



## King's Research Portal

DOI:

[10.1590/1516-4446-2013-1238](https://doi.org/10.1590/1516-4446-2013-1238)

*Document Version*

Early version, also known as pre-print

[Link to publication record in King's Research Portal](#)

*Citation for published version (APA):*

Veale, D., & Matsunaga, H. (2014). Body dysmorphic disorder and olfactory reference disorder: proposals for ICD-11. *Revista brasileira de psiquiatria (São Paulo, Brazil : 1999)*, 36 (Suppl 1), 14-20.  
<https://doi.org/10.1590/1516-4446-2013-1238>

### **Citing this paper**

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### **General rights**

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### **Take down policy**

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



**Body Dysmorphic Disorder and Olfactory Reference  
Disorder: proposals for ICD-11**

Journal:	<i>Revista Brasileira de Psiquiatria</i>
Manuscript ID:	RBP-2013-SA-1238.R2
Manuscript Type:	Special Article
Date Submitted by the Author:	n/a
Complete List of Authors:	Veale, David; King's College London , Institute of Psychiatry
Keywords:	Obsessive - Compulsive Disorder, Administration, Diagnosis And Classification, Education - Psychiatric, Other Specialties

SCHOLARONE™  
Manuscripts

Review

## **Body Dysmorphic Disorder and Olfactory Reference Disorder: proposals for ICD-11**

David Veale<sup>1</sup> MD and Hisato Matsunaga<sup>2</sup> MD、 PhD

<sup>1</sup> Institute of Psychiatry and South London and Maudsley Trust, London, SE5 8AZ, UK, david.veale@kcl.ac.uk Tel: +44 203 2282101

<sup>2</sup> Department of Neuropsychiatry, Hyogo College of Medicine, 1-1 Mukogawa-cho, Nishinomiya, Hyogo, 663-8501, Japan

**Abstract**

**Objective:** The article reviews the historical background and symptoms of body dysmorphic disorder (BDD) and olfactory reference disorder, and describes the proposals of the WHO ICD-11 Working Group on Obsessive-Compulsive and Related Disorders related to these categories. **Method:** This paper examines the possible classification of BDD symptoms in ICD-10 and found four different possible diagnoses (“hypochondriacal disorder”, “schizotypal disorder”, “delusional disorder”, or “other persistent delusional disorder”). This has led to significant confusion and lack of clear identification in ICD-10. Olfactory reference disorder can also be classified as a delusional disorder in ICD-10 but there is no diagnosis for non-delusional cases. The Working Group reviewed the classification and diagnostic criteria of BDD in DSM-5, as well as cultural variations of BDD and olfactory reference disorder that include Taijin Kyofu-sho. **Results:** The Working Group has proposed the inclusion of both BDD and olfactory reference disorder in ICD-11, and has provided diagnostic guidelines and guidance on differential diagnosis.

**Conclusions:** The Working Group’s proposals for ICD-11 related to BDD and olfactory reference disorder are consistent with available global evidence and current understanding of common mechanisms in Obsessive-Compulsive and Related Disorders, and resolve considerable confusion inherent in ICD-10. The proposals explicitly recognize cultural factors. They are intended to improve clinical utility related to appropriate identification, treatment, and resource allocation related to these disorders.

**Keywords:** body dysmorphic disorder; olfactory reference disorder; ICD classification;

## Introduction

Body dysmorphic disorder (BDD) has its historical roots in the description of dysmorphophobia by Italian psychiatrist Enrico Morselli in 1891<sup>1</sup>. Morselli described dysmorphophobia as a “subjective feeling of ugliness or physical defect which the patient feels is noticeable to others, although the appearance is within normal limits. The dysmorphophobic patient is really miserable in the middle of his daily routines, everywhere and at anytime, he is caught by the doubt of deformity”. This is quite similar to today’s conceptualization of BDD as characterized by a preoccupation with ugliness or a perceived defect(s) in appearance based on flaws that are not noticeable to others, or appear only slight. The condition produces significant distress and significant interference with life.

Individuals with BDD typically experience a high degree of self-consciousness as well as ideas of self-reference. Individuals frequently experience a distorted body image or a “felt impression” of how they believe they appear to appear to others.<sup>2</sup> This can often be communicated in a self-portrait of how a person believes he or she looks. They may fear rejection, humiliation or, in some cultures, causing offence to others. Any part of the body may be the focus of the perceived defect, but it is most commonly the face (especially the facial skin, nose, hair, eyes, teeth, lips, chin or face in general). However, there are frequently multiple perceived defects<sup>3,4</sup>. Usually the focal feature is regarded as flawed, defective, asymmetrical, too big/small or disproportionate; or the complaint may be of thinning hair, acne, wrinkles, scars, vascular markings, pallor or ruddiness of complexion or insufficient muscularity. Sometimes the preoccupation is vague or consists of a general perception of ugliness

or being “not right” or being too masculine/feminine. Sufferers may respond by trying to verify how they look by repeatedly checking in reflective surfaces, seeking reassurance or questioning others; or they may attempt to camouflage or alter their feature. Alternatively they try to avoid public or social situations to prevent the consequences they fear.

BDD is more common than previously recognized with a prevalence of about 2% in the general population<sup>5,6</sup>. It is a chronic disorder, which persists for many years if left untreated<sup>4,7</sup>. It is also associated with a high rate of psychiatric hospitalisation, suicide ideation and completed suicide<sup>8,9</sup>. It is poorly identified in psychiatric populations where, because of shame and stigma, patients apparently often conceal their difficulties or present with symptoms of depression, social anxiety or obsessive-compulsive disorder (OCD) when their main problem is BDD<sup>7</sup>. Individuals with BDD may receive unnecessary dermatological procedures and cosmetic surgeries settings, which waste resources by failing to address the underlying problem<sup>10,11,12</sup>.

BDD may present in young people as well as adults. However, in young people BDD is thought to present on more of a continuum from normal adolescent self-consciousness. Compared to adults, adolescents with BDD had higher lifetime suicide rates, and more delusional beliefs<sup>13</sup>. They may also be impaired by school refusal, family discord and social isolation. Lastly BDD by proxy may occur rarely<sup>14</sup>, in which an individual is preoccupied by a perceived defect occurring usually in a loved one.

### **Body Dysmorphic Disorder in ICD-10**

The diagnosis of “body dysmorphic disorder” or “dysmorphophobia” was not separately classified in ICD-10<sup>15</sup> but was listed or described under four different

diagnoses. It is unclear how these are differentiated. The first of the possible diagnoses for BDD in ICD-10 is hypochondriacal disorder (F45.2), for which BDD is listed as an inclusion term. For hypochondriacal disorder there must be either “a persistent belief, of at least 6 months duration, of the presence of at least one serious physical illness underlying the present symptom, even though repeated investigations and examinations have identified no adequate physical explanation” *or* “a persistent preoccupation with a presumed deformity or disfigurement”. There is a further requirement of a “persistent refusal to accept the advice and reassurance of several different doctors that there is no physical illness or abnormality underlying the symptoms”. This last requirement is designed for people with concerns about illness or somatic symptoms and is not sufficiently specific for BDD. While people with BDD may interact with the health care system by seeking repeated cosmetic procedures from dermatologists or surgeons, this behaviour is by no means universal and is dependent on the specific form of BDD, financial means, and culture.

Symptoms of BDD are also specifically mentioned in the ICD-10 description of Schizotypal disorder (F21), which is “characterized by eccentric behaviour and anomalies of thinking and affect which resemble those seen in schizophrenia”. One of the examples provided for schizotypal disorder is “obsessive ruminations without inner resistance, often with *dysmorphophobic*, sexual or aggressive contents”.

Alternatively, symptoms of BDD are also mentioned in the ICD-10 description of “delusional disorder” (F22.0) in which an individual expresses “a single delusion or set of related delusions, which are persistent and sometimes lifelong.... Often they are persecutory, hypochondriacal, or grandiose, but they may be concerned with litigation or jealousy, or express a conviction that the individual's *body is misshapen*”. Lastly, symptoms of BDD are also mentioned under the diagnosis of “Other persistent

delusional disorder” (F22.8). This was a residual category for any persistent delusional disorder that does not meet the criteria for delusional disorder (F22.0). It may include: “*delusional dysmorphophobia*”.

ICD-10 is therefore very confusing for the clinician in deciding how to best classify symptoms of BDD. The lack of a separate diagnosis of BDD also causes problems when trying to identify cases or audit outcomes on computerised systems that use ICD-10. Secondly, not having a separate diagnosis contributes to the lack of recognition of BDD and to the use of unhelpful treatments such as antipsychotic medication<sup>16</sup> or other forms of therapy that are not effective for BDD<sup>17</sup>.

### **History of Body Dysmorphic Disorder in DSM**

In DSM-IV, BDD was classified within the section on somatoform disorders. In DSM-5, BDD has been moved to the section on obsessive-compulsive and related disorders<sup>18</sup>. While the DSM-IV criteria referred to an “imagined defect”, this has been helpfully clarified in DSM-5 to refer to a preoccupation with “perceived defects or flaws”. Like most conditions, the symptoms must be either significantly distressing or interfering in one’s life.

DSM-5 has also added an additional criterion requiring that the person has performed repetitive behaviours or mental acts in response to the appearance concerns at some point during the course of the disorder. Avoidance behaviour is described as an associated feature. In DSM-IV, if the beliefs regarding physical defects were considered to be delusional in intensity, an additional diagnosis of a Delusional Disorder could be assigned. DSM-5 regards such delusional beliefs regarding physical defects as an indication of the severity of BDD, so that an additional diagnosis of Delusional Disorder is not indicated<sup>19</sup>. This makes the diagnostic algorithm for BDD more consistent with disorders such as Anorexia Nervosa or OCD: for these



conditions, an additional diagnosis is not assigned to denote delusional beliefs that are part of the disorder. Instead, DSM-5 has provided an additional specifier for the degree of insight to be added to the diagnosis of BDD. It has also added a specifier for “muscle dysmorphia” to be used in cases that involve an individual being preoccupied with his or her body being too puny or insufficiently muscular.

### **Proposals for ICD-11**

The paper will now discuss considerations for how BDD should be described and classified in the ICD-11, based on the discussions of the WHO ICD-11 Working Group on the Classification of Obsessive-Compulsive and Related Disorders. The Working Group was appointed by the WHO Department of Mental Health and Substance Abuse and reports to the International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders.

The Working Group agreed that ICD-11 should include a separate diagnosis of BDD, based on evidence regarding the validity of the disorder and the issues of clinical utility described above. It is clear that clinicians are currently using the BDD diagnosis even though no such separate category exists in ICD-10. Further, the Working Group agreed that BDD should be included in the grouping of Obsessive-Compulsive and Related Disorders, based on similarity of phenomenology with other disorders in the same section. Describing BDD clearly within ICD-11 should assist health professionals of other relevant fields such as general practitioners, dermatologists, dentists or cosmetic surgeons in recognizing the clinical features of BDD and help to reduce the risk of inappropriate treatment. It may also facilitate research and audit in health systems that use the ICD-10 by resolving confusion in the categorization of symptoms of BDD.

The Working Group recommendations are to describe the diagnostic features as including preoccupation (for example at least an hour a day at the forefront of the mind) with a perceived defect(s) or flaw(s) in appearance or ugliness in general that is either unnoticeable to others, or only slightly noticeable. It was also recommended to include the characteristic of an excessive self-consciousness, typically with ideas of self-reference, and a description of how the coping behaviour is manifested. This is either by repeated verification of how exactly they look or how bad the defect is (for example by checking in reflective surfaces or by comparing the feature with others); or by attempts to camouflage or alter the defect; or by attempts to avoid public or social situations or other situations or stimuli that increase distress. The group noted that that the coping behaviour(s) in response to the perceived defect were either repetitive or avoidance behaviours or both (rather than just repetitive behaviours) and that behaviours include mental acts such as comparing. Furthermore, these coping behaviours have a clear function that enables the clinician to understand them in the context of the disorder.

The Working Group is also proposing a specifier to enable identification of individuals who exhibit no insight regarding the possibility that their beliefs about their appearance might be false (i.e., these beliefs may appear delusional in fixity and intensity). However the Working Group has not proposed including a specifier for muscle dysmorphia, believing that concerns about muscular size and definition were not sufficiently different from other perceived defects in BDD to be able to make a case for the clinical utility of an additional specifier.

### **Differential Diagnoses for Body Dysmorphic Disorder**

One aspect of the material that WHO asked the Working Group to draft was guidance on how each disorder in the grouping can be differentiated from other diagnoses or exist as a comorbid diagnosis. This was particularly important in relation to BDD given the BDD is a new diagnosis proposed for ICD-11 and the confusion about the nature of BDD symptoms that characterized ICD-10. Among the disorders for which the Working Group provided guidance on differentiation from BDD were the following:

#### *Eating disorders*

A preoccupation predominantly focused on being “too fat” or overweight is not part of BDD. A distorted body image is a feature of both BDD and certain eating disorders, such as anorexia nervosa, and may also share other clinical features including body dissatisfaction, distress or poor insight. Thus a person with an eating disorder may also check frequently in reflective surfaces or camouflage their body. A diagnosis of BDD and an eating disorder should both be assigned only when an individual fulfils the diagnostic requirements of one of the eating disorders and is also preoccupied and distressed by perceived defects in her or his appearance unrelated to weight or shape.

An individual who are preoccupied by being insufficiently muscular or lean would be most appropriately diagnosed as having anorexia nervosa if the preoccupation is accompanied by the other clinical features of that disorder, including significantly low body weight (body mass index (BMI) less than 18.5 kg/m<sup>2</sup> in adults), a persistent pattern of restrictive eating or other behaviours that are aimed at establishing or maintaining abnormally low body weight, and low body weight being overvalued and central to the person's self-evaluation, or the person's body weight being inaccurately perceived as normal. Those with the muscle dysmorphia form of

BDD may also exhibit unusual eating behaviours (e.g. excessive protein consumption) or engage in excessive exercise (e.g. over an hour a day), but without these other characteristics. Even though there may be a possible overlap of symptoms associated with alteration or restriction of eating behaviours between the conditions, the motivation or core psychopathological characteristics based on such behaviours are different. If low body weight and shape idealization is central to the symptomatology, then a feeding and eating disorder diagnosis rather than BDD should be considered.

#### *Depressive episode*

BDD is differentiated from depression by the content of the preoccupation and repetitive behaviours. BDD is however often associated with symptoms of depression and should still be diagnosed even if symptoms of depression reach a diagnostic threshold. An individual with BDD will commonly state that if he or she did not have symptoms of BDD then they would not be experiencing symptoms of depression to a degree that they would be seeking help. Occasionally, a diagnosis of a major depressive episode might better account for the symptoms of BDD if the preoccupation is limited to mood-congruent ruminations only during a depressive episode.

#### *Social anxiety disorder*

BDD is often associated with marked and excessive fear or anxiety in social situations leading to avoidance or social situations being endured with intense anxiety. People with BDD and social anxiety disorder may fear the same consequences of negative evaluation by others (for example they would be humiliated, severely embarrassed, offend others or be rejected). In the fear is because of a perceived physical defect or ugliness then a diagnosis of BDD is made. When the

fear is that he or she would *act* in a way or show anxiety symptoms (such as go red or or shake) then a diagnosis of social anxiety disorder is made. In addition people with BDD are more likely to use repetitive behaviours such as mirror checking.

A comorbid diagnosis of social anxiety disorder with BDD could only be made when the person displays a broader fear that he or she will show anxiety symptoms or act inappropriately (for example “be boring”) in a way that will then be negatively evaluated as well as have a perceived defects in their appearance.

#### *Obsessive-compulsive disorder*

In BDD, there may be a pre-occupation with order and symmetry in appearance, which is very similar to OCD, for example wanting one’s hair to be symmetrical and to feel “right”. A comorbid diagnosis of OCD is only given when the obsessions are not restricted to concerns about appearance or there are other unrelated symptoms of OCD.

#### *Skin-picking disorder and trichotillomania*

Skin-picking disorder is characterized by repetitive skin picking resulting in skin lesions and results in significant distress or impairment. The diagnosis should not be made if the picking is solely attributable to a desire to improve the appearance or efforts to correct or “put right” (e.g. removing acne or other perceived blemishes of the skin). A similar issue occurs with trichotillomania in which very occasionally, the hair pulling or plucking is designed to improve the appearance by removing normal facial or bodily hair. It is also possible that some individuals start with BDD but their picking causes “real” defects. However the natural history of skin-picking disorder and BDD has not been sufficiently researched and this would still be regarded as BDD.

#### *Adjustment disorder*

A person with a noticeable acquired physical defect (for example facial burns), who has difficulty adapting, might receive a diagnosis of an adjustment disorder. An adjustment disorder consists of a maladaptive reaction, which has developed within one month of an identifiable psychosocial stress, such as a physical deformity, and tends to resolve within 6 months unless the stressor persists. If the definitional requirements are met for another disorder (e.g. major depressive episode), that disorder should be diagnosed instead of adjustment disorder. An example is provided in DSM-5 of “Body Dysmorphic Disorder like symptoms with actual flaws”. This occurs when the flaws are clearly observable by others (i.e. they are more noticeable than slight but the preoccupation with such flaws are excessive and it fulfills the diagnostic criteria for BDD. The Working Group did not think there was sufficient evidence in the literature for such a diagnosis and that more importantly, it may confuse the field when the core clinical feature of BDD is a preoccupation with a *perceived* defect.

#### *Delusional disorder*

Many people with BDD are regarded as having beliefs about being ugly or being defective that are untrue or not shared by others, and are totally convinced that their view of their appearance is correct (without insight). Similarly, ideas of reference are common in BDD. However in BDD with untrue or unshared beliefs there are no other features of psychoses (for example thought disorder, hallucinations or disorganised behaviour).

No alternative coding is proposed for ICD-11 between BDD and delusional disorder depending on the strength of beliefs and insight (as occurred in ICD-10). In ICD-11, if an individual is without insight about their feature(s) being defective or ugly then they would be coded in ICD-11 as BDD. The Working Group’s proposal for

ICD-11 is to code the degree of insight using a qualifier, with the “no insight” level corresponding to complete conviction, all or almost all of the time, that the beliefs are true.

#### *Body integrity identity disorder*

Body integrity identity disorder (BIID) is a term used to describe individuals who desire one or more digits or limbs to be amputated, as they believe these are not part of their “self”<sup>20</sup>. BIID does not exist as separate diagnosis in ICD-10 or DSM-5 and there are no plans to include it in ICD-11. In BIID as it has been described, the preoccupation is focused not on a feeling of defectiveness or the appearance of the limb or digit but on the sufferers’ expectation that they would be much more comfortable if one or more limbs or digits were amputated or paralysed. Individuals with this condition do not believe (as in BDD) their limbs to be defective or ugly nor do they wish cosmetically to alter the limb.

#### *Personality disorder*

Body image concerns that may amount to symptoms of BDD are relatively common in personality disorder, particularly when personality pathology is more severe<sup>21</sup>. Body image concerns that are less specific and less prominent and do not meet the diagnostic requirements of BDD may be regarded as an aspect of the identity disturbance that characterizes severe personality disorder and do not warrant a separate diagnosis. When the full diagnostic requirements for both disorders are met, both may be assigned.

### **Cultural Issues**

Taijin Kyofu-sho is a culture bound syndrome in Japan and other parts of Asia that consists of an intense fear of offending or embarrassing or hurting others through improper or awkward social behavior, movements, appearance or body odor. Four

types of Taijin Kyofu-sho have been described: a fear of blushing, a fear of eye to eye contact, a fear of having a deformed body, and a fear of emitting a foul body odor<sup>22</sup>.

In a survey of 48 individuals with Taijin Kyofu-sho, it was found that the most common was fear of blushing (40%), of appearing tense (21%), of emitting a body odor (17%), of having a blemish or physical deformity (10%), or of staring inappropriately (4%)<sup>23</sup>. The fear of having a deformed body (“shubo-kyoufu”) would appear to correspond closely to BDD. Taijin Kyofu-sho has traditionally been divided into 2 subtypes: the nervous (phobic) type and the convinced (delusional) type. As discussed above, an insight specifier is planned for BDD to denote fixed conviction. Other types of Taijin Kyofu-sho, especially the nervous (phobic) type with fears of blushing, sweating, appearing tense, or staring inappropriately appear to be more consistent with the proposed social anxiety disorder diagnosis in ICD-11.

Another cultural variation of body image disorder is Koro or suo-yang<sup>24</sup>. It is a disorder that mainly occurs in Asia and to a lesser extent in Africa. It is also known as “genital retraction syndrome”. It refers to the fear or belief that the penis is shrinking or retracting into one’s body. Koro can also occur in populations without a Chinese influence as well as in women when it refers to fears that their breasts and labia are shrinking. It is usually a transient state of acute anxiety and avoidance. The individual anticipates impotence or sterility, or even death. Moreover the immediate family becomes convinced of the same outcome and may hold onto the sufferer’s genitalia manually or with special instruments. Some authors have suggested that Koro is a cultural variant of body dysmorphic disorder<sup>24</sup>; however, the main differences between them is that, in Koro, others in the immediate family share the same beliefs and the anxiety is usually marked but transient.



## Olfactory Reference Disorder

Olfactory reference disorder has its historical roots in late 1800s<sup>25-31</sup>. It was first described as the term “Olfactory Reference Syndrome” in a case series<sup>32</sup>. Olfactory reference disorder is characterized by a preoccupation with emitting a foul or offensive body odor that is not perceived by others. The person also may or not be able to smell their body odor<sup>33</sup>. It might originate from the mouth (halitosis), genitals, anus (including flatus or faeces), feet, underarms, urine, or sweat. Occasionally there are reports of non-bodily odors (e.g. old cheese, rotten eggs, or ammonia).

Sufferers fear or are convinced that others noticing the smell will reject or humiliate them. A fear of offending others due to the perceived smell may also be part of the clinical picture, especially in some Asian cultures. The condition produces significant distress and significant interference with life. Individuals suffer a high degree of self-consciousness and typically experience ideas of reference. Olfactory reference disorder may occur with or without insight<sup>33, 34</sup>. Individuals with olfactory reference disorder often experience ideas or delusions of reference and believe that others refer to them by rubbing their nose, in reference to the odor, or turn away in disgust. They may try to verify how bad the odor is by repeatedly smelling their body or clothing or by seeking reassurance; or they may attempt to camouflage their perceived odour by excessive perfume, gum, deodorant, mints, mouthwash, frequent showering, laundering of clothes, dieting/unusual food intake, or brushing of teeth<sup>34</sup>. To reduce the risk of smelling, they often try to avoid being close to others or being in public or social situations. When preoccupied by emitting flatus, they may control their diet or eat unusual foods. In one study, symptoms of olfactory reference disorder had caused about a half of subjects to avoid occupational, academic, or other important role activities, or to be completely housebound<sup>19</sup>.

The prevalence of olfactory reference disorder is not known as there is no available epidemiological research. Begun<sup>33</sup> found a total of 84 case reports (52 male/32 female) in the literature. In 41 of the reports (49%) events were described that the authors regarded as significant events. These fell into 2 broad categories: (a) sources of unrelated stress at the time that the disorder developed. Authors of the reports expressed doubts or reservations about their belief in slightly under half of the cases.

In olfactory reference disorder, like BDD, the lack of a separate diagnosis causes problems when trying to identify cases for research or an audit in computerised records. Like BDD, not having a separate diagnosis contributes to the lack of recognition and unhelpful treatments that are not specific for olfactory reference disorder. The phenomenology (for example the repetitive checking, reassurance seeking and seeking of medical treatments and avoidance behaviours) are more similar in form to obsessive-compulsive and related disorders than a delusional disorder. They also function as a way of trying to keep the person safe in this case from humiliation or rejection or causing offence to others.

### **Olfactory reference disorder in ICD-10 and DSM**

In ICD-10 and DSM-IV, delusions about emitting a bad odour would have been mostly likely to be identified as symptoms of delusional disorder. In addition, DSM-IV implicitly refers to “olfactory reference syndrome” in the text for social phobia, and the DSM-IV section on the culture-bound syndromes also refers to olfactory reference syndrome under the rubric of Taijin Kyofu-sho. Thus it has never been classified separately and there was no diagnosis for those individuals who had some insight into their condition. Olfactory reference syndrome has been described as

a discrete syndrome or disorder across many cultures for more than a century<sup>19, 35</sup>. In DSM-5, “olfactory reference syndrome” is now mentioned as an example of “not otherwise specified” on the obsessive-compulsive and related disorders section but has not been given a separate diagnosis. The argument for classifying Olfactory Reference Disorder in the section of Obsessive Compulsive and related disorders is (a) The similarity in the phenomenology in terms of the preoccupation and repetitive behaviours, (b) Obsessive Compulsive Disorder is a common comorbid condition for people with olfactory reference disorder<sup>36</sup>, (c) Patients are more likely to receive a trial of a pharmacological and psychological treatment used for obsessive compulsive and related disorders rather than for a delusional disorder, (d) Although the diagnosis appears uncommon, like BDD, patients may be highly ashamed of their symptoms and present with more acceptable symptoms such as depression, OCD or social anxiety<sup>7,8</sup>. When a separate diagnosis is available it raises awareness of the condition and the likelihood of asking specific questions about olfactory reference disorder, (e) A separate diagnosis will stimulate audit and research into the condition and better clinical care for such patients.

### **ICD-11 Proposals for Olfactory Reference Disorder**

The Working Group has proposed that ICD-11 have a separate diagnosis of olfactory reference disorder in the grouping of Obsessive-Compulsive and Related Disorders for parallel reasons as described above for BDD.

The characteristic features of Olfactory Reference Disorder are parallel to those of BDD, most centrally involving a preoccupation with a perceived foul or offensive body odor or breath (halitosis). The perceived body odor is either unnoticeable to others or appears very slight to an observer so that the concerns are

completely disproportionate to the smell, if any. An individual with Olfactory Reference Disorder typically tries to verify how he or she smells by repeatedly checking his or her body or changing clothes or seeking reassurance; or attempts to camouflage the perceived odor by using perfume or deodorant, or prevent it by frequently bathing or brushing teeth, or changing clothes or by dieting or unusual food intake; or avoids situations or activities that are anxiety provoking (e.g. being close to another person). Lastly the preoccupation must be either significantly distressing or be interfering with normal life.

### **Differential Diagnosis**

ORD can be differentiated from the following diagnoses:

#### *Social anxiety disorder*

Like BDD, olfactory reference disorder is often associated with social anxiety and fears of negative evaluation and rejection or humiliation or causing offence to others. When the symptoms are focused on concerns about the perception of emitting an offensive odour then a diagnosis of olfactory reference disorder is made. A comorbid diagnosis of social anxiety disorder could be made when the person displays a broader fear that he or she will show anxiety symptoms (e.g. they will go red, shake or be boring) that will be negatively evaluated and they will act in a way that will be humiliating, embarrassing or offend others. Lastly, the beliefs in olfactory reference disorder tend to be more delusional than those seen in social anxiety disorder.

#### *Obsessive-compulsive disorder*

A comorbid diagnosis of OCD is only given when the obsessions are not restricted to concerns about smelling.

#### *Body dysmorphic disorder*

The focus in BDD is on perceived defects in appearance and not on emitting a foul or offensive body odor. A comorbid diagnosis of BDD is only given when the preoccupation with appearance concerns is not restricted to smell.

#### *Delusional disorder*

If an individual has a delusional conviction about emitting a foul odour then they would be coded in ICD-11 as olfactory reference disorder. However as in the case of BDD, those with a delusional belief about smelling can be coded on their degree of conviction. It would be coded as “No insight” if for all or almost all of the time, the individual is completely convinced that the beliefs are true.

#### **Cultural Issues**

As discussed above, Taijin Kyofu-sho is a culture bound syndrome in Japan and Asia that may consist of an intense fear of offending or embarrassing or hurting others. One of these fears is of emitting a foul body odor (“jiko-shu-kyofu”) and, similar to “shubo-kyofu” (BDD), it has been categorized as the convinced (delusional) type in the traditional Japanese diagnostic system of Taijin Kyofu-sho. Eastern individuals with “jiko-shu-kyofu” of Taijin Kyofu-sho feel that they upset social harmony by offending others through inappropriate and unpleasant body odors. In contrast, social anxiety disorder patients in the West are likely to fear negative evaluation by others in social or performance situations. ICD-11 is therefore planning to better consider the Taijin Kyofu-sho, characterized by fear of emitting a foul body odor and causing offence to others, into olfactory reference disorder in ICD-11.

#### **Conclusion**

The Working Group has proposed the inclusion of both BDD and olfactory reference disorder in the ICD-11, including explicit recognition of cultural variations of these disorders as part of the diagnoses. These proposals are consistent with available global evidence and current understanding of common mechanisms in Obsessive-Compulsive and Related Disorders, and resolve considerable confusion inherent in ICD-10. The proposals move in the direction of increased similarity, though not complete redundancy, with DSM-5. The proposals are intended to improve clinical utility related to appropriate identification, treatment, and resource allocation related to these disorders. Increased recognition should also facilitate future research and audit on these neglected disorders, which would benefit both clinicians and patients.

### **Acknowledgements**

David Veale would like to acknowledge salary support from the National Institute for Health Research (NIHR) Biomedical Research Centre for Mental Health at South London and Maudsley NHS Foundation Trust and the Institute of Psychiatry, King's College London. Hisato Matsunaga would like to acknowledge support from a grant-in-aid for scientific research from the Japanese Ministry of Education, Culture, Sports, Science, and Technology.

The Department of Mental Health and Substance Abuse, World Health Organization, has received direct support that contributed to the activities of the Working Group from several sources: The International Union of Psychological Science, the National Institute of Mental Health (USA), the World Psychiatric Association, the Spanish Foundation of Psychiatry and Mental Health (Spain), and the Santander Bank UAM/UNAM endowed Chair for Psychiatry (Spain/Mexico).

The authors are members of the WHO ICD-11 Working Group for the Classification of Obsessive-Compulsive and Related Disorders, reporting to the International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders. Unless specifically stated, the views expressed in this article are those of the authors and do not represent the official policies or positions of the Working Group, the International Advisory Group, or of WHO.

## References

1. Morselli E, Jerome L. Dysmorphophobia and taphephobia: two hitherto undescribed forms of Insanity with fixed ideas. *History of Psychiatry*. 2001;12:103-7.
2. Osman S, Cooper M, Hackmann A, Veale D. Imagery in people with Body Dysmorphic Disorder: A study of its characteristics and links to early beliefs and memories. *Memory*. 2004;12:428-36.
3. Phillips KA, Diaz SF. Gender differences in body dysmorphic disorder. *J Nerv Ment Dis*. 1997;185:570-7.
4. Veale D, Boocock A, Gournay K, Dryden W, Shah F, Willson R, et al. Body dysmorphic disorder. A survey of fifty cases. *Br J Psychiatry*. 1996;169:196-201.
5. Koran L, Abujaoude E, Large M, Serpe R. The Prevalence of Body Dysmorphic Disorder in the United States Adult Population. *CNS Spectrums*. 2008;13:316-22.
6. Rief W, Buhlmann U, Wilhelm S, Borkenhagen A, Brahler E. The Prevalance of Body Dysmorphic Disorder: A Population-Based Survey. *Psychol Med*. 2006;36 : 877-85.

7. Phillips KA, Nierenberg AA, Brendel G, Fava M. Prevalence and clinical features of body dysmorphic disorder in atypical major depression. *J Nerv Ment Dis.* 1996;184:125-9.
8. Phillips KA, Menard W, Fay C, Weisberg R. Demographic Characteristics, Phenomenology, Comorbidity, and Family History in 200 Individuals With Body Dysmorphic Disorder. *Psychosomatics.* 2005;46:317-25.
9. Phillips KA, Menard W. Suicidality in Body Dysmorphic Disorder: A Prospective Study. *Am J Psychiatry.* 2006;163:1280-2.
10. Veale D, De Haro L, Lambrou C. Cosmetic rhinoplasty in body dysmorphic disorder. *Br J Plast Surg.* 2003;56: 546-51.
11. Phillips KA, Grant J, Siniscalchi J, Albertini RS. Surgical and non psychiatric medical treatment of patients with body dysmorphic disorder. *Psychosomatics.* 2001;42:504-10.
12. Tignol J, Biraben-Gotzamanis L, Martin-Guehl C, Grabot D, Aouizerate B. Body dysmorphic disorder and cosmetic surgery: Evolution of 24 subjects with a minimal defect in appearance 5 years after their request for cosmetic surgery. *Eur Psychiatry.* 2007;22: 520-4.
13. Phillips KA, Didie ER, Menard W, Pagano ME, Fay C, Weisberg RB. Clinical Features of Body Dysmorphic Disorder in Adolescents and Adults. *Psychiatry Res.* 2006; 141: 305-14.
14. Greenberg JL, Falkenstein M, Reuman L, Fama J, Marques L, Wilhelm S. The phenomenology of self-reported body dysmorphic disorder by proxy. *Body Image.* 2013
15. World Health Organization. *The ICD-10. Classification of mental and behavioural disorders*: World Health Organization; 1992



16. Phillips KA. Placebo-controlled study of pimozide augmentation of fluoxetine in body dysmorphic disorder. *Am J Psychiatry*. 2005;162:377-9.
17. Veale D, Anson M, Miles S, Pieta M, Da Costa Guerreiro A, Ellison N. Clinical effectiveness of Cognitive Behaviour Therapy -v- Anxiety Management for Body Dysmorphic Disorder: a randomised controlled trial. *Psychotherapy Psychosomatics* (in press)
18. Association AP. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*: American Psychiatric Association; 2013
19. Feusner JD, Phillips KA, Stein DJ. Olfactory reference syndrome: issues for DSM - V. *Depress Anxiety*. 2010;27: 592-9.
20. First MB. Desire for amputation of a limb: paraphilia, psychosis, or a new type of identity disorder. *Psychol Med*. 2005: 919-28.
21. Semiz U, Basoglu C, Cetin M, Ebrinc S, Uzun O, Ergun B. Body dysmorphic disorder in patients with borderline personality disorder: prevalence, clinical characteristics, and role of childhood trauma. *Acta Neuropsychiatrica*. 2008; 20:33-40.
22. Suzuki K, Takei N, Kawai M, Minabe Y, Mori N. Is Taijin Kyofusho a cultural bound syndrome? *Am J Psychiatry*. 2003;160: 1358.
23. Matsunaga H, Kiriike N, Matsui T, Iwasaki Y, Stein DJ. Taijin kyofusho: a form of social anxiety disorder that responds to serotonin reuptake inhibitors? *The International Journal of Neuropsychopharmacology*. 2001;4: 231-7.
24. Chowdhury AN. The definition and classification of koro. *Cult Med Psychiatry*. 1996;20: 41-65.
25. Phillips K, Gunderson C, Gruber U, Castle D. Delusions of body malodour: the olfactory reference syndrome. *Olfaction and the brain*. 2006: 334-53.

26. Tilley H. THREE CASES OF PAROSMIA; CAUSES, TREATMENT, &c  
*The Lancet*. 1895;146 (3763):907-8.
27. Potts C. Two cases of hallucination of smell. *University of Pennsylvania Medical Magazine*. 1891; 226
28. Phillips KA, Castle DJ. How to help patients with olfactory reference syndrome. *Current Psychiatry*. 2007;6: 49.
29. Alvarez WC. Practical leads to puzzling diagnoses. *Acad Med*. 1959; 34: 448.
30. Bromberg W, Schilder P. Olfactory imagination and olfactory hallucinations: an experimental and clinical study of the sense of smell in normal and in psychotic persons. *Arch Neurol Psychiatry*. 1934;32: 467.
31. Harriman P. A case of olfactory hallucination in a hypochondriacal prisoner. *The Journal of Abnormal and Social Psychology*. 1935;29: 457.
32. Pryse-Phillips W. An olfactory reference syndrome. *Acta Psychiatr Scand*. 1971;47: 484-509.
33. Begum M, McKenna P. Olfactory reference syndrome: a systematic review of the world literature. *Psychol Med*. 2011;41: 453-61.
34. Phillips KA, Menard W. Olfactory reference syndrome: demographic and clinical features of imagined body odor. *Gen Hosp Psychiatry*. 2011;33:398-406.
35. Feusner JD, Yaryura-Tobias J, Saxena S. The pathophysiology of body dysmorphic disorder. *Body Image*. 2008;5:3-12.
36. Prazeres, AM, Fontenelle, LF, Mendlowicz, MV, de Mathis, MA, Ferrão, YA, Costa de Brito, NF, et al. Olfactory Reference Syndrome as a Subtype of Body Dysmorphic Disorder. *J Clin Psychiatry*. 2010;71: 87-89