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Psychiatry Research 125 (2004) 193–203
PSYCHIATRY RESEARCH
www.elsevier.com/locate/psychres

Early presence of thought disorder as a prospective sign of mental disorder

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Received 3 April 2003; accepted 1 January 2004

Abstract

The purpose of this study was to assess whether premorbid signs, such as thought disorder, could predict the subsequent manifestation of psychiatric disorders. A group of 75 adoptees at high genetic risk for schizophrenia and 96 low-risk adoptees without any psychiatric disorder at the initial assessment were assessed blindly with the Thought Disorder Index (TDI). Their psychiatric status was re-assessed according to DSM-III-R criteria in a re-interview 11 years later and based on available registers 16 years later. High scores on several TDI variables at the initial assessment predicted a psychiatric disorder of all adoptees at follow-up. Prediction was statistically unsuccessful among the high-risk adoptees because of the small number of cases, but high scores at the 0.50 severity level did predict mental disorders among the low-risk adoptees.

Keywords: Predicting mental disorder; Thought Disorder Index; Finnish Adoptive Family Study; Offspring of schizophrenic mothers; Genetics

1. Introduction

Thought disorder is defined to consist of intrinsic illogicalities, loose associations or derailments, circumstantiality or loss of goal, and irrelevant or tangential responses (Goldberg et al., 1998). Recent studies have explored the different cognitive mechanisms that might produce thought disorder. Impairments in working memory, discourse planning and attention have been examined (Hoffman et al., 1986; Liddle, 1987; Manschreck et al., 1991; McGrath, 1991; Nestor et al., 1998). Goldberg et al. (1998) also suggested that abnormalities in semantic processing are associated with thought disorder.

Formal thought disorder has been considered one of the primary features of schizophrenia (Bleuler, 1911/1950; Kraepelin, 1919). Previous research has shown that the thinking and speech of schizophrenic patients are confused and disorganized, and contain many idiosyncratic and pecu-

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doi:10.1016/j.psychres.2004.01.002

liar phrases (Johnston and Holzman, 1979; Holzman et al., 1986; Solovay et al., 1987). Studies of thought disorder in childhood schizophrenia have also demonstrated that the thinking of schizophrenic and schizotypal children is more impaired than that of normal children (Caplan et al., 1989, 1990; Caplan, 1994; Tompson et al., 1997; Caplan et al., 2000). In addition, research has indicated that thought disorder might be inherited, as the level of thought disorder is significantly elevated in the relatives of persons with schizophrenia (Johnston and Holzman, 1979; Shenton et al., 1989; Hain et al., 1995). The thought processes of the first-degree relatives of schizophrenic and schizoaffective manic patients have also been shown to be more deviant than that of normal controls (Shenton et al., 1989; Kinney et al., 1997).

However, thought disorder is not a unique characteristic of schizophrenia. Several studies have shown thought disorders to be present in other psychiatric disorders as well. Patients with affective, schizoaffective, or borderline personality and schizoid personality disorder have been found to have thought disorders (Harrow and Quinlan, 1985; Andreasen and Grove, 1986; Edell, 1987; Shenton et al., 1989; Gandolfo et al., 1991; Wolff, 1991; Wolff et al., 1991; Dunayevich and Keck, 2000; Wilcox et al., 2000; Rubin and Arceneaux, 2001). Thought disorders have also been seen in autistic and bulimic children (Dykens et al., 1991; Smith et al., 1991). Children with attention-deficit hyperactivity disorder (ADHD) were found to have thought disorder as well (Caplan et al., 2001). Although thought disorder is not a specific feature of schizophrenia, studies have shown that there are qualitative differences, depending upon the severity of psychopathology (Holzman et al., 1986; Cuesta and Peralta, 1993). Thought disorder seems to be persistent, especially among schizophrenic patients (Earle-Boyer et al., 1986; Marengo and Harrow, 1997).

The most common way to assess thought disorder has been the analysis of responses to Rorschach cards, and several test measures of thought disorder have been developed (Exner, 1993). One of the most widely used tests is the Thought Disorder Index (TDI) (Johnston and Holzman, 1979; Holzman et al., 1986; Solovay et al., 1986), which was developed to tag, classify and measure disturbances in thinking. By using the TDI instrument, it is possible to assess both the qualitative and the quantitative aspects of cognitive slippage. TDI evaluates thought disorders ranging from very mild to very severe. The revised version of the TDI includes 24 categories weighted along a continuum of severity (0.25, 0.50, 0.75 and 1.0). The 0.25 level represents very mild forms of thought disorder and the 1.0 level the most severe forms (Table 1).

Recent studies suggest that it might be possible to prevent or at least influence the prognosis of schizophrenia by early detection (Falloon et al., 1996; McGlashan and Johannessen, 1996; Vaglum, 1996; McGorry et al., 2000; Wahlberg and Wynne, 2001). The possible advantages of early detection have motivated researchers to try to identify premorbid signs and symptoms relating to the development of schizophrenia. According to the vulnerability/stress and stress-diathesis models, there are inherited and possible neural factors that make some persons more vulnerable to develop symptoms of schizophrenia in stressful life situations (Rosenthal, 1963; Zubin and Spring, 1977; Nuechterlein, 1987). Cognitive impairment is one factor that may precede the onset of schizophrenia (David et al., 1997; Cornblatt et al., 1999; Davidson et al., 1999; Cannon et al., 2000; Erlenmeyer-Kimling et al., 2000; Isohanni et al., 2000; Erlenmeyer-Kimling, 2001), and it may also be a vulnerability indicator. Cannon et al. (2000) found cognitive dysfunction to be evident as long as 10–15 years before the onset of formal diagnostic symptoms. Apart from the connection between thought disorder and schizophrenia established in previous studies, it has also been suggested that the presence of thought disorder could be an indicator of vulnerability to schizophrenia (Hurt et al., 1983; Arboleda and Holzman, 1985; Nuechterlein et al., 1986; Koistinen, 1995; Wahlberg et al., 1997, 2000; Ott et al., 2001).

The purpose of this study was to determine if signs of thought disorder determined by the TDI are predictive of future psychiatric disorder. We hypothesized that, independently of the genetic risk to schizophrenia, people who showed signs of