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## Cognitive Behavioral Therapy for Olfactory Reference Syndrome: A Case Report

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Olfactory reference syndrome (ORS) is a psychiatric condition characterized by concerns about perceived body odor, which may be accompanied by repetitive behaviors to mask body odor and avoidance of social situations.<sup>1</sup> ORS has been proposed as an obsessive-compulsive and related disorder in the *DSM-5*.<sup>2</sup> There is no established standard treatment for ORS. Some case studies have reported (partial) response with clomipramine,<sup>1,3,4</sup> while others have reported nonresponse.<sup>5-7</sup> The interpretation of previous case reports on behavioral therapy and eye movement desensitization and reprocessing (EMDR) is impeded by the paucity of objective outcome assessments.<sup>5,7-9</sup> To date, no report on cognitive behavioral therapy (CBT) has been published. We present a case of ORS in a woman who was successfully treated with CBT.

**Case report.** Ms A, a 23-year-old Creole woman with no history of physical disease, had been suffering from ORS symptoms for 10 years. She was diagnosed (*DSM-IV* criteria) with generalized anxiety disorder (GAD), which developed after the onset of ORS symptoms. She had an overvalued idea that she emitted a sweaty body odor that disgusted people around her. She interpreted other people's frowning or distancing themselves as proof for her beliefs. She experienced severe distress in confined spaces (classroom and public transport) where people could smell her presumed odor. She regularly checked her odor, showered every time she left home, and used excessive amounts of deodorant. She repeatedly sought consultation with dermatologists. Due to avoidance and distress, her study performance and social life were impaired. She had received supportive psychotherapy, which was associated with limited improvement. Ms A was therefore referred for assessment and further treatment.

Pretreatment physical, neurologic, and laboratory evaluation showed no abnormalities. Her pretreatment score on the Body Dysmorphic Disorder Modification of the Yale-Brown Obsessive Compulsive Scale (BDD-YBOCS)<sup>10</sup> was 28 out of 48, indicating moderate symptoms (Table 1). CBT

was carried out with 8 fellow group members who were all suffering from body dysmorphic disorder (BDD). Treatment consisted of twice-weekly sessions with a total duration of 16 weeks. CBT was based on a previously published manual,<sup>13</sup> which was adapted to facilitate group-based treatment. The first session entailed psychoeducation and establishment of treatment goals. In the second session, an exposure hierarchy was composed. During and between sessions, gradual and repetitive in vivo exposure with task concentration and response prevention were performed. The treatment manual was adapted specifically for Ms A to include tailored exposure exercises to evoke fear-inducing stimuli related to her emitting an offensive body odor. Examples included approaching someone on the street for small talk and, subsequently, standing close and talking to someone in a confined space and then doing so without using deodorant or showering beforehand. Cognitive restructuring was introduced to identify and adjust dysfunctional beliefs. In the final sessions, relapse prevention strategies were discussed. Apart from body-oriented therapy elements, such as progressive muscle relaxation (Jacobson technique) and breathing exercises, no concurrent treatments were performed.

Following treatment, Ms A's ORS symptoms fully remitted. For residual GAD symptoms, paroxetine 20 mg/d was initiated after CBT termination. Two months thereafter, GAD symptoms remitted (Table 1). In the following months, ORS and GAD symptoms remained in remission. Ms A resumed her studies and group fitness classes.

The present case is the first report of successful treatment of ORS combining cognitive and behavioral techniques. ORS and comorbid symptoms were assessed using objective rating scales, elaborating on previous reports on behavioral therapy and EMDR in ORS.<sup>5,7-9</sup> After CBT group treatment, ORS symptoms fully remitted and improvement was maintained for 6 months. Paroxetine treatment initiated after CBT could have contributed to maintenance of remission. Our findings are promising, because a standard treatment for ORS has not been established.<sup>2,6</sup> The classification of ORS as an obsessive-compulsive spectrum disorder is a point of ongoing debate.<sup>2</sup> The group CBT in which our patient enrolled was designed for treatment of BDD. Nevertheless, ORS remitted, which gives some support for the classification of ORS as an obsessive-compulsive spectrum disorder. However, our observations should be interpreted with caution, as the effects noted could be based on nonspecific therapeutic factors and were limited to a single case. Therefore, further research, particularly a randomized controlled trial of the efficacy of CBT in ORS, is warranted.

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**Table 1. Olfactory Reference and Anxiety Symptom Severity Ratings Before and After CBT and at 6-Month Follow-up**

Measure	Before CBT	After 16 Weeks of CBT <sup>a</sup>	Follow-up 6 Months After CBT (paroxetine 20 mg/d used during this time)
Body Dysmorphic Disorder Modification of the Yale-Brown Obsessive Compulsive Scale <sup>b</sup>	28	3	4
Dutch Dimensional Obsessive-Compulsive Scale <sup>c</sup>	23	2	3
Hamilton Anxiety Rating Scale <sup>d</sup>	41	25	8
Global Assessment of Functioning score	41–50	... <sup>e</sup>	71–80

<sup>a</sup>CBT was started in November 2014.

<sup>b</sup>A 12-item semistructured clinician-rated instrument designed to rate the severity of body dysmorphic disorder-related symptoms; has a range of possible scores of 0–48.

<sup>c</sup>A 9-item semistructured clinician-rated instrument designed to rate the severity of obsessive-compulsive disorder-related symptoms; has a range of possible scores of 0–50.<sup>11</sup>

<sup>d</sup>A 14-item semistructured clinician-rated instrument designed to rate the severity of anxiety symptoms; has a range of possible scores of 0–56.<sup>12</sup>

<sup>e</sup>Not measured at this time point.

Abbreviation: CBT = cognitive-behavioral therapy.

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