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Childhood psychopathology and development of adult schizotypal symptoms

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Summary

Schizophrenia spectrum pathology is composed of multiple conditions that are characterized by distortions of cognitive and perceptual reality, collectively known as positive symptoms (delusions and hallucinations), negative symptoms (emotional and behavioral disturbances), and disorganized symptoms (difficulty in pursuing a logical train of thought and understanding and utilizing information; Kaplan, Sadock, & Grebb, 1994). These conditions have different gradient of dysfunction, ranging from a milder, non-clinical form of schizotypy to conditions at the extreme end of the spectrum, such as schizophrenia and psychosis (Meehl, 1989). They are considered to be persistent and lifelong and are supposed to present themselves differently at different ages. Consequently, developmental origins of schizophrenia spectrum pathology have been intensively studied throughout the years. This has led to the identification of many different behavioral and intellectual factors that can be associated with the development of disorders within the schizophrenia spectrum, such as schizophrenia and psychosis. However, the etiology of these disorders remains unclear. Presently, there are still no effective treatments for most aspects of schizophrenia spectrum pathology and its functional impairments. A possible explanation might be found in the substantial variability within each diagnostic group of schizophrenia spectrum patients studied so far. For example, some of the patients with disorders within the schizophrenia spectrum respond poorly to all available treatments and have a poor outcome, while others respond well to treatment, and sometimes even have full remission of all symptoms and full recovery even to the premorbid level of functioning (McGrath, 2008). Moreover, the majority of at-risk individuals based on childhood behaviors does not meet the criteria for a schizophrenia spectrum disorder in adulthood, but tends to manifest subclinical schizophrenia-like abnormalities (Chapman, Chapman, Kwapil, Eckblad, & Zinser, 1994; Raine, 1991; Tsuang, Stone, Tarbox, & Faraone, 2002), i.e., schizotypal symptoms. The investigation of childhood behavior and its association with adult schizotypal symptoms therefore constitutes a valid and noteworthy, yet relatively understudied, area

of exploration with strong implications for clinical practice and research. Finally, since psychiatric problems are known to unfavorably affect a person's quality of life and many juvenile behavioral and intellectual markers are also associated with the development of other psychiatric problems than schizophrenia spectrum pathology, the question remains unanswered in what way these aforementioned behavioral and intellectual markers may be associated with the development of distinctive adult schizotypal symptoms in a cohort of subjects presenting with juvenile psychopathology.

The present series of studies therefore investigated how quality of life was related to distinctive adult schizotypal symptoms (chapter two) and how juvenile behavioral and intellectual (dys) functioning was associated with distinctive adult schizotypal symptoms (chapter three to five) in a sample of patients who all sought psychiatric help at child age.

The subjects of the study were children who came for psychiatric assessment to the department of Child and Adolescent Psychiatry at the University Medical Centre Utrecht, the Netherlands, during 1984 to 2004. Subjects who were aged 18 years or older at follow-up (2006 to 2010) were, when possible, traced and encouraged to participate in the study. The participants were assessed for adult schizotypal symptoms using the Schizotypal Personality Questionnaire-Revised (Raine, 1991; Vollema, & Hoijtink, 2000). Quality of life was evaluated using a questionnaire concerning global and clinical outcome in adult life which was developed at the Department of Child and Adolescent Studies of Leiden University. Based on the publication of Corrigan and Buican (1995) Quality of life was discriminated between Objective quality of life (OQoL), i.e., evaluating the patients' living conditions, and Subjective quality of life (SQoL), i.e., evaluating the patients' appraisal of these conditions.

In chapter two it was found that level of schizotypal symptomatology unfavorably affected each domain of OQoL. Impoverished SQoL, and in particular dissatisfaction with social contacts, was predominantly related to negative schizotypal symptoms. This finding is of importance for clinical practice, since it shows that level of schizotypal symptoms, and in particular negative symptoms most strongly affected OQoL and SQoL.

In chapter three and chapter four it was studied how and to what extent behavioral abnormalities in childhood and adolescence were associated with the development of schizotypal symptomatology in adulthood. In chapter three the nosological approach of the Diagnostic and Statistical Manual (DSM; American Psychiatric Association, 1980; 1987; 1994) was applied. Albeit all children and adolescents with psychiatric diagnoses scored higher on general schizotypal symptoms than typically developing controls in adulthood, the differences were only significant for persons presenting with the follo-

wing psychiatric problems, namely Pervasive Developmental Disorders (PDD), Attention Deficit Hyperactivity Disorders (ADHD), Deferred diagnosis, Sexual and Gender Identity Disorders, and Depressive Disorders. In addition, children presenting with problems such as PDD, ADHD, and Deferred diagnosis, were more likely to develop both disorganized and negative schizotypal symptoms in adulthood. Four other groups of children showed higher scores on negative schizotypal symptoms in adulthood, i.e., children diagnosed with Sexual and Gender Identity Disorders, Depressive disorders, Disruptive disorders, and 'Other condition that may be a focus of clinical attention'. None of children with psychiatric disorders showed higher levels of positive schizotypal symptoms in comparison with typically developing controls. These results clearly show that individuals with juvenile psychiatric problems are more likely to develop negative and disorganized schizotypal symptoms in adulthood when compared to typically developing controls and that how symptoms can change across the lifespan, i.e., that specific patterns of adult schizotypal symptomatology can be associated with different types of juvenile psychiatric disorders.

In chapter four a dimensional approach was applied to study how and to what extent behavioral problems within a school's context are associated with the development of adult schizotypal symptoms. It was further examined whether this was specific for boys and girls. To assess behavioral problems within a schools' context, we used the Teacher Report Form (TRF; Verhulst, Van der Ende, & Koot, 1997), a measurement instrument in which the teacher reports about eight different behaviors of the child. It was found that five of eight behavioral subscales were associated with disorganized schizotypal symptoms in adulthood. Problems in the area of thinking as well as rule breaking behavior were further associated with the development of positive symptoms in adulthood. When boys and girls were studied separately, the problems in the area of thinking and positive and disorganized symptoms were only associated in boys, while externalizing problems, i.e., disruptive, hyperactive, and aggressive behaviors, were associated with the development of disorganized schizotypal symptoms in girls. Based on these results, we can conclude that school-associated thought problems were identified as strongest behavioral indicator of future schizotypal symptoms, especially in boys, and that subjects burdened by a broad range of behavioral problems in childhood and adolescence are the ones to show most severe adult disorganized symptoms.

In chapter five it was studied whether level of intellectual (dys) functioning in juvenile psychopathology was associated with the development of adult distinctive schizotypal symptomatology. Further, the role of gender was explored. We found no evidence for general and specific domains of intelligence in juvenile psychopathology

being related to the development of general and distinctive adult schizotypal symptoms. This was true for boys as well as for girls. The absence of associations was surprising since studies so far have well-established that intellectual functioning in childhood and adolescence is lower in patients who develop disorders such as schizophrenia and psychosis. What might explain present absence of associations is that the current study only investigated subjects who all showed juvenile psychopathology instead of using typically developing controls for comparison. In addition, the development of schizophrenia-like symptoms was studied instead of development of disorders at the extreme end of the schizophrenia spectrum. The present results might therefore be interpreted as intellectual markers being non-specific and too subtle to detect in milder forms of schizophrenia spectrum pathology, i.e., schizotypal symptoms.

In conclusion, the results of the present studies show how schizotypal symptoms may develop following child psychiatric psychopathology and how these symptoms unfavorably influence a person's quality of life. It is important for clinicians to be aware of the complex dynamics of psychopathology and the higher risk for adult schizotypal symptomatology following behavioral problems and psychiatric disorders at child and adolescent age.

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