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A special role of negative emotion in children and adolescents with schizophrenia and other psychoses

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Abstract

Emotional impairments are apparent at an early stage in schizophrenia. While emotion processing has been studied intensively in adult patients, investigations focusing on children and adolescents with psychoses are rare. Emotion probes for mood induction and emotion discrimination that have been standardized in healthy subjects and applied to adult schizophrenia patients were evaluated in young patients (11–20 years). Twenty children and adolescents with schizophrenia and other psychotic disorders as well as twenty healthy volunteers matched for age, gender and parental education were examined. Results reveal successful mood induction in both patients and healthy volunteers, but with more negative affect prominent in patients. While a reduced ability to discriminate negative emotional faces emerged in patients than in controls, this difference failed to reach statistical significance. The similarities between test results of children and adolescents compared with those of adults demonstrate that both tests proved to be useful when applied to younger ages. Negative affect seems to be differentially affected, a finding that which may be already evident in the early course of schizophrenia.

Keywords: Emotion discrimination; Mood induction; Early-onset schizophrenia; Children; Adolescents

1. Introduction

One of the major goals of investigating schizophrenia has been to identify developmental precursors and risk factors of the disease. Researchers have recently focused on childhood-onset psychoses since they are thought to predict a more severe course of illness (Asarnow and Asarnow, 1994; Gordon et al., 1994). This patient group is also likely to be less affected by factors such as chronic illness, long-term substance abuse and neuroleptic exposure than their adult-onset counterparts (McKenna et al., 1994). Yet, clear diagnoses of schizophrenia at early ages are difficult to achieve.

Virtually all psychiatric disorders, including both anxiety and mood disorders as well as schizophrenia, involve some dysfunction or dysregulation of affect (Schneider et al., 1998a; Davidson and Irwin, 1999). Major affective symptoms have been diagnosed in 77% of adult patients at the time of clinical admission (Schneider et al., 1998a). Many studies in adult patients have found that deficits in recognizing, assessing and experiencing emotions are characteristic features of schizophrenia pathology. The various results revealed a reduced mood-induction effect as well as impairments

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in emotion discrimination and a reduced ability to express emotions (Walker et al., 1984; Mandal and Rai, 1987; Schneider et al., 1995; Mandal et al., 1999; Habel et al., 2000; Sachs et al., 2004; Tremeau et al., 2005). However, there is an ongoing discussion that questions whether these impairments represent a differential deficit for emotion processing or reflect a generalized cognitive deficit (Kerr and Neale, 1993; Salem et al., 1996; Johnston et al., 2001). This discussion is also held with respect to cognitive and emotional impairments in children and adolescents with other psychiatric disorders, for example, in children with autistic-like disorders (Dawson et al., 2005; Buitelaar and van der Wees, 1997; Gross, 2004), attention-deficit-hyperactivity disorder and conduct disorders (Cadesky et al., 2000).

Emotion-recognition impairments may also be related to deficits observed in theory of mind settings in schizophrenia patients (Lee et al., 2004), where mentalizing and the conscious interpretation of what others are thinking are required, and also in empathy, where mind reading of others as well as facial emotion recognition are prerequisites.

Deficits in experiencing as well as recognizing emotions are likely to be associated with emotional symptoms and abnormal emotional responses, and contribute to lacking social skills and reduced social integration. These deficits seem to represent a common schizophrenia-specific impairment reflecting basal pathophysiological mechanisms of the disease, and they have been detected in prodromal stages and additionally in the relatives of patients (Kee et al., 2004). Hence, there is reason to believe that impairments in emotion processing are present before the onset of illness, which might predict the detection of impairments in emotion processing in early-onset psychoses. It can also be suggested that these deficits may have especially adverse effects in patients with early onset of illness to the extent that they interfere with normal social–emotional development. The clinical relevance of such deficits has been shown in a prospective study examining the association between emotion-recognition and functional as well as social outcome (Kee et al., 2003): a significant predictive value of emotion-recognition performance for successful employment and independent living was found.

In healthy children, recognition of facial emotions develops slowly over the first 2 years of life, and is still rudimentary at that time (Nelson, 1987); development continues throughout childhood and adolescence as reflected in behavioral and neural evidence (Herba and Phillips, 2004). It is suggested that a component of this ability is in great part unlearned and a biological readiness exists, but that the emotional environment contributes to this development (de Haan et al., 2004). Influencing factors are sex, socio-economic status and verbal abilities as well as emotion category (Herba and Phillips, 2004).

However, such emotion-processing capacities have rarely been investigated in children with psychoses. One such study demonstrated some deficits in recognizing emotional states expressed in poses and gestures in patients (7–13 years, Polyakov and Zhirnova, 1990): while schizophrenia patients demonstrated fewer emotional responses than normal controls, they did not differ in emotional quality. In addition, performance in emotion recognition increased with age in patients as well as controls (from 7–9, 10–11 to 12–13 years). This indicates that the development of the ability to identify expressive gestures is retarded in patients. As a result, patients were less successful in identifying a person's emotional state while assessing a gesture.

On the other hand, neuropsychological impairments during childhood or adolescence of early-onset psychoses are clinically prominent. Adult-equivalent psychometric tasks, administered to children diagnosed with schizophrenia or who were considered to be at risk, revealed major neuropsychological impairments (Asarnow and Asarnow, 1994). Kumra and colleagues (2000) described generalized cognitive deficits including attention, learning and abstraction deficits in patients with childhood-onset schizophrenia versus patients with psychotic disorders not otherwise specified.

In view of earlier findings regarding emotion experience and discrimination impairments in adults with schizophrenia (Schneider et al., 1995, 1998b; Habel et al., 2000, 2004; Gur et al., 2002), we aimed to extend these investigations to children and adolescents with psychotic disorders, applying standardized emotion probes. These probes, including mood induction and emotion discrimination, have already been evaluated and have well-established discriminative power in adult healthy subjects and schizophrenia patients (Schneider et al., 1995). They have also been applied to children (Rojahn et al., 1995).

We hypothesize that these standardized emotion probes will be useful in patients with childhood and adolescence onset psychoses and will yield similar results to those that have been found in adult patients (Schneider et al., 1995; Habel et al., 2000). In these studies, adult schizophrenia patients were investigated with these probes and results revealed correlates of the often reported emotional impairments typical for the disorder, irrespective of cultural background (Habel et al., 2000): a reduced general emotion-discrimination