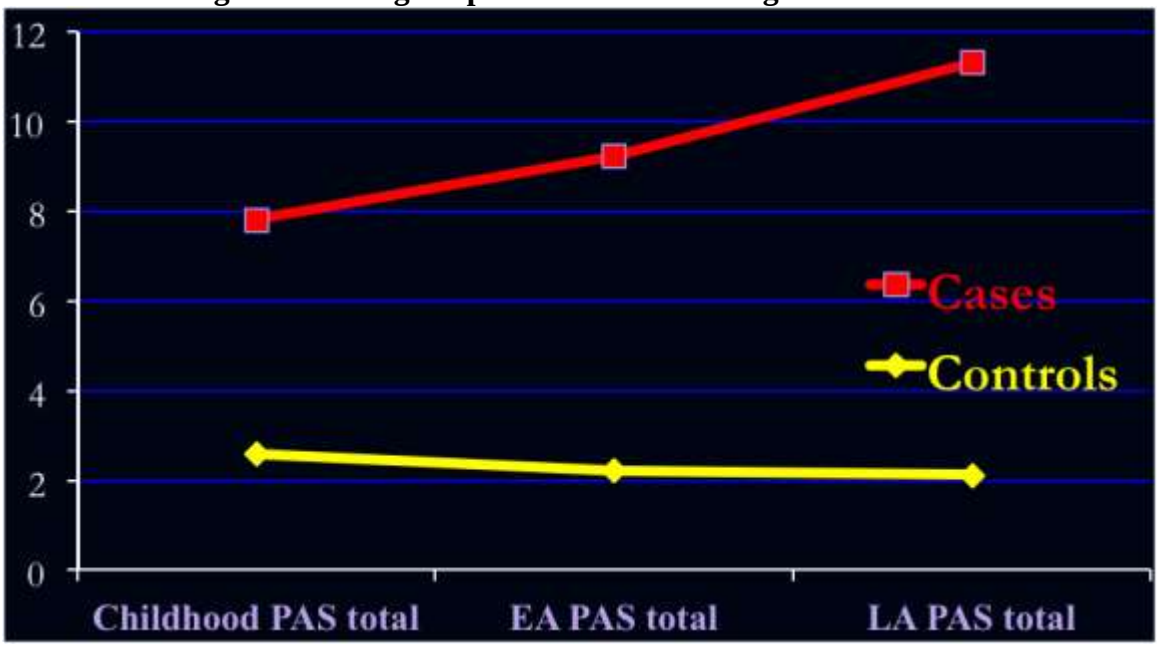

Figure (1) demonstrates that there is deterioration overtime in premorbid functioning in patients with FEP while healthy control subjects show stable good premorbid adjustment. Thus, the difference in overall premorbid functioning between patients and healthy controls grows larger as patients get closer to developing psychosis.

DISCUSSION:

There were significant differences between the FE and control groups in age where the mean age was higher in the FE compared to the control group. That difference may be due to recruitment of healthy controls only in the context of an early psychosis study that includes healthy teenage youth while the patient group was derived from multiple other studies.

Regarding gender, males represented 82.6% of our patients in contrast to 50.8% of healthy controls and that parallels the results of many other studies (Haas & Sweeney, 1992; Bailer et al., 1996 and Baldwin et al., 2005). This is unlikely to reflect the true prevalence of the sex ratio in schizophrenia (which is close to 50:50), with slightly more males (Picchioni & Murray, 2007), but is consistent with many FE studies (e.g., Larsen et al., 2004). This might be related to who becomes hospitalized or patterns of volunteerism among schizophrenia patients.

Overall, the results paint a picture of the devastating effects of psychosis on the lives of these young participants. We found a statistically significant difference in parental SES where patients had significantly lower SES than controls and that is consistent with many other studies (Castro-Fornieles et al., 2007 and Jones et al., 2011). This is expected if schizophrenia runs in families and may attenuate occupational and educational achievement.

As expected, there was a statistically significant difference between patients and healthy control subjects regarding family history of psychosis in first degree relatives as we found a positive family history in

11.6% of patients but no family history of psychosis in the healthy control subjects. This finding is smaller than what was reported by Faridi et al. (2009) as they found 19.1% of patients had a positive family history of psychosis in first degree relatives of FE patients. Family history of psychosis was an exclusion criterion for the healthy control subjects, so the rate of zero is entirely expected.

Results of this study generally parallel other studies that reported an association between premorbid social and intellectual functioning and predisposition for schizophrenia (Kraepelin, 1919; Allen et al., 2005). We found patterns of deterioration in individuals with SSDs compared to controls from childhood to late adolescence evident in all PAS variables (grouped into socialization and school functioning domains). There was a statistically significant difference between FE patients and healthy control subjects on all childhood PAS variables.

We found deterioration in the socialization and school functioning domains when patients began adolescence. Patients did worse in early adolescent premorbid functioning than healthy control subjects on all early adolescent PAS items, and these differences were statistically significant in all domains. We also found that the deterioration in premorbid functioning continued into late adolescence with scores of patients being about 5 times as high (i.e., much more abnormal) as control subjects. In contrast, control subjects showed stable good premorbid adjustment over time, indicating that social and intellectual impairments during adolescence are predictive of and associated with schizophrenia. This is consistent with what was found in other studies (Malmberg et al., 1998; Davidson et al., 1999; Hafner, 2000; Rabinowitz et al., 2000 and Klosterkotter et al., 2001). This may be explained by and related to the view that schizophrenia patients demonstrate signs of neurodevelopmental deficits long before the onset of illness (Fish et al., 1992) and the abnormalities in premorbid social and academic functioning result from these neuro-developmental problems.

REFERENCES:

1.Addington J. & Addington D. (2005). Patterns of premorbid functioning in first episode psychosis: relationship to 2-year outcome. *Acta Psychiatrica Scandinavica;*112:40–46.

2.Addington J. & Addington D. (2005). Patterns of premorbid functioning in first episode psychosis: relationship to 2-year outcome. *Acta Psychiatrica Scandinavica;*112:40–46.

3.Allen D. N., Frantom L. V., Strauss G. P. & van Kammen D. P. (2005). Differential patterns of premorbid academic and social deterioration in patients with schizophrenia. *Schizophrenia Research;* 75: 389–397.

4.Allen D. N., Frantom L. V., Strauss G. P. & van Kammen D. P. (2005). Differential patterns of premorbid academic and social deterioration in patients with schizophrenia. *Schizophrenia Research;* 75: 389–397.

5.Allen D. N., Kelley M. E., Miyatake R. K., Gurklis J. A. & van Kammen D. P. (2001). Confirmation of a two-factor model of premorbid adjustment in males with schizophrenia. *Schizophrenia Bulletin;* 27: 39–46.

6. American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders, DSM-III-R (3rd, Revised ed.).* Washington, DC: American Psychiatric Association.

7. American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders,*

DSM-IV (4th ed.). Washington, DC: American Psychiatric Association.

8. American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, DSM-IV*. Washington, DC: American Psychiatric Publishing, Inc.

9. Bailer J., Brauer W. & Rey E. R. (1996). Premorbid Adjustment as a Predictor of Outcome in Schizophrenia: Results of a Prospective Study. *Acta Psychiatrica Scandinavica;* 93: 368–377.

10. Baldwin P., Browne D., Scully P. J., Quinn J. F., Morgan M. G., Kinsella A., Owens J. M., Russell V., O'Callaghan E. & Waddington J. L. (2005). Epidemiology of first-episode psychosis: Illustrating the challenges across diagnostic boundaries through the Cavan-Monaghan study at 8 years. *Schizophrenia Bulletin;* 31: 624-638.

11. Bleuler E. (1911). *Dementia Praecox or the Group of Schizophrenias.* Translated by Zinkin J. New York: International Universities Press.

12. Cannon M., Jones P., Gilvarry C., Rifkin L., McKenzie K., Foerster A. & Murray R.M. (1997). Premorbid social functioning in schizophrenia and bipolar disorder: similarities and differences. *American Journal of Psychiatry;* 154: 1544–1550.

13. Cannon M., Jones P., Gilvarry C., Rifkin L., McKenzie K., Foerster A. & Murray R.M. (1997). Premorbid social functioning in schizophrenia and bipolar disorder: similarities and differences. *American Journal of Psychiatry;* 154: 1544–1550.

14. Cannon-Spoor H. E., Potkin S. G. & Wyatt R. J. (1982). Measurement of premorbid adjustment in chronic schizophrenia. *Schizophrenia Bulletin;* 8: 470-484.

15. Castle D. J., Wessely S. & Murray R. M. (1993). Sex and schizophrenia: Effects of diagnostic stringency, and associations with premorbid variables. *British Journal of Psychiatry;* 162: 658-664.

16. Castro-Fornieles J., Parellada M., Gonzalez-Pinto A., Moreno D., Graell M., Baeza I., Otero S., Soutullo C. A., Crespo-Facorro B., Ruiz-Sancho A., Desco M., Rojas-Corrales O., Patiño A., Carrasco-Marin E. & Arango C. (2007). The child and adolescent first-episode psychosis study (CAFEPS): Design and baseline results. *Schizophrenia Research;* 91: 226-237.

17. Childers S. E. & Harding C. M. (1990). Gender, premorbid social functioning, and long-term outcome in *DSM-III* schizophrenia. *Schizophrenia Bulletin;* 16: 309-318.

18. Davidson M., Reichenberg A., Rabinowitz J., Weiser M., Kaplan Z. & Mark M. (1999). Behavioral and intellectual markers for schizophrenia in apparently healthy male adolescents. *American Journal of Psychiatry;* 156: 1328–1335.

19. Davidson M., Reichenberg A., Rabinowitz J., Weiser M., Kaplan Z. & Mark M. (1999). Behavioral and intellectual markers for schizophrenia in apparently healthy male adolescents. *American Journal of Psychiatry;* 156: 1328–1335.

20. DeQuardo J. R., Tandon R., Goldman R., Meador-Woodruff J. H., McGrath-Giroux M., Brunberg J. A. & Kim L. (1994). Ventricular enlargement, neuropsychological status, and premorbid function in schizophrenia. *Biological Psychiatry;* 35: 517–524.

21. Dworkin R. H. (1990). Patterns of sex differences in negative symptoms and social functioning consistent with separate dimensions of schizophrenic psychopathology. *American Journal of Psychiatry;* 147: 347-349.

22. Dworkin R. H., Bernstein G., Kaplansky L. M., Lipsitz J. D., Rinaldi A., Salter S. L., Cornblatt B. A. & Erlenmeyer-Kimling L. (1991). Social competence and positive and negative

symptoms: a longitudinal study of children and adolescents at risk for schizophrenia and affective disorders. *American Journal of Psychiatry;* 148: 1182-1188.

23. Erel O., Cannon T., Hollister J., Mednick S. A. & Parnas J. (1991). Ventricular enlargement and premorbid deficits in school occupational attainment in a high-risk sample. *Schizophrenia Research;* 4: 49-52.

24. Faridi K., Pawliuk N., King S., Joober R. & Malla A. K. (2009). Prevalence of psychotic and non-psychotic disorders in relatives of patients with a first episode psychosis. *Schizophrenia Research;* 114: 57-63.

25. Fenton W. S. & McGlashan, T. H. (1991). Natural history of schizophrenic subtypes: II. Positive and negative symptoms and long-term course. *Archives of General Psychiatry;* 48: 978-986.

26. First M. B., Spitzer R. L., Gibbon M. & Williams J. B. W. (2002). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition.* New York: Biometrics Research, New York State Psychiatric Institute.

27. Fish B., Marcus J., Hans S. L., Auerbach J. G. & Perdue S. (1992). Infants at Risk for Schizophrenia: Sequelae of a Genetic Neurointegrative Defect. *Archives of General Psychiatry;* 49: 221–235.

28. Goldstein M. J. (1988). Gender differences in the course of schizophrenia. *American Journal of Psychiatry;* 145: 684-689.

29. Gottesman II. (1991). *Schizophrenia Genesis: The Origins of Madness.* New York: Freeman.

30. Gupta S., Rajaprabhakaran G. R., Arndt S., Flaum M. & Andreasen N. C. (1995). Premorbid adjustment as a predictor of phenomenological and neurobiological indices in schizophrenia. *Schizophrenia Research;* 16: 189-197.

31. Gur R. E., Mozley D., Resnick S. M., Harper M. L., Shtasel D. L., Gallacher F., Arnold S. E., Karp J. S., Alvai A. & Reivich M. (1995). Resting cerebral glucose metabolism in first-episode and previously treated patients with schizophrenia relates to clinical features. *Archives of General Psychiatry;* 52: 657-667.

32. Haas G. L. & Sweeney J. A. (1992). Premorbid and onset features of first-episode schizophrenia. *Schizophrenia Bulletin;* 18: 373-386.

33. Hafner H. (2000). Onset and early course as determinants of the further course of schizophrenia. *Acta Psychiatrica Scandinavica;* 407:44-48.

34. Hafner H. (2000). Onset and early course as determinants of the further course of schizophrenia. *Acta Psychiatrica Scandinavica;* 407:44-48.

35. Hafner H., Maurer K., Loffler W. & Riecher-Rossler A. (1993). The influence of age and sex on the onset and early course of schizophrenia. *British Journal of Psychiatry;*162:80-86.

36. Haim R., Rabinowitz J. & Bromet E. (2006). The relationship of premorbid functioning to illness course in schizophrenia and psychotic mood disorders during two years following first hospitalization. *Journal of Nervous and Mental Disease;* 194: 791-795.

37. Hollingshead A. B. (1975). Your factor index of social status. *Unpublished paper;*http://www.yale.edu/sociology/faculty/docs/hollingshead_socStat4factor.pdf.

38. Jones B. J., Gallagher B. J., Moss D. M. & McFalls J. A. (2011). Obstetrical complications, social class and type of schizophrenia. *Clinical Schizophrenia and Related Psychoses;* 5: 33-39.

39. Jones P. B., Rodgers B., Murray R. & Marmot M. (1994). Child Development Risk Factors for Adult Schizophrenia in the British 1946 Birth Cohort. *Lancet;* 344: 1398-1402.

40. Jorgensen A. & Pamas J. (1990). The Copenhagen High-Risk Study: Premorbid and clinical dimensions of maternal schizophrenia. *Journal of Nervous and Mental Disease;* 178: 370-376.

41. Klorman R., Strauss J. S. & Kokes R. F. (1977). Premorbid adjustment in schizophrenia: III. The relationship of demographic and diagnostic factors to measures of premorbid adjustment in schizophrenia. *Schizophrenia Bulletin;* 3: 214-225.

42. Klosterkotter J., Hellmich M., Steinmeyer E. M. & Schultze-Lutter F. (2001). Diagnosing schizophrenia in the initial prodromal phase. *Archives of General Psychiatry;* 58: 158-164.

43. Klosterkotter J., Hellmich M., Steinmeyer E. M. & Schultze-Lutter F. (2001). Diagnosing schizophrenia in the initial prodromal phase. *Archives of General Psychiatry;* 58: 158-164.

44. Kraepelin E. (1919). *Dementia Praecox and Paraphrenia.* Translated by Barclay R. M., edited by Robertson G. M. Edinburg, UK: Livingstone.

45. Larsen T. K., Friis S., Haahr U., Johannessen J. O., Melle I., Opjordsmoen S., Rund B. R., Simonsen E., Vaglum P. & McGlashan T. H. (2004). Premorbid adjustment in first-episode non-affective psychosis: Distinct patterns of pre-onset course. *British Journal of Psychiatry;* 185: 108-115.

46. Larsen T. K., Johannessen J. O. & Opjordsmoen S. (1998). First-episode schizophrenia with long duration of untreated psychosis: Pathways to care. *British Journal of Psychiatry;* 172:45-52.

47. Levitt J. J., Shenton M. E., McCarley R. W., Faux S. F. & Ludwig A. S. (1994). Premorbid Adjustment in Schizophrenia: Implications for Psychosocial and Ventricular Pathology. *Schizophrenia Research;* 12: 159-168.

48. Malmberg A., Lewis G., David A. & Allenbeck P. (1998). Premorbid adjustment and personality in schizophrenia. *British Journal of Psychiatry;* 172: 308-312.

49. Malmberg A., Lewis G., David A. & Allenbeck P. (1998). Premorbid adjustment and personality in schizophrenia. *British Journal of Psychiatry;* 172: 308-312.

50. Mastrigt S. & Addington J. (2002). Assessment of premorbid function in first-episode schizophrenia: modifications to the Premorbid Adjustment Scale. *Journal of Psychiatry and Clinical Neuroscience;* 27: 92-101.

51. McGuffin P., Owen M. J. & Gottesman II. (2002). *Psychiatric Genetics and Genomics.* Oxford, UK: Oxford University Press.

52. Palmer B. W., Heaton R. K., Paulsen J. S., Kuck J., Braff D., Harris M. J., Zisook S. & Jeste D. V. (1997). Is it possible to be schizophrenic yet neuropsychologically normal? *Neuropsychology;* 11: 437-446.

53. Picchioni M. M. & Murray R. M. (2007). Schizophrenia. *British Medical Journal;* 335: 91-95.

54. Rabinowitz J., De Smedt G., Harvey P. D. & Davidson M. (2002). Relationship between premorbid functioning and symptom severity as assessed at first episode of psychosis. *American Journal of Psychiatry;* 159: 2021-2026.

55. Rabinowitz J., Harvey P. D., Eerdekens M. & Davidson M. (2006). Premorbid functioning and treatment response in recent-onset schizophrenia. *British Journal of Psychiatry;*189:31–35.

56. Rabinowitz J., Reichenberg A., Weiser M., Mark M., Kaplan Z. & Davidson M. (2000). Cognitive and personality functioning during the decade prior to first hospitalization and early course of psychotic illness. *British Journal of Psychiatry;* 177: 26–32.

57. Rabinowitz J., Reichenberg A., Weiser M., Mark M., Kaplan Z. & Davidson M. (2000). Cognitive and personality functioning during the decade prior to first hospitalization and

early course of psychotic illness. *British Journal of Psychiatry;* 177: 26–32.

58. Reichenberg A., Rabinowitz J., Weiser M., Mark M., Kaplan Z. & Davidson M. (2000). Premorbid Functioning in a National Population of Male Twins Discordant for Psychoses. *American Journal of Psychiatry;* 157: 1514-1516.

59. Reichenberg A., Weiser M., Caspi A., Knobler H. Y., Lubin G., Harvey P. D., Rabinowitz J. & Davidson M. (2006). Premorbid intellectual functioning and risk of schizophrenia and spectrum disorders. *Journal of Clinical and Experimental Neuropsychology;* 28: 193-207.

60. San L., Ciudad A., Alvarez E., Bobes J. & Gilaberte I (2007). Symptomatic Remission and Social/ Vocational Functioning in Outpatients With Schizophrenia: Prevalence and Associations in a Cross-Sectional Study. *European Psychiatry;* 22: 490-498.

61. Smith C. W., Park S. & Cornblatt B. (2006). Spatial working memory deficits in adolescents at clinical high risk for schizophrenia. *Schizophrenia Research;* 81: 211-215.

62. Stoffelmayr B. E., Dillavou D. & Hunter J. E. (1983). Premorbid functioning and outcome in schizophrenia: A cumulative analysis. *Journal of Consultation and Clinical Psychology;* 51: 338-352.

63. Ustun T. B., Rehm J., Chatterji S., Trotter R., Room R., Bickenbach J., & the WHO/NIH Joint Project CAR Study Group (1999). Multiple-infonnant ranking of the disabling effects of different health conditions in 14 countries. *The Lancet;* 354: 111-115.

64. Van Kammen D., Kelly M., Gilbertson M., Gurklis J. & O'Connor D. (1994). CSF Dopamine β -hydroxylade in schizophrenia: associations with premorbid functioning and brain computerized tomography scan measures. *American Journal of Psychiatry;* 151: 372-378.

65. Van Kammen D., Kelly M., Gilbertson M., Gurklis J. & O'Connor D. (1994). CSF Dopamine β -hydroxylade in schizophrenia: associations with premorbid functioning and brain computerized tomography scan measures. *American Journal of Psychiatry;* 151: 372-378.

66. Vyas N. S., Hadjulis M., Vourdas A., Byrne P. & Frangou S. (2007). The Maudsley Early Onset Schizophrenia Study: Predictors of Psychosocial Outcome at 4-year Follow-up. *European Child and Adolescence Psychiatry;* 16: 465-470.

67. Weinberger D. R., Cannon-Spoor E., Potkin S. G. & Wyatt R. J. (1980). Poor Premorbid Adjustment and CT Scan Abnormalities in Chronic Schizophrenia. *American Journal of Psychiatry;* 137: 1410-1413.

الملخص العربى

يعتبر مرض الفصام من اشد الامراض النفسية خطورة, ويصيب المرض حوالي ١٪ من المجتمع بنسب متقاربة في النساء والرجال و تتداخل العوامل الوراثية والبيئية في اسباب الاصابة بالمرض.
ولقد أثبتت الدراسات التي اجريت بأثر رجعي علي عينات من مرضى الفصام والأمراض الذهانية ذات العلاقة وجود اضطرابات في قدرة المرضى علي التكيف قبل حدوث المرض.

طرق وأهداف البحث:

لقد تم اجراء هذه الدراسة في مركز كومنولث للأبحاث بقسم الأمراض النفسية بكلية الطب- جامعة هارفارد بالولايات المتحدة الأمريكية.
واشتملت الدراسة على عينة مكونة من ١٣٧ من المرضي المصابين بالفصام والأمراض الذهانية الأخرى ذات العلاقة خلال المرحلة الأولى من المرض. كما اشتمل البحث على ٦١ شخصا من الأصحاء كمجموعة ضابطة للمقارنة. وقد تم جمع البيانات من تقييم مرضي الحلقة الأولي من الذهان والمشاركين في عدد من الدراسات التى أجريت في مركزكومنولث للأبحاث.

وكانت نتائج الدراسة كالاتى:

وصف العينة ككل:

اشتملت عينة الدراسة على ١٣٧ مريضا و ٦١ من الأصحاء وتبين أن متوسط أعمارهم ٢١.٦ سنوات وكان أغلبهم من الذكور القوقازيين الذين لم يسبق لهم الزواج.

وصف مجموعة المرضى:

لقد وجدنا أن متوسط عمر المرضى هو ٢٢.٣ سنة وكان أغلبهم من الذكور (٨٢.٥٪) القوقازيين (٥٤٪) والذين لم يسبق لهم الزواج (٩٤٪).

المقارنة بين مجموعة المرضى و المجموعة الضابطة:

اذا نظرنا الى الخصائص الديموجرافية, فقد كانت مجموعة المرضي مقارنة بالمجموعة الضابطة أكبر سنا و تحتوي على عدد أكثر من الذكور (٨٢٪ من المرضى مقابل ٥٠.٨٪ من المجموعة الضابطة) وأقل في المرتبة الاجتماعية الاقتصادية ومتوسط عدد سنوات التعليم مع وجود تاريخ عائلي للذهان أعلى بكثير من المجموعة الضابطة.
اختلفت مجموعة المرضى أيضا عن المجموعة الضابطة في التكيف قبل حدوث المرض في جميع بنود اختبار تقييم الأداء والتكيف قبل المرض في جميع المراحل والتى تشتمل على الطفولة والمراهقة المبكرة والمراهقة المتأخرة. وقد كانت هذه الاختلافات جميعها ذات دلالة احصائية. كما ارتفع الفارق بين المرضى والمجموعة الضابطة كلما اقترب المرضى من بداية الذهان.

الخلاصة: -يتميز المرضى الذين يعانون من الحلقة الأولى من الذهان بوجود ضعف في التكيف قبل حدوث المرض والذي يبدأ من الطفولة و يستمر في التدهور الى أسوأ مستوى له عندما يكونون على مقربة من بداية الذهان.