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Brief report

Impaired emotion processing in remitted patients with bipolar disorder

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Abstract

In the present study, we examined whether there is an impairment in affect matching abilities in remitted patients with bipolar disorder and if this could be attributed to problems with facial perception per se and/or the ability to perceive the relative valence of facial expressions indicating emotions.

We examined 19 patients with bipolar disorder I, currently remitted, and 30 healthy controls (15 men), matched on age, education, and gender, using two computerized tests: matching facial identity [Kinney's Identity Matching Test (KIMT)] and matching facial emotional expressions [Kinney's Affect Matching Test (KAMT)].

Patients with bipolar disorder performed significantly worse than the healthy group on the KAMT, but not on the KIMT. Performance on the KAMT and KIMT did not correlate with age of onset and duration of illness, or with manic or depressive residual symptoms.

The present findings support the differential deficit hypothesis regarding impaired affect perception in bipolar disorder during remission. Patients' deficits were restricted to the matching of facial emotional expressions despite their intact perception of facial identity.

Keywords: Bipolar disorder; Remission; Facial emotion perception; Neuropsychology

1. Introduction

In contrast to the extensive literature exploring successful decoding of facial emotional expression in patients with schizophrenia (Addington and Addington, 1998; Edwards et al., 2001; Hooker and Park, 2002; Habel et al., 2000; Kohler et al., 2000; Kosmidis et al., in press; Mandal et al., 1998; Shaw et al., 1999), few studies have examined facial affect perception in patients with bipolar disorder. Accurate perception of facial emotional expression is considered critical in everyday social and interpersonal functioning. Therefore, it is important to delineate the impairment observed in psychiatric disorders.

The few studies that have addressed facial emotion perception report conflicting findings. Manic patients, with or without psychotic symptoms, have demonstrated

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difficulties in decoding facial emotions on facial affect labeling tasks (Lembke and Ketter, 2002; McClure et al., 2005; Getz et al., 2003). Recognition of faces remained intact in this group of patient (Getz et al., 2003). In some studies, patients with bipolar disorder, clinically stable, in remission or eythymic, were also found to be impaired in facial affect labeling (Yurgelun-Todd et al., 2000; McClure et al., 2005) and matching tasks (Addington and Addington, 1998). Yet in other studies, patients with bipolar disorder, in remission or eythymic, showed no evidence of deficits in facial affect labeling (Addington and Addington, 1998; Edwards et al., 2001; Lembke and Ketter, 2002; Venn et al., 2004) and matching (Edwards et al., 2001) tasks. Finally, Harmer et al. (2002) found that an euthymic bipolar group presented enhanced recognition of facial expressions of disgust. Regarding non-emotional facial processing of patients with bipolar disorder, remitted or euthymic patients did not differ from healthy controls in facial recognition tasks (Addington and Addington, 1998; Edwards et al., 2001; Lembke and Ketter, 2002; Venn et al., 2004), while euthymic patients were less accurate in famous face classification compared with healthy controls (Harmer et al., 2002).

In the present study, we sought to explore identity and affect matching abilities in remitted patients with bipolar disorder using tests matched on level of difficulty. More specifically, we examined whether this impairment could be attributed to problems with facial perception per se and/or the ability to perceive the relative valence of facial expressions indicating emotions. We predicted that the patients' difficulties would be limited to processing facial affect cues and not cues indicating facial identity.

2. Method

2.1. Participants

Participants were 19 (8 men) remitted patients with a diagnosis of bipolar disorder I and 30 (15 men) healthy controls. All gave their consent to participate in this study. Patients with bipolar disorder were recruited from the outpatient service of two University Psychiatric Departments, while the healthy participants were recruited from the community.

All patients were diagnosed according to DSM-IV criteria (APA, 1994). Diagnosis was confirmed with the Greek version (translation-adaptation to the Greek language by S. Beratis) of the Mini International Neuropsychiatric Interview (4.4) (MINI) (Sheehan et al., 1998). In order to ensure symptom remission, patients were included only if they had a score of eight or less on the Montgomery–Asberg Depression Rating Scale (MADRS; Montgomery and Asberg, 1979), as well as on the Young Mania Rating Scale (YMRS; Young et al., 1978). All of the patients were receiving the appropriate medication to ensure mood stabilization at the time of the study.

Exclusion criteria for both groups included neurological and developmental disorders, a history of head injury, alcohol or drug abuse during the 6-month period prior to testing, and any physical illness that may have affected their cognitive performance. Additional criteria for healthy participants were a history of a psychiatric disorder or treatment and a family history of psychosis; all healthy participants were screened during a semi-structure interview by the experimenter before entering the study.

Demographic characteristics of the two groups, as well as patient clinical data are presented in Table 1.

2.2. Kinney's matching tests

A computerized test assessing identity (Kinney's Identity Matching Test, (KAMT) and affect (Kinney's Affect Matching Test, KIMT) facial processing was administered (Kinney, 1995; Kinney et al., 1995). Each condition consisted of 30 stimuli. Every stimulus

Table 1
Participant demographic characteristics, clinical data and tests scores

Variables	Patients with bipolar disorder ($n=19$)	Healthy controls ($n=30$)
Age	39 (±11), range: 24–57	38 (±10), range: 26–61
Sex: M/F	8/11	15/15
Level of education (years)	12 (±3), range: 6–18	11.5 (±3), range: 6–16
Duration of illness (years)	13 (±10), range: 2–36	–
Age of onset	26 (±7), range: 17–44	–
YMRS	3 (±2.5), range: 0–8	–
MADRS	1.5 (±3), range: 0–8	–
KIMT*		
Mean (S.D.)	25 (±4)	26 (±3)
Median	25	27
Range	18–30	17–30
KAMT**		
Mean (S.D.)	22 (±5)	26 (±3)
Median	24	26.5
Range	10–28	19–30

KIMT: Kinney's Identity Matching Test; KAMT: Kinney's Affect Matching Test.
*Mann–Whitney, $U=233.00$, $p=0.28$.
**Mann–Whitney, $U=159.00$, $p=0.009$.