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Twelve-month follow-up of family communication and psychopathology in children and adolescents with a first psychotic episode (CAFEPS study)

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ABSTRACT

We analyzed the potential influence of family relationships and history of psychiatric disorders on the presentation and course of early psychotic disorders. We recruited 110 subjects aged 9–17 years with a first psychotic episode and 98 matched healthy controls, and followed them for 1 year. Data were collected through clinical interviews and the Parent–Adolescent Communication Inventory. A family history of psychosis-related disorders was more common in patients' families, with a five-fold higher risk for psychoses related disorders than families of healthy controls. If we consider psychoses related disorder in first-degree relatives, the risk is even higher, rising to 15-fold. The families of patients with a first psychotic episode score themselves worse in communication than the families of healthy controls. More problems in communication at baseline correlated with a higher degree of psychopathology and a lower clinical improvement after 12 months of follow-up.

1. Introduction

Most studies on the etiology of schizophrenia have focused solely on genetic or environmental variables, and recent data support the interaction between genetics and environment in the pathogenesis of mental disorders (Boks et al., 2007; Jirtle and Skinner, 2007; Collip et al., 2008).

It is widely accepted that the existence of a family psychiatric history (FPH) increases the risk of psychotic disorders in children and adolescents (Alaghband-Rad et al., 1998; Geller et al., 2002; Cannon et al., 2003; Chang et al., 2003; Amminger et al., 2006; Bäuml et al., 2006). Parental psychiatric disorders not only predict the development of a psychotic disorder, but are also associated with poorer prognosis (Kendler et al., 1993; Guerra et al., 2002; Hanssen et al., 2006). Rigorous research has shown that the parents of patients with childhood-onset schizophrenia had a significantly higher morbid risk of schizophrenia spectrum disorders than the parents of patients with adult-onset schizophrenia (Nicolson et al., 2003), and both had a greater risk of schizophrenia spectrum disorders than the parents of healthy children (Asarnow et al., 2001; Nicolson et al., 2001; Nicolson et al., 2003). There seems to be a relationship between a family history of psychosis-related disorders (FHPRD) and an enduring biological vulnerability to this disease (Cornblatt et al., 2003), in which factors such as age or sex may also be involved, although the role of these factors remains unclear (Sham et al., 1994a,b; Thomas et al., 2001).

Furthermore, neurodevelopmental models of psychosis have shown that family environment is one of the psychosocial factors that can affect the onset and prognosis of psychotic disorders (Chang et al., 2003). Some authors focus on the communication patterns of families with an affected child, and show that familial factors predict symptom change and social outcomes for adolescents identified as being at imminent risk for the onset of psychosis (O'Brien et al., 2006). Sibling studies have shown that the course of schizophrenic disorders is moderately influenced by familial factors (Kendler et al., 1997), and that higher parental emotional over-involvement is an important factor in the family environment and is probably linked to affective disturbances in the patient (Bentsen et al., 1996). Other studies have analyzed the communication patterns of families with one affected parent, and describe such families as less cohesive and organized, with higher conflict and lower independence (Chang et al., 2003),

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Table 1
Patients' ($N=97$) diagnoses at 12 months of follow-up.

Diagnoses	*N*	%
Brief psychotic disorder	5	5.15
Schizophrenia, paranoid type	20	20.63
Schizophrenia, undifferentiated type	9	9.28
Schizophrenia, disorganized type	1	1.03
Schizophrenia, NOS	3	3.09
Psychotic disorder NOS otherwise specified F29	24	24.74
Schizoaffective disorder	6	6.19
Schizophreniform disorder	9	9.28
Bipolar disorder, manic episode	4	4.12
Bipolar disorder, depressive episode	2	2.06
Depressive disorder with psychotic symptoms	4	4.12
Bipolar disorder NOS	8	8.25
Bipolar disorder type II	2	2.06
Missing cases	13	(11.8 % of original sample)
Total	110	

NOS: not otherwise specified.

suggesting that members of such families may have difficulties communicating effectively with one another (Romero et al., 2005). It has also been suggested that poor family interaction is correlated with poor cognitive, social, and emotional functioning (Greenwald, 1989). A positive family environment consistently predicts improvement in symptoms and social functioning in adolescents at risk for a first psychosis episode (O'Brien et al., 2006). These findings might indicate that family interaction is a broad predictor of adequacy of functioning (Greenwald, 1989). Other sociodemographic variables related to family life have been pointed out as potential confounding factors influencing the development of psychosis. Low socioeconomic status (SES) (Werner et al., 2007) and migration (Patino et al., 2005; Kopelowicz et al., 2006a,b) are the most widely studied.

We put forward the following hypotheses: First, FHPRD, and, more specifically, FHPRD in first-degree relatives, will be more frequent in patients than in controls. Second, family communication patterns will be more dysfunctional in patients' families than in controls' families. Third, in patients' families, poor communication skills will be associated with both more psychopathology and worse functioning in their child. Finally, family communication will have a predictive value in diagnosis and degree of functioning after 12 months of follow-up.

2. Methods

2.1. Subjects

The sample included 110 children and adolescents aged 9–17 years with first-episode psychosis (FEP) and 98 healthy control subjects. The inclusion criteria for patients were age between 7 and 17 years at their first evaluation and presence of positive psychotic symptoms (within a psychotic episode) such as delusions or hallucinations of less than 6 months' duration since the onset of symptoms. The sample was recruited between March 2003 and November 2005. Controls were recruited from the same geographical area and matched for gender and age (Castro-Fornieles et al., 2007). The exclusion criteria were presence of a concomitant Axis I disorder at the time of evaluation that might account for the psychotic symptoms (such as substance abuse, autistic spectrum disorders, posttraumatic stress disorder, or acute stress disorder), mental retardation (only if, besides an intelligence quotient (IQ) below 70, cognitive functioning was clinically impaired prior to onset of the disorder), pervasive developmental disorder, neurological disorders, history of head trauma with loss of consciousness, and pregnancy. Patients ($N=2$) and controls ($N=3$) living under foster care were excluded. Occasional substance abuse was not an exclusion criterion if positive symptoms persisted for more than two weeks after a negative urine drug test.

Patients were recruited from child and adolescent psychiatry units at six university hospitals with experience in accurate diagnosis, evaluation, and treatment. The six hospitals were located in five different Spanish cities (Madrid, Barcelona, Vitoria, Santander, and Pamplona) covering a population of approximately 8 million people. All patients were seen for the first time at these facilities during the recruitment period, and those who met the inclusion criteria were invited to participate in the study (Castro-Fornieles et al., 2007). Family psychiatric history was assessed through clinical interviews by senior psychiatrists or clinical psychologists. Of the total sample, 94 patients, 95 controls, and their parents — usually the mother — completed the Parent–Adolescent Communication Inventory (PACI). At 12 months of follow-up, 97 patients remained in the study, and 89 of these had an available PACI result.

2.2. Instruments and data

FPH and FHPRD were elicited at baseline by an experienced clinician using a comprehensive clinical interview with parents to establish any kind of mental health problem affecting up to third-degree relatives. Information on first-degree relatives was considered more reliable. When positive information was elicited, the clinician recorded the diagnosis, medication, mental health services provided, and medical history (when available). FPH was considered to exist when one or several members presented a Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) diagnosis of any kind. FHPRD was considered positive when one or several members of the family presented either a DSM-IV diagnosis of schizophrenia, bipolar disorder, depressive disorder with psychotic symptoms, schizophrenic disorder, personality disorder (paranoid, schizoid, and schizotypical), or psychotic disorder related to drug use.

The *PACI* is a 20-item instrument that has been standardized on large samples. It has proven to have adequate internal consistency, test–retest reliability, and two statistically independent dimensions: *open communication* and *problem communication* (Barnes and Olson, 1992). It was designed to measure both content and process issues in communication between adolescents and their parents (Mestre et al., 2006). *Open communication* is characterized by an emphasis on freedom and free-flowing exchange of information, both factual and emotional, as well as lack of constraint. *Problem communication* is characterized by hesitancy to share and negative styles of interaction. Both scores are presented positively (the higher the score, the more open the communication or the fewer problems in communication) and the overall score is the global scale (the higher the score, the better the communication in the family). There are three versions of the PACI: patients and controls completed two of the versions, the first rating communication with their mothers (94 patients and 95 controls) and the second rating communication with their fathers (85 patients and 90 controls); parents—usually the mother—completed the parents version, rating their perception of communication with their children at baseline. The patient's collaboration was elicited at baseline, when they were clinically stable. At 12 months of follow-up, 89 of the 97 patients had an available PACI result.

The *Kiddie Schedule for Affective Disorders and Schizophrenia, Present and Lifetime version (K-SADS-PL)* (Kaufman et al., 1997) is a semi-structured diagnostic interview designed to assess current and past psychopathology in children and adolescents according to DSM-IV criteria. We used the validated Spanish translation of the K-SADS-PL in its most recent version (Ulloa et al., 2006) at baseline. Diagnoses were reviewed again at 12 months by the clinician according to DSM-IV criteria. Table 1 shows the DSM-IV diagnosis of patients after 12 months of follow-up. The K-SADS-PL was also used in controls only at baseline to rule out mental disorders.

Table 2
Parent–Adolescent Communication Scale: differences between patients ($N=94$) and controls ($N=95$) after controlling for SES status (ANCOVA).

Patients $N=94$		Open communication		Problem communication		Global scale	
Controls $N=95$		Patient	Control	Patient	Control	Patient	Control
Adolescent about mother	Mean	38.60	41.33	33.68	38.14	72.28	79.47
	S.D. mean	9.82	6.54	7.24	6.63	15.19	12.05
		($t=2.27$), $df=187$		**($t=4.45$), $df=187$**		**($t=3.63$), $df=187$**	
		$P=0.025$		**$P<0.001$**		**$P<0.001$**	
Adolescent about father	Mean	34.63	36.68	32.94	36.94	67.57	73.62
	S.D. mean	9.22	8.06	6.41	6.34	13.17	12.82
		($t=1.56$), **$df=175$**		**($t=4.14$), $df=175$**		**($t=3.07$), $df=175$**	
		$P=0.121$		**$P<0.001$**		**$P=0.002$**	
Parents about adolescent	Mean	34.34	40.76	34.04	41.43	68.38	82.19
	SE mean	7.96	5.76	8.04	5.35	14.05	9.66
		($t=6.31$), $df=187$		**($t=7.0$), $df=187$**		**($t=7.87$), $df=187$**	
		$P<0.001$		**$P<0.001$**		**$P<0.001$**	

Abbreviations: ANCOVA, analysis of covariance; SES, socioeconomic status.