

SECTION 1

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# Assessment and Treatment

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## CHAPTER 1

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# Assessment

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## INTRODUCTION

Many people have some obsessions during their lives: it is estimated that more than one-quarter of people experience obsessions or compulsions at some time [1], and a substantial proportion of them will meet the criteria for obsessive-compulsive disorder (OCD). The lifetime prevalence of OCD is about 2–2.5%, and the annual prevalence is 1–2% among the general population [1,2]. The male to female ratio is approximately unity, with some studies finding a slightly higher prevalence in women, while in the child and adolescent populations males show a higher prevalence.

The hallmark of OCD is the presence of either obsessions or compulsions. According to the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision* (DSM-IV-TR) [3] diagnostic criteria, the obsessions are defined by the following four criteria:

1. Recurrent and persistent thoughts, impulses or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that cause marked anxiety or distress.
2. The thoughts, impulses or images are not simply excessive worries about real-life problems.
3. The person attempts to ignore or suppress such thoughts, impulses or images, or to neutralize them with some other thought or action.
4. The person recognizes that the obsessional thoughts, impulses or images are a product of his or her own mind (not imposed from without as in thought insertion).

Compulsions are defined as: '1) repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly, and 2) the behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however, these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent or are clearly excessive.' Hence, obsessions and compulsions are repetitive, unpleasant and intrusive (although recognized as own thoughts), and usually the individual considers that the obsessions or compulsions are excessive or irrational, demonstrated by the subject's attempts to resist them. While obsessions are considered phenomena that increase anxiety or discomfort, compulsions are behaviours that are aimed at reducing it.

Obsessions and compulsions are very diverse and have been grouped into various types. Table 1.1 shows the percentage of obsessions and compulsions in adult OCD samples reported in several studies. Such diversity in the clinical manifestations of OCD has led researchers to examine whether the different obsessions and compulsions seen in patients could be related and grouped into a few subtypes or dimensions; for instance, a recent meta-analysis [10] has derived four main factors: symmetry, forbidden thoughts, cleaning and hoarding. Apart from its descriptive utility, this kind of approach has heuristic value since it allows examination of the possible heterogeneity of OCD in terms of neurobiology, genetics or

**Table 1.1** Percentage of obsessions and compulsions in OCD adult samples reported in various studies.

Study	[4] ( <i>n</i> = 560)	[5] ( <i>n</i> = 354)	[6] ( <i>n</i> = 180)	[7] ( <i>n</i> = 293)	[8] ( <i>n</i> = 485)	[9] ( <i>n</i> = 343)
Obsessions						
Aggressive	31	44	56	71	58	36
Contamination	50	35	60	58	59	48
Sexual	24	15	17	13	26	10
Hoarding		18	11	29	34	12
Religious		22	22	26	31	8
Symmetry	32	36	32	48	50	42
Somatic	33	23	26	26	40	12
Compulsions						
Washing/cleaning	50	35	59	60	59	47
Checking	61	43	72	69	73	47
Repeating rituals		42	58	56	52	31
Counting	36	29	16	26	34	14
Ordering	28	29	25	43	50	22
Hoarding	18	16	13	28	36	12

Numbers in brackets refer to the relevant reference.

**Table 1.2** Components in the assessment of OCD.

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Clinical Assessment

Present obsessive-compulsive symptoms: subtype/dimensions of symptoms; severity; degree of insight

Risk of suicide

Cognitive biases and behavioural analysis (how does the patient behave in response to obsessions? What kind of obsessions elicits compulsions? How much associated anxiety is there? Is there any resistance to and control over compulsions?)

Neuropsychological dysfunctions

Conditions associated with the onset and course of the symptoms: past or present history of tics or Tourette disorder; possible history of PANDAS (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections); relationship of the disorder with reproductive events (onset or worsening of symptoms at the menarche, pregnancy and other reproductive events); relationship with life events

Course of the disorder: age at onset of the first symptoms and of the disorder, degree of stability of the subtype of symptoms (have always been the same type of symptoms?), age at first treatment, type of evolution (episodic, chronic or fluctuating, progressive improvement or worsening), degree of functional impairment

Personality traits or disorders

Differential diagnosis of other disorders and comorbidities: organic brain disorders, schizophrenia, depression, hypochondriasis, phobias, Tourette or tic disorder, obsessive-compulsive personality disorder, body dysmorphic disorders, grooming disorders (trichotillomania, skin picking disorder), hoarding, presence of other obsessive-compulsive spectrum disorders

Family assessment: family history of psychiatric disorders, degree of support from relatives, degree of understanding of the disorder by relatives, ability of the relatives to participate in the treatment

Treatment: previous drug treatments (doses and duration), previous psychological therapies, response to previous treatments (remission, partial response, no response)

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treatment response, among other aspects [11]. This issue is reviewed in detail in Chapter 6 of this book.

The assessment of OCD includes the usual elements involved in the psychiatric assessment of mental disorders, although there are also specific issues related to this condition. Relevant issues in the OCD assessment are (Table 1.2):

- the instruments for detecting and diagnosing the disorder;
- the examination of the obsessive-compulsive (OC) symptoms: the severity and type of symptoms, the level of insight, cognitive biases and behavioural analysis;

- the assessment of the suicide risk;
- the appraisal of neuropsychological functions;
- differential diagnosis;
- the presence of comorbid and related/spectrum disorders;
- the review of the course of the disorder: age of onset of OC symptoms, age at which the subject met diagnostic criteria for OCD, type of course of the disorder (e.g. episodic, chronic with or without fluctuations, progressive worsening);
- the analysis of the response to previous treatments, including both clinical outcome and degree of disability of the patient's functioning.

Given that some of the components of the assessment are examined in other chapters, the present review will focus on the detection of OCD, the clinical rating of OC symptoms, the assessment of insight and the suicide risk, the differential diagnosis, and OC related and spectrum disorders.

## DETECTING OCD

Many OCD sufferers experience shame about their symptoms or think that these will be misunderstood as 'madness', while others may even be afraid that their symptoms do actually mean that they are becoming 'mad'. For some patients these symptoms may be stigmatizing while others do not view their symptoms as a disorder, lacking insight of their morbid nature; others may think that they do not require treatment. All these beliefs and attitudes reduce the likelihood of disclosing their OCD symptoms to their physicians. A study of attitudes towards OCD symptoms [12] showed that the attitudes may vary across the different symptoms of the disorder, finding that obsessions related to harm were the most feared and unacceptable, followed by the washing behaviour, and then the checking behaviour. Therefore, fear of the meaning of the obsessions/compulsions, embarrassment about reporting them, viewing them as stigmatizing, or lacking insight into their nature, may all delay seeking help for them. This delay was evident in the study by Pinto *et al.* [7], which found that the time elapsed between the first symptoms and the first treatment was 17 years, and that between meeting the diagnostic criteria for OCD and the first treatment was 11 years.

The importance of adequate recognition of OCD is reflected in a study in which only 30.9% of severe OCD cases received a specific OCD treatment [1], although 93% of the patients reported that they were receiving mental health treatment in some kind of health setting (general medical, mental health settings, human services or complementary/alternative medicine). The data were more striking in patients with moderate OCD, since only 2.9% of this group of patients were on specific OCD treatment while 25.6% of this group were receiving mental health treatment.

These data regarding attitudes to OCD symptoms, and therefore the delay in both receiving an OCD diagnosis and starting an adequate treatment, emphasize the importance of the strategies to detect OCD.

## Screening in clinical interview

Some patients with OCD will describe their symptoms quite well, and diagnosing OCD will not be difficult provided that the physician knows the disorder. However, other patients will display other symptoms that may not be so apparently related to OCD, thereby making it more difficult to reach the diagnosis. For instance, some patients may describe general complaints of anxiety or depression, avoidance of specific situations, or excessive concerns about illnesses. In some cases, the presence of hand dermatitis may suggest repetitive hand washing due to contamination obsessions. Indeed, it is not unusual that patients see non-psychiatrist doctors such as dermatologists for dermatitis or trichotillomania, neurologists for tics, plastic surgeons for concerns about appearance (typically in body dysmorphic disorder), or other physicians for fear of cancer or HIV infection [13]. Therefore, it is useful to have some easy screening questions to detect OCD if the doctor suspects it during the clinical interview.

One of the most useful sets of screening questions are those derived from the Zohar–Fineberg Obsessive Compulsive Screen (ZF-OCS) [14], which are also recommended by the National Institute for Health and Clinical Excellence (NICE) guideline [15]:

1. Do you wash or clean a lot?
2. Do you check things a lot?
3. Is there any thought that keeps bothering you that you'd like to get rid of but can't?
4. Do your daily activities take a long time to finish?
5. Are you concerned about orderliness and symmetry?
6. Do these problems trouble you?

These questions have good sensitivity and specificity for detecting OCD. Using the Mini International Neuropsychiatric Interview (MINI, see below for full description) as the criterion, the five first questions showed a sensitivity of 94.4% and a specificity of 85.1%, with a kappa agreement of 0.66, in a sample of 92 referred dermatology patients [14].

Several OCD guidelines propose similar questions to detect OCD. The American Psychiatric Association guideline [16] suggests the following screening questions to detect OCD:

- Do you have unpleasant thoughts you can't get rid of?
- Do you worry that you might impulsively harm someone?

- Do you have to count things, or wash your hands, or check things over and over?
- Do you worry a lot about whether you performed religious rituals correctly or have been immoral?
- Do you have troubling thoughts about sexual matters? Do you need things arranged symmetrically or in a very exact order?
- Do you have trouble discarding things, so that your house is quite cluttered?
- Do these worries and behaviours interfere with your functioning at work, with your family, or in social activities?

The Canadian Psychiatric Association [17] recommends essentially two questions to detect obsessions and compulsions:

- *Obsessions*: Do you experience disturbing thoughts, images or urges that keep coming back to you and that you have trouble putting out of your head? For example, being contaminated by something, something terrible happening to you or someone you care about, or of doing something terrible?
- *Compulsions*: Do you ever have to perform a behaviour or repeat some action that doesn't make sense to you or that you don't want to do? For example, washing or cleaning excessively, checking things over and over, counting things repeatedly?

When a doctor in a clinical setting suspects OCD all these screening questions may be very useful since they are quick and easy to ask.

## Structured interviews

Apart from screening questions, OCD diagnosis may also be examined through more formal clinical interviews. In fact, the most widely used structured clinical interviews contain some questions or a section for the diagnosis of OCD. The structured clinical interviews most used for diagnosing OCD are the following.

- *Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV)*. The ADIS provides information about the presence or absence of a given diagnosis, as well as information about subthreshold symptom levels or the severity of the disorder. The ADIS-IV [18] is a semi-structured interview designed to assess the DSM anxiety disorders and other often comorbid DSM-IV disorders as well as disorders that are usually screened in research trials. The ADIS should be administered by trained clinicians. There are lifetime and child versions. With regard to OCD, it provides more information than the SCID (see below), since it assesses severity of obsessive-compulsive symptoms, insight, resistance and avoidance. It has good psychometric properties but it is time-consuming, being more used in research than in clinical practice.

- *Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I)*. The SCID-I [19,20] is a semi-structured interview that provides a broad assessment of major DSM Axis I disorders. Like the ADIS, it should be administered by experienced clinicians or trained mental health professionals. In general, SCID has good psychometric properties although the data specifically for OCD are more moderate. For instance, reliability studies (including studies for both DSM-III-R and DSM-IV) selected in the SCID website show coefficients ranging from 0.40 to 0.70 [21].
- *Composite International Diagnostic Interview (CIDI)*. The CIDI is a comprehensive, fully structured interview designed to be used by trained lay interviewers for the assessment of mental disorders according to the definitions and criteria of the *International Classification of Diseases, Tenth Revision (ICD-10)* and DSM-IV. It is intended for use in large epidemiological and cross-cultural studies as well as for clinical and research purposes [22]. The CIDI is an expansion of the Diagnostic Interview Schedule (DIS) that was developed under the auspices of the World Health Organization (WHO) to address the problem that DIS diagnoses were exclusively based on the definitions and criteria of the DSM, and therefore to generate diagnoses based on the definitions and criteria of the WHO ICD. This is a very lengthy interview since it can take an average of approximately 2 hours to administer. Therefore, using CIDI to detect OCD requires administration specifically of the module with OCD.
- *Mini International Neuropsychiatric Interview (MINI)*. The MINI was designed as a structured interview for the major Axis I psychiatric disorders in DSM-IV and ICD-10. The administration of the MINI usually takes 15–20 minutes. Although its administration is short, the MINI covers the following disorders: panic disorder, agoraphobia, social phobia, OCD, specific phobia, generalized anxiety disorder (GAD), posttraumatic stress disorder (PTSD), major depressive disorder, dysthymic disorder, suicidality, mania, alcohol dependence, alcohol abuse, drug dependence (non-alcohol), drug abuse (non-alcohol), psychotic disorder, anorexia nervosa, bulimia and antisocial personality disorder. The MINI has been shown to have good concordance with other diagnostic measures [23]. The MINI also has good interrater reliability, with  $\kappa$  coefficients ranging between 0.88 and 1.0, and good test-retest reliability, with coefficients ranging between 0.76 and 0.93 [24,25].

## CLINICAL ASSESSMENT OF OBSESSIVE-COMPULSIVE SYMPTOMS

The assessment and rating of OCD symptoms to establish the severity of the disorder has been complex due to the nature of the disorder. For instance, the severity of the disorder could be interpreted differently depending on whether the assessment

is based on the number of obsessions or compulsions, or the distress that they cause, or the degree of interference associated with them. Some subjects may have many obsessions and compulsions without these being too disabling, while other subjects with notably fewer obsessions may experience them as much more distressing or as severely interfering with their daily functioning. There are also many types of obsessions and compulsions, which are not always specified in the rating scales and which may be very particular to a given individual. In other subjects, the obsessions may not have all their usual characteristics, for instance in subjects lacking insight into their symptoms. As a result, many different scales that try to capture the severity of the OC symptoms have been developed and used for the assessment of OCD. Those used most widely are described below.

### **Yale–Brown Obsessive-Compulsive Scale**

The Yale–Brown Obsessive–Compulsive Scale (Y–BOCS) [26,27] is probably the most widely used scale for measuring the severity of obsessive-compulsive symptoms and has become the ‘gold standard’ for OCD assessment. The scale was designed to assess OCD severity independently of the number and type of the obsessive and compulsive symptoms.

The Y–BOCS includes two primary sections: the Symptom Checklist and the Severity Scale. The Symptom Checklist examines the current (within the past week) and past presence of 64 obsessions and compulsions. These obsessions and compulsions are arranged into 13 specific (plus two miscellaneous) categories. Within the obsessions, the following categories are examined: aggressive, contamination, sexual, hoarding/saving, religious, need for symmetry or exactness, somatic and miscellaneous obsessions. The categories examined for compulsions are: cleaning/washing, checking, repeating rituals, counting, ordering/arranging, hoarding/collecting and miscellaneous compulsions. A substantial number of studies on its factor structure have been carried out providing solutions with between three and five factors. A recent meta-analysis of 21 factor analytic studies [10] yielded four main factors: hoarding, symmetry, forbidden thoughts and cleaning.

The Severity Scale is a semi-structured clinician-administered scale that assesses the presence and severity of obsessive-compulsive symptoms over the past week. It contains 10 items that assess separately several features of the obsessions (five items) and compulsions (five items). The five items for obsessions and compulsions are similar: time occupied by obsessive thoughts or compulsions; interference due to obsessions or compulsions; distress related to obsessions or not performing compulsions; efforts to resist obsessions or compulsions; and degree of control over obsessions or compulsions.

In addition to these sections, there is a target symptom list and a number of supplemental items that assess symptoms or behaviours that may be present but

which are not included in the definition of OCD and are not used in the Y-BOCS scoring. The target symptom list refers to the patient's three most impairing or distressing obsessions, compulsions and avoidance behaviours. The supplemental items comprise insight, avoidance, indecisiveness, sense of responsibility, pervasive slowness and pathological doubt.

The Y-BOCS provides three summary scores: the severity score for obsessions (range 0–20), for compulsions (range 0–20), and a total score, which is the sum of all items (range 0–40). Y-BOCS scores of 0–7 are considered to indicate subclinical OCD symptoms; scores of 8–15, mild symptoms; 16–23, moderate symptoms; 24–31, severe symptoms; and 32–40, extreme severity.

The scale has good psychometric properties. The intraclass correlation coefficients reported are 0.81–0.97 for the test-retest reliability, 0.80–0.99 for the interrater reliability, and an internal consistency (Cronbach's alpha) ranging from 0.69 to 0.91. The convergent validity has been found to be good, although the discriminant validity has been more discrete, with large correlations with depression and anxiety [28–30]. The Y-BOCS has been shown to be sensitive to treatment-induced change and has become one of the most widely used scales in clinical trials [31]. There is also a self-report version, a computerized version and a child version.

A new version of the Y-BOCS, the Y-BOCS-II, has been developed [32] to improve some areas that had certain limitations. Several changes have been proposed. One of them has been to replace the item 4, 'resistance to obsessions', on the severity scale, which has a low correlation with the total severity score, by an item called 'obsession-free interval'. Another change concerns increasing the scoring range of the scoring of all items from 5-point (0–4) to 6-point (0–5), since it had been observed that the scale was less sensitive to change in patients with very high scores. In order to emphasize the assessment of avoidance behaviours, changes have also been made to two of the compulsion items ('distress if compulsions (or avoidance) prevented' and 'interference from compulsions') and one obsession item ('interference'). Finally, some modifications have been made to the wording and content of the Symptom Checklist.

### **Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS)**

The DY-BOCS [33] was developed from the theoretical rationale that OCD may be a heterogeneous disorder given its clinical diversity, and the number of genetic and treatment studies that support this view. Assessment of different symptom dimensions yields more homogeneous subgroups that may allow a better understanding of OCD's complexity and provide a valuable approach to elucidating genetic and neurobiological mechanisms underlying the heterogeneous OCD presentations, through identification of more robust endophenotypes as well as comorbidity or

treatment outcome studies [11]. The DY-BOCS was initially developed at Yale University and refined in other centres of the United States, Brazil and Japan. The DY-BOCS is based on the Y-BOCS and is composed of semi-structured scales for assessing the presence and severity of OC symptom dimensions. The DY-BOCS includes a self-report instrument and a clinician-administered instrument. The self-report instrument consists of an 88-item checklist of obsessions and compulsions, divided into six dimensions:

1. obsessions about harm due to aggression/injury/violence/natural disasters and related compulsions;
2. sexual/moral/religious obsessions and related compulsions;
3. obsessions about symmetry/'just-right' perceptions, and compulsions to count or order/arrange;
4. contamination obsessions and cleaning compulsions;
5. obsessions and compulsions related to hoarding; and
6. miscellaneous obsessions and compulsions that relate to somatic concerns and superstitions, among other symptoms.

The clinician-administered scales can be used to assess the presence and severity of each of the above symptom dimensions. Each of these scales consists of three items (frequency, distress and interference) measured on a 0–5 scale, yielding a total score ranging from 0 to 15. Further, the rater estimates the global symptom severity scale using the same three ordinal scales (frequency, distress and interference; score range 0–15) and an impairment score to assess the overall level of current impairment due to OC symptoms on a scale (range 0–15). The total global score is obtained by combining the sum of the global severity scores and the impairment score, yielding a maximum total global severity score of 30. The psychometric properties of the DY-BOCS are good: interrater reliability showed intraclass correlation coefficients greater than 0.98 for each component score of the DY-BOCS, the levels of agreement between self-report and expert ratings had Pearson correlation coefficients of 0.75–0.87 for each dimension, the internal consistency showed a Cronbach's alpha of 0.94–0.95 for each dimension, and it has also showed good construct and divergent validity in both child and adult populations [33,34].

### **Leyton Obsessional Inventory (LOI)**

The LOI [35] had been a commonly used scale before the appearance of the Y-BOCS, and the Child Version of the scale is still often used. The original LOI is a 69-item scale designed as a card sorting, or 'post-box', activity that

measures obsessional symptoms and traits in a yes/no type of response. Two other subscales scored from 0 to 3 are 'resistance' and 'interference', which should help to differentiate between obsessional symptoms and traits. Several versions of the LOI have been developed, such as a pencil-and-paper version [36], the Leyton Obsessional Inventory – Child Version [37] and a shortened 10-item version, the Lynfield Obsessional Compulsive Questionnaire [38]. Evidence for reliability and validity is limited. The main limitations found are that the questionnaire is biased towards domestic topics such as cleanliness or tidiness (in fact, the original study was done in a group of 'house-proud' mothers) while other kind of symptoms, such as aggressive or other unacceptable thoughts, are not well represented. The scale is not very sensitive to treatment-induced change, and the administration of the original version is very lengthy.

### **Maudsley Obsessional-Compulsive Inventory (MOCI)**

The MOCI [39] is a 30-item self-rated questionnaire that yields a score on four factorially derived subscales: checking, cleaning, doubting and slowness. Each item is rated dichotomously as true or false and, therefore, the total score range is 0–30. Due to the type of items included in the scale, patients with checking or cleaning symptoms will tend to score higher than will other patients with different kinds of obsessions with few symptoms or behaviours, even if they are very severe. Its reliability and validity are acceptable and it is easily administered. However, not all kinds of obsessions/compulsions are represented and its sensitivity to treatment-induced change is limited.

### **Padua Inventory (PI)**

The PI [40] is a 60-item self-report questionnaire that measures OCD severity. The design of the inventory was addressed to measure obsessional complaints and intrusive phenomena not well covered by former OCD measures. It covers common obsessional and compulsive behaviour and identifies four factors underlying OCD: impaired control of mental activities, becoming contaminated, checking behaviours, and urges and worries about losing control over motor behaviours. One of the limitations of the scale is that its items do not adequately differentiate obsessions from worries [41].

Several revisions of the scale have been published. The Padua Inventory – Washington State University Revision (PI-WSUR) [42] aims to achieve a better differentiation between worries and obsessional symptoms. It has 39 items that cover five content categories relevant to obsessions and compulsions: obsessional thoughts about harm to self/others; obsessional impulses to harm self/others; contamination

obsessions and washing rituals; checking compulsions; and dressing/grooming rituals.

The Padua Inventory – Revised (PI–R) [43] was derived from a factor-analytic study which found a five-factor structure instead of the original four factors. It is a 41-item scale that assesses five subscales: Impulses, Washing, Checking, Rumination and Precision.

A recently proposed revision, the Padua Inventory – Palatine Revision (PI–PR) [44], with 24 items, was derived from the study of the factor structure of the previous two revisions (PI–R and PI–WSUR) in OCD, anxiety and depression samples, and assesses six subscales: contamination and washing; checking; numbers; dressing and grooming; rumination; and harming obsessions and impulses.

### **Obsessive Compulsive Inventory (OCI)**

The OCI [45] was developed to address the problems inherent in the available instruments for diagnosing and determining the severity of OCD. It is a self-report inventory and consists of 42 items comprising seven subscales: washing, checking, doubting, ordering, obsessing (i.e. having obsessional thoughts), hoarding and mental neutralizing. Each item is rated on a five-point (0–4) Likert scale for both frequency and distress. Psychometric properties are generally strong, although less so for the hoarding subscale. It has been translated into several languages. A child version has recently been developed [46]. A shorter, 18-item version, the revised OCI (OCI–R) has also been developed [47]. This shorter version improves on the previous version in that it eliminates the redundant frequency scale, simplifies the scoring of the subscales, and reduces overlap across subscales, all while retaining good psychometric properties.

## **INSIGHT**

Although a main feature of OCD is that the person recognizes that the obsessional thoughts, impulses or images are a product of his or her own mind, in some cases there is poor or even a lack of insight into their symptoms. This feature that is observed in some patients is explicitly recorded in DSM-IV as a specifier. In fact, the only specifier of OCD that was established in DSM-IV is ‘with poor insight’, which is defined as: ‘when, for most of the time during the current episode, the individual does not recognize that the obsessions or compulsions are excessive or unreasonable’ [48]. The presence of overvalued ideation denotes poor insight while a degree of delusional intensity corresponds to a lack of insight. However, in cases where the ideation is considered to achieve the degree of delusional intensity, DSM-IV proposes the use of the diagnostic categories ‘delusional disorder’ or ‘psychotic disorder not otherwise specified’. However, this suggestion has been called into question since those patients who are diagnosed with delusional disorder due to

the lack of insight on their obsessions may not have a disorder that is distinct from OCD [49,50].

One issue that in some cases may become difficult is differentiating an overvalued ideation from delusions and from obsessions. Overvalued ideas may be considered as strongly held unreasonable beliefs, accompanied by strong affect. Overvalued ideas are not felt to be as intrusive as an obsession, are not considered by the individual as senseless, are egosyntonic and, hence, there is neither resistance nor struggle against them. They are held strongly, although with less than delusional intensity, and their content may not be as bizarre as in some delusions. Compared to delusions, they may lead to repeated action that is considered justified [51]. However, the concept of insight, particularly in OCD, and related concepts such as poor insight or overvalued ideation, has been the subject of different definitions and considerations. There is no unique definition for overvalued ideation, nor is there an operationalized definition. DSM-IV acknowledges the difficulty in clinical practice to distinguish an overvalued idea from a delusion, and places it on a continuum based on the intensity of the belief. While a delusion is defined as a 'false personal belief based on an incorrect inference about external reality and firmly sustained in spite of what almost everyone else believes', DSM-IV describes overvalued ideation as 'an unreasonable and sustained belief that is maintained with less than delusional intensity (i.e., the person is able to acknowledge the possibility that the belief may or may not be true). The belief is not one that is ordinarily accepted by other members of the person's culture or sub-culture' [48]. The general view is that there is a continuum from an obsession, with full or good insight at one end of the continuum, to a poorer insight with overvalued ideation in the middle, and a delusional intensity of belief at the other extreme.

The diagnostic criteria of DSM-IV require that 'at some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable' (criterion B). This criterion may be considered to reflect the insight quality of the obsessional symptoms but there is no clear and operationalized definition of what 'excessive or unreasonable' means, and this aspect may be interpreted in different ways by clinicians [50]. This lack of a definite meaning of 'excessive and unreasonable' in the diagnostic criteria of DSM-IV has led to the suggestion of deleting criterion B and expanding the specifier 'with poor insight' to include a broader range such as 'good or fair insight', 'poor insight' and 'lack of insight' in DSM-5 [50].

## Rating insight

Since insight is an important feature of OCD, its measurement has become an important issue, and several scales have been designed to assess the degree of insight. Insel and Akiskal [52] had already studied insight in 23 patients using a scale that explored different aspects, such as the perceived validity, strength of

belief in the feared consequences, resistance and bizarreness of the obsessions. Subsequently, other more formal scales have been developed.

- *Brown Assessment of Beliefs Scale (BABS)*. One of the most widely used scales for the assessment of insight is the BABS [53]. The BABS is a semi-structured, clinician-administered, seven-item scale with specific probes and five anchors for each item, designed to assess insight/degree of delusionality during the past week in a variety of psychiatric disorders. It assumes that insight exists on a continuum and that insight itself consists of a number of components. The components covered by the scale are conviction (how convinced the person is that his/her belief is accurate); perception of others' views (how certain the person is that most people think the belief makes sense); explanation of differing views (the person's explanation for the difference between his/her and others' views of the belief); fixity (whether the person could be convinced that the belief is wrong); attempt to disprove beliefs (how actively the person tries to disprove his/her belief); insight (whether the person recognizes that the belief has a psychiatric/psychological cause); and referential thinking (an optional item that assesses ideas/delusions of reference). Each of the first six items is rated from 0 to 4 and the total score is the sum of these six items. The psychometric properties of this scale are well established, with a strong internal consistency (Cronbach's  $\alpha = 0.87$ ) and strong interrater (intraclass correlation coefficient (ICC) for total = 0.96) and retest reliability (ICC for total = 0.95). The BABS is sensitive to treatment-induced changes.
- *Overvalued Ideas Scale (OVIS)*. Another scale used to measure insight is the OVIS [54]. This is a nine-item clinician-administered scale designed to quantitatively assess levels of overvalued ideas in OCD. The components that form the scale are: bizarreness, belief accuracy, fixity, reasonableness, effectiveness of compulsions, pervasiveness of belief, reasons others do not share the belief, and two items assessing stability of belief. One study [54] found the scale to show adequate internal consistency reliability (alpha coefficient = 0.88 at baseline), test-retest reliability ( $r = 0.86$ ) and interrater reliability ( $r = 0.88$ ). Moderate to high levels of convergent validity were found with measures of obsessive-compulsive symptoms, a single-item assessment of overvalued ideas and psychotic symptoms. This study also obtained medium levels of discriminant validity with respect to measures of anxiety and depression. Individuals regarded as having high OVIS scores showed greater stability of this pathology than did those with lower OVIS scores, suggesting that overvalued ideas are stable for extreme scorers.
- *Fixity of Beliefs Scale*. This is a five-item instrument designed to measure patients' degree of recognition that their obsessive-compulsive beliefs are unreasonable [55]. The items rate the patients' beliefs about the feared consequences of not performing their compulsions. The items assess: (1) patients' confidence that the harmful consequence will happen; (2) patients' recognition of the

disparity of their beliefs from conventional beliefs; (3) patients' understanding of why they have unrealistic beliefs; (4) flexibility in changing mistaken beliefs; and (5) bizarreness of obsessive ideas. Foa *et al.* [56] found that two items, presence of feared consequences and certainty that the feared consequence will occur, predicted treatment outcome for OCD.

Patients with OCD with poor insight have been reported to suffer a more severe form of the disorder, with higher Y-BOCS scores and a greater number of symptoms [57–62], although some studies have not found this association [63,64]. However, the greater severity found in some studies could be at least partially explained by the higher scores on specific items (lack of resistance and lack of control) that are assigned to these patients on the Y-BOCS scale given that poor insight involves the absence of struggle against obsessions and rituals that are not considered senseless [62]. Poor insight has also been associated with a poorer response to treatment [60,65], although not all studies have confirmed this relationship [66].

In summary, poor insight is a phenomenon that has been reported in 15–36% of obsessive patients [51,52,57–59,62,63,67,68]. In some cases, the distinction among obsessions, overvalued ideas and delusions may be complex and part of this complexity may stem from the definition of the nature of insight. A recent review [69] considers that insight could be best conceived as a dynamic mental state rather than a symptom or a component of the symptoms, and it would be independent of the disorder itself. Notwithstanding, the assessment of insight is essential because of the clinical, diagnostic and outcome issues that may be associated with poor or lack of insight.

## ASSESSMENT OF THE RISK OF SUICIDE

Traditionally, suicidal behaviour in OCD has been estimated to be infrequent. Patients with OCD have classically been considered to be at low risk for suicide, with reports of completed suicides in less than 1% [70], and a history of suicide attempts in 3–4% of patients [71–73]. However, more recent studies have found higher rates of suicidal behaviour, suggesting that 10–27% of those suffering from an OCD may attempt suicide at least once in their life [74–76]. Kamath *et al.* [75] have reported that OCD is associated with high rates of both suicide attempts (27%) and suicidal ideation (59% of patients at any time in their life). A Brazilian study [76] found that 46% of OCD patients surveyed had suicidal thoughts, 20% had made suicidal plans and 10% had attempted suicide. The Brown Longitudinal Obsessive Compulsive Study [7] has studied 293 OCD patients and found a reported rate of suicidal ideation in 52% of them, while a history of at least one suicide attempt was found in 15% of them. Another study [77] followed-up 216 OCD patients for 1 to 6 years and found persistent suicidal ideation in 8% of the sample (persistent defined as being present in three consecutive assessments, each carried out every

3 months), while 5% of the sample attempted suicide and two patients (0.9%) actually committed suicide during the follow-up. The most frequent factor found to be associated with suicidal behaviour has been severity of depression. Other factors found in studies have been hopelessness, being non-married, and symmetry/ordering obsessions and compulsions. Some limitations of these studies are that many of them have recorded the information retrospectively and consequently only a few factors have been examined for their association with suicidal behaviour.

Suicidality is not usually related to compulsive behaviours. When suicidal ideation is present, it may be related to hopelessness due to a chronic and highly invalidating OCD disorder, or to the presence of comorbid disorders such as depression, substance abuse/dependence (including alcohol), or other mental disorders with a high risk of suicide. Although the rates for completed suicide in OCD are lower than those found in some other mental disorders such as depression or schizophrenia, the risk of suicide in OCD deserves specific evaluation. In fact, suicidal ideation and suicide attempts are more frequent among OCD patients than in the general population and they may be the steps prior to a completed suicide.

## DIFFERENTIAL DIAGNOSIS, COMORBIDITIES AND RELATED DISORDERS

The assessment of OCD involves screening for the presence of other disorders. Several disorders may exhibit obsessive or compulsive symptoms as part of their manifestations, and a differential diagnosis from OCD must therefore be carried out. Furthermore, some of these disorders show a high comorbidity with OCD and their detection is important. A subgroup of these disorders that show either certain similarities or comorbidity with OCD have been included within the term 'OC spectrum disorders'.

Although distinct from OCD, they seem to be related and it has been proposed that they could be best considered as belonging to an OC spectrum [78]. The disorders that have been ascribed to the OC spectrum are diverse and have numbered from 10 to 20. Some of these disorders are more neurological disorders – such as Tourette disorder or autism – while others are associated with bodily preoccupation – such as body dysmorphic disorder, anorexia nervosa or hypochondriasis – and even others belong to impulse control disorders –such as pathological gambling, kleptomania or trichotillomania [79]. More recently, Phillips *et al.* [80], in an article that was commissioned by the DSM-V Anxiety, Obsessive-Compulsive Spectrum, Posttraumatic, and Dissociative Disorders Work Group, have proposed that these disorders be considered according to three groups:

1. motoric or lower-order repetitive behaviours (e.g. trichotillomania, skin-picking disorder);

2. cognitive or higher-order OC symptoms (e.g. body dysmorphic disorder, hypochondriasis); and
3. impulse control disorders or behavioural addictions (e.g. pathological gambling).

The assessment of the presence of OC spectrum disorders is relevant because of their similarities with OCD which may pose issues in the differential diagnosis, or their comorbidity with OCD that some of them have.

The differential diagnosis of OCD includes organic brain disorders, schizophrenia, depression, hypochondriasis, phobias, Tourette disorder and tic disorders, obsessive-compulsive personality disorder, body dysmorphic disorder and hoarding.

### **Organic brain disorders**

As is the case with other mental symptoms, the clinician should rule out brain diseases that may underlie OC symptoms. The presence of OC symptoms may result from brain disturbances, either focal or diffuse, that can affect brain areas or circuits involved in OCD. In fact, the hypothesis that a biological substrate might underlie obsessions and compulsions was supported by the observation of the presence of OC symptoms in patients affected by the lethargic encephalitis pandemic between 1917 and 1926 [81,82]. Currently, different brain areas and circuits have been related to OCD, more specifically the cortico-subcortical-thalamic-cortical circuits, particularly the orbitofrontal circuit that involves the orbitofrontal cortex, areas of the basal ganglia and thalamus. Diseases or lesions that may affect these areas and circuits or others related to them, may result in obsessive symptoms either as one of the first expressions of an underlying disease or as a residual symptom after the injury. OC symptoms have been reported in different kinds of injuries and diseases [83], such as traumatic brain injury [84], cerebrovascular accidents [85,86], brain tumours [87], temporal lobe epilepsy (in 14–22% of patients with this disease) [88,89], frontotemporal dementia [90,91], progressive supranuclear palsy [92], neuroacanthocytosis [93], brain infections (encephalitis and postencephalitic states, acquired immunodeficiency syndrome) [94], manganese intoxication [95] or brain surgery [96]. Huntington's chorea may also show OC symptoms in 22–50% of the cases, and this may be difficult to distinguish from primary OCD [97–99]. Usually, these neurological disorders will have associated specific neurological symptoms – apart from the obsessional ones – which will help in making the differential diagnosis.

One particular case concerns patients with Parkinson's disease who are treated with dopamine agonists and who may show compulsive behaviours that are usually linked to impulse control disorders. A recent study of 3090 patients with Parkinson's disease found that 17% of those taking dopamine agonists had at least one

impulse control disorder (gambling, compulsive sexual behaviour, compulsive buying, binge-eating disorder) [100]. The mechanism has been related to dysfunctions in reward processing [101].

## Schizophrenia

The distinction between OCD and schizophrenia is not usually difficult to make since subjects with OCD usually recognize the absurdity of their symptoms, even in some cases in which the obsessional thoughts and the behaviours associated with them may be quite bizarre. In patients with OCD with poor insight the distinction may be more complex, but the absence of typical schizophrenic features can help in the differentiation. There is another group of patients in whom the initial manifestations are OC symptoms but who eventually go on to develop typical symptoms of schizophrenia. Furthermore, OCD will be comorbid in a substantial group of patients with schizophrenia. Several studies [102–109] have found that about 25–35% of subjects with schizophrenia have OC symptoms, and even around 15–25% meet criteria for OCD, although the figures differ among studies. Although antipsychotic treatment, particularly clozapine, may be a factor that accounts for the appearance of OC symptoms in some cases, in others the comorbidity between these two disorders cannot be explained by these drugs.

## Depression

Depression, either as a full-blown syndrome or in the form of depressive symptoms, is a condition very often associated with OCD. It has been estimated that about 60–70% of OCD patients may have a comorbid lifetime diagnosis of major depression [7,102]. In many cases depressive symptoms are related to the distress and disability due to OCD, which is the primary disorder. Reciprocally, obsessive symptoms may also appear in about 20% of cases of a primary depressive disorder [110,111]. In those patients in whom both the obsessional symptoms and depressive symptoms appear it may be difficult to distinguish between a primary OCD and secondary obsessions due to a depressive disorder. Depression as a primary diagnosis usually has a later onset than OCD, and show an episodic course, with a remission of the obsessional symptoms during the interepisodic periods; the ruminations are more centred on past events (whereas in OCD concerns are more focused on present or future threats) and are more egosyntonic.

## Hypochondriasis

Fear of becoming ill is a common preoccupation in both OCD and hypochondriasis. But patients with OCD tend to have less intensity in their conviction of having

an illness and they may have other obsessions and rituals not related to bodily health. In hypochondriasis the beliefs are more egosyntonic and subjects may experience somatic sensations. About 10% of OCD patients could also meet criteria for hypochondriasis [112,113].

## **Phobias**

In some cases OC symptoms, particularly contamination obsessions and fear of losing control, may be confounded with phobias. Genuine phobias are usually more circumscribed to specific stimuli, there are no rituals associated, and the avoidance behaviours are very efficacious in relieving anxiety.

## **Tourette disorder and tic disorders**

These disorders are considered to be closely related to OCD. About 30% of OCD patients have comorbid lifetime tic disorders [114]. With Tourette disorder, OC symptoms are present in about 40% of the patients and OCD in 20% of them [115]. It is usually easy to distinguish between tics and compulsions, but it may be more difficult in some complex tics. OCD compulsions usually have an obsessional thought associated with them and are more goal-directed, whereas the premonitory experiences in tics are more sensorial or perceived as urges and with fewer associated cognitions [116,117]. Finally, patients with both OCD and tics may represent a particular subgroup since several differences have been reported in this group, such as an earlier age of onset [118], feelings of incompleteness, a need for things to be 'just right', and more aggressive and symmetry obsessions [115,119].

## **Obsessive-compulsive personality disorder (OCPD)**

Obsessive-compulsive personality disorder is characterized by excessive preoccupation with orderliness, perfectionism, and mental and interpersonal control, symptoms that may resemble the compulsivity in OCD. There is also a certain comorbidity between OCD and OCPD: about 30% of patients with OCD also show OCPD [7,120,121] and OCD is present in approximately 20% of OCPD subjects [122]. An important difference between OCD and OCPD is that in OCD the symptoms are experienced as egodystonic (i.e. not acceptable by the individual) whereas in OCPD they are egosyntonic. Further, the degree of functional impairment in OCPD is significantly lower than in OCD.

## **Body dysmorphic disorder (BDD)**

In BDD repetitive behaviours may emerge in response to an excessive preoccupation with an imagined defect in appearance or a slight physical anomaly [123].

About one-third of subjects with BDD will meet OCD criteria [124]. Insight is poorer in BDD than in OCD, there is no feeling of incompleteness, and the behaviour is related to the preoccupations about appearance.

## Hoarding

Although hoarding is a typical OCD symptom that is present in 15–40% of OCD patients [5,55,125], it may also appear independently of OCD. This has led to the proposal that hoarding syndrome could be considered as a different disorder [126,127]. In those cases in which hoarding is related to OCD, this behaviour can be explained as a consequence of the patients' obsessions (e.g. items not discarded due to fear of catastrophic consequences, complicated rituals before discarding items that lead to avoidance of discarding), the hoarded items may be more bizarre, and the behaviour is more usually experienced as egodystonic [128]. Hoarding behaviour may also be associated with severe neurological conditions (e.g. dementia, brain lesions) and other psychiatric disorders (e.g. alcoholism, schizophrenia, schizotypal or obsessive personality disorders) [129].

## Other disorders

Other psychiatric disorders may also show obsessive symptoms or compulsivity, like anxiety, impulse control disorders or behavioural addictions (e.g. pathological gambling, compulsive buying), autism, or disorders related to grooming, such as trichotillomania or skin picking disorders. In general, the specific behaviours and symptoms associated with the definition of these conditions will permit the differential diagnosis from OCD.

## CONCLUSIONS

The assessment of OCD follows the general procedure that is carried out in other disorders, but there are also specific characteristics to be examined which may be relevant to treatment decisions and to general management of an individual OCD case. As studies have found that the time elapsed between the first OCD symptoms and the diagnosis is very long, screening procedures for the detection of OCD can be used in the general assessment of cases in which OCD may be suspected. Apart from the more formal structured clinical interviews, several researchers have proposed a few easy questions to detect the disorder. Early detection may help to prevent functional impairment and improve the long-term prognosis.

OCD is a complex disorder with very different clinical manifestations, courses and outcomes, which has led to discussion of the possible heterogeneity of the disorder. Studies have identified a number of characteristics (Table 1.2) that are

useful to consider when assessing an OCD patient. Regarding OC symptoms, many clinical scales have been designed to capture the severity and diversity of them. Among the clinical features, the assessment of insight is one of the most important since it may have a critical bearing on the adherence to treatment and outcome. Although suicide in OCD is less common than in some other mental disorders, the assessment of this risk should always be included. The relationship of OCD to other disorders is also complex. Differential diagnosis must be carried out for a number of organic and mental disorders but OCD can also be comorbid with some of them. Indeed, the identification of these disorders is essential for an adequate approach. Other characteristics reviewed in other chapters that deserve to be examined are those related to previous treatments and the previous course of the disorder. The assessment of these clinical factors and comorbid conditions may be essential since they have been associated with different clinical clusters, neurobiological factors and outcomes, and the assessment of these features may allow a more personalized management.

## REFERENCES

1. Ruscio AM, Stein DJ, Chiu WT, Kessler RC. The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication. *Mol Psychiatry* 2010;**15**:53–63.
2. Robins LN, Helzer JE, Weissman MM *et al*. Lifetime prevalence of specific psychiatric disorders in three sites. *Arch Gen Psychiatry* 1984;**41**:949–958.
3. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th edn, Text Revision. Washington, DC: American Psychiatric Association, 2000.
4. Rasmussen SA, Eisen JL. Clinical and epidemiologic findings of significance to neuropharmacologic trials in OCD. *Psychopharmacol Bull* 1988;**24**:466–470.
5. Mataix-Cols D, Rauch SL, Manzo PA, Jenike MA, Baer L. Use of factor-analyzed symptom dimensions to predict outcome with serotonin reuptake inhibitors and placebo in the treatment of obsessive-compulsive disorder. *Am J Psychiatry* 1999;**156**:1409–1416.
6. Cavallini MC, Di Bella D, Siliprandi F, Malchiodi F, Bellodi L. Exploratory factor analysis of obsessive-compulsive patients and association with 5-HTTLPR polymorphism. *Am J Med Genet* 2002;**114**:347–353.
7. Pinto A, Mancebo MC, Eisen JL, Pagano ME, Rasmussen SA. The Brown Longitudinal Obsessive Compulsive Study: clinical features and symptoms of the sample at intake. *J Clin Psychiatry* 2006;**67**:703–711.
8. Pinto A, Greenberg BD, Grados MA *et al*. Further development of YBOCS dimensions in the OCD Collaborative Genetics study: symptoms vs. categories. *Psychiatry Res* 2008;**160**:83–93.
9. Matsunaga H, Hayashida K, Kiriike N, Maebayashi K, Stein DJ. The clinical utility of symptom dimensions in obsessive-compulsive disorder. *Psychiatry Res* 2010;**180**:25–29.

10. Bloch MH, Landeros-Weisenberger A, Rosario MC, Pittenger C, Leckman JF. Meta-analysis of the symptom structure of obsessive-compulsive disorder. *Am J Psychiatry* 2008;**165**:1532–1542.
11. Mataix-Cols D, Rosario-Campos MC, Leckman JF. A multidimensional model of obsessive-compulsive disorder. *Am J Psychiatry* 2005;**162**:228–238.
12. Simonds LM, Thorpe SJ. Attitudes toward obsessive-compulsive disorders: an experimental investigation. *Soc Psychiatry Psychiatr Epidemiol* 2003;**38**:331–336.
13. Heyman I, Mataix-Cols D, Fineberg NA. Obsessive-compulsive disorder. *Brit Med J* 2006;**333**:424–429.
14. Fineberg NA, O'Doherty C, Rajagopal S, Reddy K, Banks A, Gale TM. How common is obsessive-compulsive disorder in a dermatology outpatient clinic? *J Clin Psychiatry* 2003;**64**:152–155.
15. National Institute for Health and Clinical Excellence. Obsessive-compulsive disorder: core interventions in the treatment of obsessive-compulsive disorder and body dysmorphic disorder. Clinical guideline 31. London: NICE, 2006.
16. American Psychiatric Association. Practice guideline for the treatment of patients with obsessive-compulsive disorder. Arlington, VA: American Psychiatric Association, 2007.
17. Canadian Psychiatric Association. Clinical Practice Guidelines. Management of Anxiety Disorders. 6. Obsessive-compulsive disorder. *Can J Psychiatry* 2006;**51**(Suppl. 2):43s–49s.
18. Brown TA, Di Nardo PA, Barlow DH. *Anxiety Disorders Interview Schedule for DSM-IV*. San Antonio, TX: The Psychological Corporation, 1994.
19. First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-CV)*. Washington, DC: American Psychiatric Press, Inc., 1996.
20. First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition (SCID-I/P)*. New York: Biometrics Research, New York State Psychiatric Institute, 2002.
21. Official website for Structured Clinical Interview for DSM disorders (SCID). What is the Reliability of the SCID-I? [http://www.scid4.org/psychometric/scidI\\_reliability.html](http://www.scid4.org/psychometric/scidI_reliability.html). Accessed 4 August 2010.
22. Kessler RC, Ustun TB. The World Mental Health (WMH) Survey Initiative version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *Int J Methods Psychiatr Res* 2004;**13**:93–121.
23. Lecrubier Y, Sheehan DV, Weiller E *et al*. The Mini International Neuropsychiatric Interview (MINI): a short diagnostic structured interview: reliability and validity according to the CIDI. *Eur Psychiatry* 1997;**12**:224–231.
24. Sheehan DV, Lecrubier Y, Sheehan KH *et al*. The validity of the Mini International Neuropsychiatric Interview (MINI) according to the SCID-P and its reliability. *Eur Psychiatry* 1997;**12**:232–241.
25. Sheehan DV, Lecrubier Y, Sheehan KH *et al*. The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 1998;**59**(Suppl. 20):22–33.
26. Goodman WK, Price LH, Rasmussen SA *et al*. The Yale-Brown Obsessive Compulsive Scale: I. Development, use, and reliability. *Arch Gen Psychiatry* 1989;**46**:1006–1011.

27. Goodman WL, Price LH, Rasmussen SA, Mazure C. The Yale-Brown obsessive compulsive scale (Y-BOCS): Validity. *Arch Gen Psychiatry* 1989;**46**:1012–1016.
28. Taylor S. Assessment of obsessive-compulsive disorder. In: Swinson RP, Antony MM, Rachman S, Richter MA (eds), *Obsessive-Compulsive Disorder: Theory, Research and Treatment*. New York: Guilford Press, 1998; pp. 229–257.
29. St Clare T. Assessment procedures. In: Menzies RG, De Silva P (eds), *Obsessive-Compulsive Disorder: Theory, Research and Treatment*. Chichester: John Wiley & Sons, Ltd, 2003; pp. 239–257.
30. Mataix-Cols D, Fullana MA, Alonso P, Menchón JM, Vallejo J. Convergent and discriminant validity of the Yale-Brown Obsessive-Compulsive Scale Symptom Checklist. *Psychother Psychosom* 2004;**73**:190–196.
31. Tolin DF, Abramowitz JS, Diefenbach GJ. Defining response in clinical trials for obsessive-compulsive disorder: a signal detection analysis of the Yale-Brown obsessive compulsive scale. *J Clin Psychiatry* 2005;**66**:1549–1557.
32. Storch EA, Rasmussen SA, Price LH, Larson MJ, Murphy TK, Goodman WK. Development and psychometric evaluation of the Yale-Brown Obsessive-Compulsive Scale, Second Edition. *Psychol Assess* 2010;**22**:223–232.
33. Rosario-Campos MC, Miguel EC, Quatrano S *et al*. The Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS): an instrument for assessing obsessive-compulsive symptom dimensions. *Mol Psychiatry* 2006;**11**:495–504.
34. Pertusa A, Fernández de la Cruz L, Alonso P, Menchón JM, Mataix-Cols D. Independent validation of the Dimensional Yale-Brown Obsessive Compulsive Scale (DY-BOCS). *European Psychiatry* 12 May 2011 (epub ahead of print). Accessed at <http://dx.doi.org/10.1016/j.eurpsy.2011.02.010>, on 26th January 2012.
35. Cooper J. The Leyton obsessional inventory. *Psychol Med* 1970;**1**:48–64.
36. Snowdon J. A comparison of written and postbox forms of the Leyton Obsessional Inventory. *Psychol Med* 1980;**10**:165–170.
37. Berg CJ, Rapoport JL, Flament M. The Leyton Obsessional Inventory – Child Version. *J Am Acad Child Psychiatry* 1986;**25**:84–91.
38. Allen JJ, Tune GS. The Lynfield Obsessional/Compulsive Questionnaires. *Scott Med J* 1975;**20**(1 Suppl.):21–24.
39. Hodgson RJ, Rachman S. Obsessive compulsive complaints. *Behav Res Ther* 1977;**15**:389–395.
40. Sanavio E. Obsessions and compulsions: the Padua inventory. *Behav Res Ther* 1988;**26**:169–177.
41. Freeston MH, Ladouceur R, Rhéaume J, Letarte H, Gagnon F, Thibodeau N. Self-report of obsessions and worry. *Behav Res Ther* 1994;**32**:29–36.
42. Burns GL, Keortge SG, Formea GM, Sternberger LG. Revision of the Padua Inventory of obsessive compulsive disorder symptoms: distinctions between worry, obsessions, and compulsions. *Behav Res Ther* 1996;**34**:163–173.
43. van Oppen P, Hoekstra RJ, Emmelkamp PMG. The structure of obsessive-compulsive symptoms. *Behav Res Ther* 1995;**33**:15–23.
44. Gönner S, Ecker W, Leonhart R. The Padua Inventory: do revisions need revision? *Assessment* 2010;**17**:89–106.
45. Foa EB, Kozak MJ, Salkovskis PM, Coles ME, Amir N. The validation of a new obsessive-compulsive disorder scale: the obsessive-compulsive inventory. *Psychol Assess* 1998;**10**:206–214.

46. Foa EB, Coles M, Huppert JD, Pasupuleti RV, Franklin ME, March J. Development and validation of a child version of the obsessive compulsive inventory. *Behav Ther* 2010;**41**:121–132.
47. Foa EB, Huppert JD, Leiberg S *et al.* The Obsessive-Compulsive Inventory: development and validation of a short version. *Psychol Assess* 2002;**14**:485–496.
48. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th edn. Washington, DC: American Psychiatric Association, 1994.
49. Stein DJ, Denys D, Gloster AT *et al.* Obsessive-compulsive disorder: diagnostic and treatment issues. *Psychiatr Clin North Am* 2009;**32**:665–685.
50. Leckman JF, Damiaan Denys D, Blair Simpson H *et al.* Obsessive-compulsive disorder: a review of the diagnostic criteria and possible subtypes and dimensional specifiers for DSM-V *Depress Anx* 2010;**27**:507–527.
51. Veale D. Over-valued ideas: A conceptual analysis. *Behav Res Ther* 2002;**40**:383–400.
52. Insel TR, Akiskal HS. Obsessive-compulsive disorder with psychotic features: a phenomenologic analysis. *Am J Psychiatry* 1986;**143**:1527–1533.
53. Eisen JL, Phillips KA, Baer L, Beer DA, Atala KP, Rasmussen SA. The Brown Assessment of Beliefs Scale – reliability and validity. *Am J Psychiatry* 1998;**155**:102–108.
54. Neziroglu F, McKay D, Yaryura-Tobias JA, Stevens KP, Todaro J. The Overvalued Ideas Scale: development, reliability and validity in obsessive-compulsive disorder. *Behav Res Ther* 1999;**37**:881–902.
55. Foa EB, Kozak MJ, Goodman WK, Jenike MA, Hollander E, Rasmussen S. DSM IV field trial: obsessive-compulsive disorder. *Am J Psychiatry* 1995;**152**: 90–96.
56. Foa EB, Abramowitz JS, Franklin ME, Kozak MJ. Feared consequences, fixity of belief, and treatment outcome in patients with obsessive-compulsive disorder. *Behav Ther* 1999;**30**:717–724.
57. Matsunaga H, Kirriike N, Matsui T, *et al.* Obsessive-compulsive disorder with poor insight. *Compr Psychiatry* 2002;**43**:150–157.
58. Türksöy N, Tükel R, Özdemir O, Karali A. Comparison of clinical characteristics in good and poor insight obsessive-compulsive disorder. *J Anxiety Disord* 2002;**16**:413–423.
59. De Berardis D, Campanella D, Gambi F *et al.* Insight and alexithymia in adult outpatients with obsessive compulsive disorder. *Eur Arch Psychiatry Clin Neurosci* 2005;**255**:350–358.
60. Ravi V, Kishore R, Samar R, Janardhan YC, Reddy CR, Chandrasekhar K. Clinical characteristics and treatment response in poor and good insight obsessive-compulsive disorder. *Eur Psychiatry* 2004;**19**:202–208.
61. Solyom L, DiNicola VF, Phil M, Sookman D, Luchins D. Is there an obsessive psychosis? Aetiological and prognostic factors of an atypical form of obsessive-compulsive neurosis. *Can J Psychiatry* 1985;**30**:372–380.
62. Alonso P, Menchón JM, Segalàs C *et al.* Clinical implications of insight assessment in obsessive-compulsive disorder. *Compr Psychiatry* 2008;**49**:305–312.
63. Marazziti D, Dell’Osso L, Di Nasso E *et al.* Insight in obsessive-compulsive disorder: a study of an Italian sample. *Eur Psychiatry* 2002;**17**:407–410.
64. Eisen JL, Phillips KA, Coles ME, Rasmussen SA. Insight in obsessive-compulsive disorder and body dysmorphic disorder. *Compr Psychiatry* 2004;**45**:10–15.
65. Catapano F, Sperandeo R, Perris F, Lanzaro M, Maj M. Insight and resistance in patients with obsessive-compulsive disorder. *Psychopathology* 2001;**34**:62–68.

66. Eisen JL, Rasmussen SA, Phillips KA *et al.* Insight and treatment outcome in obsessive-compulsive disorder. *Compr Psychiatry* 2001;**42**:494–497.
67. Eisen JL, Rasmussen SA. Obsessive-compulsive disorder with psychotic features. *J Clin Psychiatry* 1993;**54**:373–398.
68. Foa EB, Kozak MJ, Goodman WK, Hollander E, Jenike MA, Rasmussen SA. DSM-IV field trial: obsessive-compulsive disorder. *Am J Psychiatry* 1995;**152**:90–96.
69. Marková IS, Jaafari N, Berrios GE. Insight and obsessive-compulsive disorder: a conceptual analysis. *Psychopathology* 2009;**42**:277–282.
70. Goodwin DW, Guze SB, Robins E. Follow-up studies in obsessional neurosis. *Arch Gen Psychiatry* 1969;**20**:182–187.
71. Coryell W. Obsessive-compulsive disorder and primary unipolar depression. Comparisons of background, family history, course and mortality. *J Nerv Ment Dis* 1981;**169**:220–224.
72. Koran LM, Thienemann ML, Davenport R. Quality of life for patients with obsessive-compulsive disorder. *Am J Psychiatry* 1996;**153**:783–788.
73. Khan A, Leventhal RM, Khan S, Brown WA. Suicide risk in patients with anxiety disorders: a meta-analysis of the FDA database. *J Affect Disord* 2002;**68**:183–190.
74. Torres AR, Prince MJ, Bebbington PE *et al.* Obsessive-compulsive disorder: prevalence, comorbidity, impact, and help-seeking in the British National Psychiatric Morbidity Survey of 2000. *Am J Psychiatry* 2006;**163**:1978–1985.
75. Kamath P, Reddy YC, Kandavel T. Suicidal behavior in obsessive-compulsive disorder. *J Clin Psychiatry* 2007;**68**:1741–1750.
76. Torres AR, de Abreu Ramos-Cerqueira AT, Torresan RC, de Souza Domingues M, Hercos AC, Guimaraes AB. Prevalence and associated factors for suicidal ideation and behaviors in obsessive-compulsive disorder. *CNS Spectrums* 2007;**12**:771–778.
77. Alonso P, Segalàs C, Real E *et al.* Suicide in patients treated for obsessive-compulsive disorder: a prospective follow-up study. *J Affect Disord* 2010;**124**:300–308.
78. Hollander E. *Obsessive-Compulsive Related Disorders*. Washington, DC: American Psychiatric Press, 1993.
79. Hollander E. Treatment of obsessive-compulsive spectrum disorders with SSRIs. *Br J Psychiatry Suppl* 1998;**173**(Suppl. 35):7–12.
80. Phillips KA, Stein DJ, Rauch SL *et al.* Should an obsessive-compulsive spectrum grouping of disorders be included in DSM-V? *Depress Anxiety* 2010;**27**:528–555.
81. Mayer-Gross W, Steiner G. Encephalitis lethargica in der Selbstbeobachtung. *Z ges Neurol Psychiat* 1921;**73**:283–286.
82. Schilder P. The organic background of obsessions and compulsions. *Am J Psychiatry* 1938;**94**:1397–1416.
83. Coetzer BR. Obsessive-compulsive disorder following brain injury: a review. *Int J Psychiatry Med* 2004;**34**:363–377.
84. Grados MA. Obsessive-compulsive disorder after traumatic brain injury. *Int Rev Psychiatry* 2003;**15**:350–358.
85. Rodrigo Escalona P, Adair JC, Roberts BB, Graeber DA. Obsessive-compulsive disorder following bilateral globus pallidus infarction. *Biol Psychiatry* 1997;**42**:410–412.
86. Carmin CN, Wiegartz PS, Yunus U, Gillock KL. Treatment of late-onset OCD following basal ganglia infarct. *Depress Anxiety* 2002;**15**:87–90.

87. Mordecai D, Shaw RJ, Fisher PG, Mittelstadt PA, Guterman T, Donaldson SS. Case study: suprasellar germinoma presenting with psychotic and obsessive-compulsive symptoms. *J Am Acad Child Adolesc Psychiatry* 2000;**39**:116–119.
88. Isaacs KL, Philbeck JW, Barr WB, Devinsky O, Alper K. Obsessive-compulsive symptoms in patients with temporal lobe epilepsy. *Epilepsy Behav* 2004;**5**:569–574.
89. Monaco F, Cavanna A, Magli E *et al*. Obsessionality, obsessive-compulsive disorder, and temporal lobe epilepsy. *Epilepsy Behav* 2005;**7**:491–496.
90. Mendez MF, Perryman KM, Miller BL, Swartz JR, Cummings JL. Compulsive behaviors as presenting symptoms of frontotemporal dementia. *J Geriatr Psychiatry Neurol* 1997;**10**:154–157.
91. Rosso SM, Roks G, Stevens M *et al*. Complex compulsive behaviour in the temporal variant of frontotemporal dementia. *J Neurol* 2001;**248**:965–970.
92. O’Sullivan SS, Djamshidian A, Ahmed Z *et al*. Impulsive-compulsive spectrum behaviors in pathologically confirmed progressive supranuclear palsy. *Mov Disord* 2010;**25**:638–642.
93. Wyszynski B, Merriam A, Medalia A, Lawrence C. Choreoacanthocytosis. *Neuropsychiatry Neuropsychol Behav Neurol* 1989;**2**:137–144.
94. McDaniel JS, Johnson KM. Obsessive-compulsive disorder in HIV disease. Response to fluoxetine. *Psychosomatics* 1995;**36**:147–150.
95. Bowler RM, Mergler D, Sassine MP, Larribe F, Hudnell K. Neuropsychiatric effects of manganese on mood. *Neurotoxicology* 1999;**20**:367–378.
96. Caplan R, Comair Y, Shewmon DA, Jackson L, Chugani HT, Peacock WJ. Intractable seizures, compulsions, and coprolalia: a pediatric case study. *J Neuropsychiatry* 1992;**4**:315–319.
97. Cummings JL, Cunningham K. Obsessive-compulsive disorder in Huntington’s disease. *Biol Psychiatry* 1992;**31**:263–270.
98. Marder KS, Zhao H, Myers R *et al*. (Huntington Study Group). Rate of functional decline in Huntington’s disease. *Neurology* 2000;**54**:452–458.
99. Anderson KE, Louis ED, Stern Y, Marder KS. Cognitive correlates of obsessive and compulsive symptoms in Huntington’s disease. *Am J Psychiatry* 2001;**158**:799–801.
100. Weintraub D, Koester J, Potenza MN *et al*. Impulse control disorders in Parkinson disease: a cross-sectional study of 3090 patients. *Arch Neurol* 2010;**67**:589–595.
101. Voon V, Pessiglione M, Brezing C *et al*. Mechanisms underlying dopamine-mediated reward bias in compulsive behaviors. *Neuron* 2010;**65**:135–142.
102. Karno M, Golding JM, Sorenson SB, Burnam MA. The epidemiology of obsessive-compulsive disorder in five US communities. *Arch Gen Psychiatry* 1988;**45**:1094–1099.
103. Berman I, Merson A, Viegner B, Losonczy MF, Pappas D, Green AI. Obsessions and compulsions as a distinct cluster of symptoms in schizophrenia: a neuropsychological study. *J Nerv Ment Dis* 1998;**186**:150–156.
104. Dominguez RA, Backman KE, Lugo SC. Demographics, prevalence and clinical features of the schizo-obsessive subtype of schizophrenia. *CNS Spectrums* 1999;**12**:50–56.
105. Poyurovsky M, Fuchs C, Weizman A. Obsessive-compulsive disorder in patients with first-episode schizophrenia. *Am J Psychiatry* 1999;**156**:1998–2000.

106. Bermanzohn PC, Porto L, Arlow PB, Pollack S, Stronger R, Siris SG. Hierarchical diagnosis in chronic schizophrenia: a clinical study of co-occurring syndromes. *Schizophr Bull* 2000;**26**:517–525.
107. Tibbo P, Kroetsch M, Chue P, Warneke L. Obsessive-compulsive disorder in schizophrenia. *J Psychiatr Res* 2000;**34**:139–146.
108. Lysaker PH, Bryson GJ, Marks KA, Greig TC, Bell MD. Association of obsessions and compulsions in schizophrenia with neurocognition and negative symptoms. *J Neuropsychiatry Clin Neurosci* 2002;**14**:449–453.
109. Ohta M, Kokai M, Morita Y. Features of obsessive-compulsive disorder in patients primarily diagnosed with schizophrenia. *Psychiatry Clin Neurosci* 2003;**57**:67–74.
110. Videbech T. The psychopathology of anancastic endogenous depression. *Acta Psychiatr Scand* 1975;**52**:336–373.
111. Chen YW, Dilsaver SC. Comorbidity for obsessive-compulsive disorder in bipolar and unipolar disorders. *Psychiatry Res* 1995;**59**:57–64.
112. Abramowitz JS, Brigidi BD, Foa EB. Health concerns in patients with obsessive-compulsive disorder. *J Anxiety Disord* 1999;**13**:529–539.
113. Bienvenu OJ, Samuels JF, Riddle MA *et al*. The relationship of obsessive-compulsive disorder to possible spectrum disorders: results from a family study. *Biol Psychiatry* 2000;**48**:287–293.
114. Richter MA, Summerfeldt LJ, Antony MM, Swinson RP. Obsessive-compulsive spectrum conditions in obsessive-compulsive disorder and other anxiety disorders. *Depress Anxiety* 2003;**18**:118–127.
115. Leckman JF, Walker DE, Goodman WK, Pauls DL, Cohen DJ. “Just right” perceptions associated with compulsive behavior in Tourette’s syndrome. *Am J Psychiatry* 1994;**151**:675–680.
116. Leckman JF, Walker DE, Cohen DJ. Premonitory urges in Tourette’s syndrome. *Am J Psychiatry* 1993;**150**:98–102.
117. Miguel EC, Coffey BJ, Baer L *et al*. Phenomenology of intentional repetitive behaviors in obsessive-compulsive disorder and Tourette’s disorder. *J Clin Psychiatry* 1995;**56**:246–255.
118. Rosario-Campos MC, Leckman JF, Mercadante MT *et al*. Adults with early-onset obsessive-compulsive disorder. *Am J Psychiatry* 2001;**158**:1899–1903.
119. Miguel EC, do Rosário-Campos MC, Prado HS *et al*. Sensory phenomena in obsessive-compulsive disorder and Tourette’s disorder. *J Clin Psychiatry* 2000;**61**:150–156.
120. Samuels J, Nestadt G, Bienvenu OJ *et al*. Personality disorders and normal personality dimensions in obsessive-compulsive disorder. *Br J Psychiatry* 2000;**177**:457–462.
121. Coles ME, Pinto A, Mancebo MC, Rasmussen SA, Eisen JL. OCD with comorbid OCPD: a subtype of OCD? *J Psychiatr Res* 2008;**42**:289–296.
122. Mancebo MC, Eisen JL, Grant JE, Rasmussen SA. Obsessive compulsive personality disorder and obsessive compulsive disorder: clinical characteristics, diagnostic difficulties, and treatment. *Ann Clin Psychiatry* 2005;**17**:197–204.
123. Phillips KA, Wilhelm S, Koran LM *et al*. Body dysmorphic disorder: some key issues for DSM-V. *Depress Anxiety* 2010;**27**:573–591.

124. Gunstad J, Phillips KA. Axis I comorbidity in body dysmorphic disorder. *Compr Psychiatry* 2003;**44**:270–276.
125. Rasmussen SA, Eisen JL. The epidemiology and clinical features of obsessive compulsive disorder. *Psychiatr Clin North Am* 1992;**15**:743–758.
126. Saxena S. Is compulsive hoarding a genetically and neurobiologically discrete syndrome? Implications for diagnostic classification. *Am J Psychiatry* 2007; **164**:380–384.
127. Mataix-Cols D, Frost RO, Pertusa A *et al.* Hoarding disorder: a new diagnosis for DSM-V? *Depress Anxiety* 2010;**27**:556–572.
128. Pertusa A, Frost RO, Fullana MA *et al.* Refining the diagnostic boundaries of compulsive hoarding: a critical review. *Clin Psychol Rev* 2010;**30**:371–386.
129. Pertusa A, Fullana MA, Singh S, Alonso P, Menchón JM, Mataix-Cols D. Compulsive hoarding: OCD symptom, distinct clinical syndrome, or both? *Am J Psychiatry* 2008;**165**:1289–1298.