

Emotion recognition deficits in body dysmorphic disorder

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Abstract

Patients with Body Dysmorphic Disorder (BDD) are characterized by excessive concerns about imagined defects in their appearance, most commonly, facial features. In this study, we investigated (1) the ability to identify facial expressions of emotion, and (2) to discriminate single facial features in BDD patients, Obsessive-Compulsive Disorder (OCD) patients, and in healthy control participants. Specifically, their ability for general facial feature discrimination was assessed using the Short Form of the Benton Facial Recognition Test (Benton AL, Hamsher KdeS, Varney NR, Spreen O. Contributions to neuropsychological assessment: a clinical manual. New York: Oxford University Press; 1983). However, findings of the BFRT indicate no differences among the groups. Moreover, participants were presented with facial photographs from the Ekman and Friesen (Ekman P, Friesen W. Unmasking the face: a guide to recognizing emotions from facial cues. Englewood Cliffs, NJ: Prentice-Hall; 1975 and Ekman P, Friesen W. Pictures of facial affect. Palo Alto: Consulting Psychologists Press, 1976) series and were asked to identify the corresponding emotion. The BDD group was less accurate than the control group, but not the OCD group, in identifying facial expressions of emotion. Relative to the control and OCD groups, the BDD group more often misidentified emotional expressions as angry. In contrast to the findings of Sprengelmeyer et al. [Proc. Royal Soc. London Series B: Biol. Sci. 264 (1997),1767], OCD patients did not show a disgust recognition deficit. Poor insight and ideas of reference, common in BDD, might partly result from an emotion recognition bias for angry expressions. Perceiving others as angry and rejecting might reinforce concerns about one's personal ugliness and social desirability.

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Patients with Body Dysmorphic Disorder (BDD) are distressed about imagined defects in their appearance, most commonly, facial flaws (American Psychiatric Association, 1994). They are very self-critical, fear negative evaluation by others, and often suffer significant morbidity, including social/occupational impairment, hospitalization, and suicide attempts (e.g., Phillips et al., 1993).

Research has shown that neuropsychological deficits and selective information processing might play an important role in the etiology or maintenance of emotional disorders (for review, see Williams et al., 1997; Lezak, 1995). For example, when drawing a complex figure from memory (Osterrieth, 1944), BDD patients

tend to recall details rather than larger organizational design features, resulting in memory deficits (Deckersbach et al., 2000). These maladaptive strategies may also be related to the etiology and maintenance of BDD. Indeed, BDD patients tend to ritualistically compare themselves to others (e.g., Phillips et al., 1993). Based on our clinical experience, we would assume that BDD patients focus on the body part of concern when unfavorably comparing themselves to others (i.e., a patient with nose concerns would focus on other people's noses and disregard the rest of the face). This focus on specific body parts rather than considering global aspects of appearance might impair overall face recognition and could interfere with interpreting facial expressions accurately.

BDD patients have other distortions as well. Compared with OCD patients and healthy controls, they

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interpret ambiguous situations (BDD-related, social, and general) as threatening, whereas OCD patients only exhibit a negative interpretive bias for ambiguous general situations (Buhlmann et al., 2002). Thus, this might lead to increased anxiety in these situations, and BDD patients might, as a result, avoid them.

Most researchers investigating selective information processing used words as stimuli, and there is scant research investigating “real life” stimuli such as faces. However, the advantage of using more ecologically valid stimuli to investigate information-processing abnormalities has been discussed (e.g., Lundh & Öst, 1996). For example, facial expressions are an important means to express negative or positive thoughts and feelings, and researchers have investigated the ability to recognize facial expressions in psychiatric patients, mainly those with schizophrenia (e.g., Addington & Addington, 1998; Mueser et al., 1996; Kerr & Neale, 1993). Kerr and Neale (1993), for example, presented schizophrenic patients and healthy controls with faces varying in emotional expressions and found that schizophrenics, in contrast to controls, exhibited a generalized deficit to recognize emotions. Studying recognition of facial expressions in socially anxious children, Simonian and colleagues found that clinically socially anxious children had significantly poorer facial expression recognition skills than had children with no psychiatric disorder (Simonian et al., 2001). Especially, socially anxious children performed poorer when presented with happy, sad, and disgusted facial expressions.

Given the strong fear of negative evaluation and the frequent presence of ideas of reference (e.g., that other people stare at them), individuals with BDD, like social phobics and delusional patients, might be particularly sensitive to facial expressions. For example, they might interpret a person’s facial expression as negative when it is actually neutral. Therefore, the ability to recognize facial expressions may play a role in the maintenance or even etiology of disorders that are characterized by a strong fear of negative evaluations, such as social phobia and BDD. Taken together, examining recognition biases for threatening facial expressions might help us understand why BDD patients fear and avoid social situations.

In the current study, we investigated (1) the general ability of overall face recognition (a) to control for neuropsychological deficits in facial feature processing, and (b) to examine whether BDD patients, relative to individuals without BDD, would be less accurate in recognizing faces considering their tendency to over-focus on single aspects in their face while ignoring broader aspects of the face, and (2) whether BDD patients are characterized by recognition biases for threatening facial expressions. To investigate whether these phenomena were typical for BDD or also char-

acterize a broader spectrum of psychiatric disorders, we also included patients with Obsessive-Compulsive Disorder (OCD) as a psychiatric control group.

1. Method

1.1. Participants

The BDD group comprised 20 outpatients (eight men) whose diagnosis was confirmed by structured clinical interviews (SCID; First et al., 1995). The BDD patients’ concerns were related to their facial skin ($n=15$), hair ($n=5$), breasts ($n=1$), eyes ($n=1$), and shape of nose ($n=1$). The OCD group comprised 20 outpatients (eight men) whose diagnosis was determined by the SCID (First et al., 1995). OCD patients had the following symptoms: contamination fears ($n=9$), aggressive obsessions ($n=5$), sexual obsessions ($n=2$), fear of making mistakes ($n=1$), obsessions about guilt ($n=1$), religious obsessions ($n=1$), rumination ($n=1$), checking ($n=15$), hand washing ($n=9$), counting compulsions ($n=2$), hoarding ($n=1$), and rereading ($n=1$). The control group comprised 20 participants (seven men), free of any current or past psychiatric disorder (DSM-IV; APA, 1994, as determined by the SCID (First et al., 1995). The groups did not differ with respect to age, $F(2, 59)=0.17$, $P=0.85$ (BDD group: $M=32.7$, $SD=11.3$; OCD group: $M=31.0$, $SD=10.5$; Controls: $M=32.9$, $SD=11.7$) and education, $F(2, 59)=0.08$, $P=0.92$, (BDD group: $M=16.4$, $SD=2.7$; OCD group: $M=16.6$, $SD=2.0$; Controls: $M=16.6$, $SD=2.1$). BDD and OCD patients were recruited at the OCD Clinic at the Massachusetts General Hospital (MGH). Controls were recruited through posted flyers in the Boston area.

1.2. Materials and methods

1.2.1. General facial recognition stimuli

To determine whether the groups would differ in their ability of overall face recognition, we administered the Short Form of the Benton Facial Recognition Test (BFRT; Benton et al., 1983). Specifically, it requires matching a target face with up to three pictures of the same person in a six-stimuli array of faces that vary in terms of angles and lighting. Thirteen faces were presented in black and white; none was expressing emotion. For the first six items, only one face matched the target face. For the last seven items, three faces matched the target face. Scores could range from 0 to 27 correct responses.

1.2.2. Emotion recognition task

The stimuli comprised 42 photographs showing emotional expressions (Ekman & Friesen, 1975, 1976). Each emotion was presented by six different models

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