

CHAPTER 13.

OBSESSIVE-COMPULSIVE DISORDER

Introduction

Many hotels do not have a 13th floor: after the 12th comes the 14th floor. I was uncomfortable writing a 13th chapter. This is an example of a “superstition”; many healthy individuals have vague superstitions, which they know are “silly”, but they prefer not to transgress. Superstition and Obsessive-compulsive disorder (OCD) are not related, but superstitions and how we respond to them have something of the nature of OCD.

Students trained predominantly on inpatient units may see little OCD. This disorder is usually managed on an outpatient basis. Patients are often reluctant 1) to admit to OCD symptoms (which they know are “silly”), and 2) to enter hospitals (where they may catch germs – nor do they wish to be removed from the relative security of their homes and routines). Also, treatment can often be adequately and cost-effectively delivered in office practice. Nevertheless, OCD is not uncommon (1.2% of the population; Ruscio et al, 2010) and is a cause of great suffering and disability for the patient and distress for the family.

Son's obsession leads to shooting

London

A FATHER blasted his 16-year-old son with a shotgun and then turned the gun on himself after being driven mad by the boy's obsession with cleanliness, it emerged yesterday.

Relatives of Gerald Carter, 50, who was found dead at his home in Green Lane, Chichester, West Sussex, spoke of the family's torment as a result of the teenager's condition.

Son Philip Carter, who suffered a massive abdominal wound in the attack, had a rare disorder which made him volatile and aggressive.

His aunt, Tina Carter, told PA News: “He was obsessive about washing his hands to such an extent that his hands were raw, and everything had to be ultra-clean.”

Philip underwent a two-hour emergency operation at St Richard's Hospital, Chichester, where he was said to be in a “satisfactory” condition.

PA

Illustration. A newspaper report from 1997. It tells that a man who shot his 16-year-old son and then himself, as a result of the distress caused by his son's OCD. This is a most unusual occurrence, and other factors were probably involved. However, the story illustrates the frustration which can occur in families in which one member is suffering OCD.

The DSM-5 places OCD in the chapter “**Obsessive-Compulsive and Related Disorders**” along with, hoarding disorder, and body dysmorphic disorder.

The manifestations of OCD are peculiar: patients are usually intelligent people who are not deluded, who experience unwelcome thoughts which they know are their own, often doing odd things such as touching objects unnecessarily, and unable to complete their daily activities on time.

Epidemiology

The British National Psychiatric Morbidity Survey (Torres et al, 2006).

Prevalence

- overall 1.1%
- decreasing with age [1.4% at 16-24 yrs; 0.2% at 65-74 yrs]
- slightly higher in women.

Of people with OCD

- 55% have obsessions only, 11% have compulsions only, and 34% have both obsessions and compulsions.
- 62% have an additional mental disorder [particularly depression and anxiety]
- 20% had alcohol dependence and 13% had drug dependence
- frequently, marked social and occupational impairment.
- 25% have a history of attempted suicide.

Clinical features

The onset of symptoms may be gradual or sudden. Onset following stressful events, such as pregnancy/childbirth is often reported. Generally the course is chronic, but fluctuating (exacerbation and remission). Both, spontaneous remission and progressive deterioration can occur.

Obsessions are persistent, intrusive ideas, thoughts, impulses, or images that are experienced as inappropriate and that cause anxiety or distress. The individual is able to recognise that the obsessions/events are the product of his/her own mind and not imposed from outside (that is, they are not related to the psychotic experience of thought insertion or control).

The most common obsessions are repeated thoughts about contamination (e.g., becoming contaminated by shaking hands), repeated doubts (e.g., worrying about having left a door unlocked, or a stove switched on), a need to have things in a particular order (e.g., intense distress when objects are out of order), aggressive or horrific impulses (e.g., to hurt one's child or shout an obscenity in church), and sexual imagery.

Obsessions are “ego-dystonic”, meaning they are experienced as ‘alien’: not the kind of thoughts/events the individual would usually enjoy. The individual is unable to

control them. These symptoms often cause self-doubt and a sense of shame. Accordingly, individuals are often reluctant to disclose their symptoms; there is frequently a 5-10 year delay before individuals come to psychiatric attention.

Compulsions are repetitive behaviours (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently). The goal of compulsions is often to prevent or reduce anxiety or distress which accompanies an obsession. The individual feels driven to perform the compulsion. The individual with obsessions about contamination may wash his/her hands until the skin is damaged; individuals distressed by unwanted blasphemous thoughts may find relief in counting or saying prayers. Alternatively, compulsive behaviour may not be connected in a realistic way with what it is designed to neutralize (e.g., touching the back of a chair to reduce anxiety raised by the thought that one might swallow a knife).

In OCD, anxiety may exist at several levels. Anxiety may be an inherent part of the obsession/thought ("Throw the baby out of the window"), a consequence of the loss of autonomy (distress at being unable to control own thoughts), a consequence of the illogicality/"silliness" of a compulsion, and as a consequence of attempts to resist the compulsion. In addition, there is universal fear of mental illness.

Diagnostic criteria: Obsessive-compulsive disorder (DSM-5)

A. Presence of obsessions, compulsions or both:

Obsessions are defined by 1 and 2

1. recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that cause (most individuals) marked anxiety
2. the individual attempts to ignore or suppress thoughts, impulses, images, or neutralize them with a compulsion

Compulsions are defined by 1&2

- (1) repetitive behaviours (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
- (2) the behaviours or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; however, these behaviours or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent or are clearly excessive.

- B. The obsessions or compulsions cause marked distress, are time consuming (take more than 1 hour per day), or significantly interfere with the person's normal routine, occupational (or academic) functioning, or usual social activities or relationships.**

Symptom-based sub-typing of OCD

There have been various attempts to find subtypes of OCD on the basis of clinical presentation (Castle et al, 2006). It is hoped that treatments will be developed for each clinical sub-type. Factor analytic studies have described a four-factor model:

- Aggressive, sexual, and religious obsessions, and checking compulsions;
- Symmetry and ordering obsessions and compulsions;
- Contamination obsessions and cleaning compulsions;
- Hoarding obsessions and compulsions.

Washing and checking rituals are moderately responsive to the “exposure-response prevention” (ERP) therapy, but other sub-types remain difficult to treat.

Comorbidity

OCD is often (56-83%; Canadian, 2006) co-morbid with other psychiatric disorders (particularly depression and anxiety) and it may be difficult to determine the primary condition. 20% have alcohol dependence and 13% have drug dependence (Torres et al, 2006). Other co-morbid conditions which occur not infrequently include eating disorders and Tourette’s syndrome.

OCD may be co-morbid with body dysmorphic disorder and trichotillomania (the compulsive urge to pull out one's hair, leading to noticeable hair loss, balding and distress).

It is possible for people with OCD to develop delusions. A diagnosis of OCD is a risk factor for schizophrenia. Recent opinion is that these two conditions probably share common etiological factors (Meier et al, 2014).

Personality disorders are highly prevalent among people with OCD. The cluster C personality disorders (avoidant, dependent, obsessive-compulsive) are the most common, but borderline, histrionic and schizotypal also occur.

Prognosis

142 children and adolescents with OCD were followed up after 9 years (Heyman et al, 2010). 41% had persistent OCD. Considerable numbers had developed other psychiatric diagnoses. Approximately 50% were still receiving treatment.

The highest estimate of spontaneous and enduring remission is 20% (Skoog & Skoog, 1999). Thus, OCD is a chronic disorder with a guarded prognosis.

Genetics

Progress is slow. Concordance among monozygotic twins is greater than among dizygotic twins (Browne et al, 2014).

Family studies have more consistently demonstrated OCD among the first-degree relatives of patients with childhood onset OCD, than among the first-degree relatives of patients with later onset OCD (Starcevic, 2005). It is assumed that those with early onset OCD have a stronger genetic contribution.

Certain OCD symptoms (such as contamination/cleaning) are found in families more commonly than others (such as symmetry/ordering) (Brakoulias et al, 2016).

A number of genome-wide linkage studies and 80 candidate gene studies have been published. Single-nucleotide polymorphisms (SNPs) have enjoyed little success (Jaffe et al, 2014).

Epigenetic studies have commenced - DNA methylation in OCD is being investigated (Nissen et al; 2016).

Neuroimaging

As with other severe mental disorders, OCD has been extensively investigated using neuroimaging. There is a large number of techniques and study designs. Complete consensus has not yet been reached.

The corticostriatal hypothesis of OCD postulates dysfunction in the cortico-striato-thalamo-cortical circuits. According to this model, disturbances in the pathways between the cortex and the thalamus are implicated in the pathogenesis of obsessions, whereas abnormalities in the striatum are involved in the pathogenesis of compulsions and repetitive motor acts (Insel, 1992).

The anterior cingulate is also of great interest – the majority of functional imaging studies find hyperactivity in this structure (McGovern and Seth, 2016).

A meta-analysis confirms that during executive functioning, OCD patients show a functional deficit of the right caudate body (Del Casale et al, 2015).

In about half patients with OCD the symptoms commence gradually, usually in childhood. In the other half, symptoms commence after a traumatic event (TE), usually in later life. Patients without TE may have bilateral grey matter volume increases in putamen and the central tegmental tract of the brainstem, while those with TE may have grey matter volume increase in the right anterior cerebellum (Real et al, 2016). Thus, possibly different pathophysiology depending on etiology.

Other abnormalities have been described:

- white matter functional abnormality in the left cingulum bundle (Fan et al, 2016).
- the pituitary gland volumes may be smaller than healthy controls and increase with treatment with clomipramine (anti-OCD med) (Atmaca et al, 2016).
- structural (Hu, et al, 2016) and functional (Tian et al, 2016) abnormalities have been identified in a number of circuits throughout the brain.
- Magnetic resonance spectroscopy (MRS) has shown decreased N-acetylaspartate (NAA) in the frontal cortex (Aoki et al, 2012).
- spontaneous activity in the insula (Zhu et al, 2015).

Immune factors

An OCD-like disorder is caused by childhood streptococcal infections and is termed PANDAS (Paediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections). A large percentage of children who have suffered this complication of rheumatic fever have antibodies directed against the caudate (Swedo et al, 1994).

An immune basis for OCD continues to be sought (Teixeira et al, 2014)

Current theories

OCD is yet to be fully understood. One recent theory proposes a connection between disgust and OCD. Disgust is a basic human emotion, which may have an evolutionary function: encouraging the avoidance of contamination and disease. Functional imaging indicates that the neurocircuitry of OCD and disgust are similar. This would fit with OCD in which there are contamination concerns.

Other current theories include “not just right experiences” (Coles et al, 2010), “failure of the ability to terminate improbable but grave danger concerns” (Woody and Szechtman, 2010), “an inflated sense of responsibility” (Smari et al, 2010) and an increased sense of “incompleteness” (Belloch et al, 2016).

A theory of the molecular etiology of OCD suggests an alteration of dendrite formation, mediated by insulin and insulin-related signalling (van de Vondervoort et al, 2016).

Psychological therapy

Exposure and response prevention (ERP). Exposure consists of either self- or therapist-guided confrontation with the feared object or circumstances. Response prevention: once confrontation has been achieved, patients are asked to refrain from performing rituals. There is good evidence of efficacy (Foa, 2010).

In **thought stopping** the patient (or initially the therapist) applies a stimulus which counteracts or interrupts the obsessional preoccupation. Common techniques include shouting “stop” or applying an aversive stimulus such as a sting on the wrist with an elastic band. Eventually, shouting or stinging can be replaced by less dramatic act, such a clenching a fist, at which point thought stopping can be performed unnoticed, in public settings.

Behavioural therapy is as effective as pharmacotherapy, and neuroimaging studies show the same changes in cerebral metabolism with successful behaviour therapy as with successful pharmacotherapy (Swartz et al, 1996). However, both are ineffective in 25% of OCD patients.

Behavioural therapy has an advantage over pharmacotherapy as the beneficial effects last longer after therapy has ceased. However, behaviour therapy can be difficult to

apply if the patient does not have overt rituals (mental rituals and obsessional slowness). This approach is unacceptable to some patients and ineffective in others.

Supportive psychotherapy has a place in managing OCD, by helping patients improve their functioning and adjustment.

Pharmacological therapy

70% of treatment naïve OCD patients will improve at least moderately with the use of SSRIs (Rasmussen et al, 1993), but most will have residual symptoms and impairments. All SSRIs appear to be effective.

Clomipramine is an older medication, a tricyclic antidepressant, which was the first pharmacological agent to be effective in the management of OCD. Use has declined in favour of the SSRIs, because the newer medications have less side-effects and are less dangerous in overdose. However, clomipramine (which is a strong SRI) retains an important place as a second-line agent, applied when the response to SSRIs has been unsatisfactory.

Treatment of OCD with SSRIs requires larger than the usual antidepressant dose to be sustained for up to 12 weeks for full effect (Kellner, 2010).

When response is unsatisfactory, augmentation of an SSRI with an antipsychotic is recommended (Kellner, 2010), in particular, haloperidol, risperidone and aripiprazole.

The relapse rate is very high (24-89%; Abramowitz et al, 2009).

Neurosurgery

Cingulotomy, disconnecting the outflow of from the orbitofrontal cortex, has been reported to be effective, sustained and safe (McGovern and Seth, 2016).

Deep brain stimulation (DBS) offers a clinical response of 60% (Bais et al, 2014).

Electroconvulsive therapy (ECT)

ECT has a place in intractable, severe cases, especially when complicated by depressive disorder.

HOARDING DISORDER

Hoarding, the acquisition of, and inability to discard, worthless items even after they appear (to others) to have no value, has long been considered a feature of a range of mental disorders, but most often, OCD, occurring in 18-42% of patients. It may also be a feature of schizophrenia, dementia, eating disorders, autism and mental retardation.

However, DSM-5 (2013) described hoarding as a distinct disorder.

DSM-5 Hoarding disorder – diagnostic criteria in brief

- A. Difficulty discarding possessions regardless of their actual value
- B. Perceived need to save the items, distress associated with discarding
- C. Living spaces congested
- D. Causes distress, impaired occupational and social functioning

It is suggested “intolerance of uncertainty” (Wheaton et al, 2016) and “decreased cognitive flexibility” (Carbonella and Timpano, 2016) may be contributing factors.

The media frequently report on two types of hoarders: 1) those who clutter the outside of their houses with what appears to neighbours to be unsightly rubbish, and 2) those who hoard animals. Both forms may damage real-estate values and the public health. Hoarding inside the home may leave people with almost no living space.



Illustration. Hoarding, with material extending outside the house.



Illustration. Hoarding of animals. “Chubbers Animal Rescue” (Caroline County; Maryland). The animal welfare organization found 300 cats being kept in a residential house, 70 decomposing corpses, and surfaces covered in inches of animal waste.

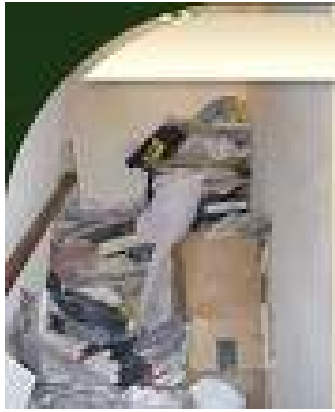


Illustration. Hoarding inside a house. This picture is looking up a stair case. It was not possible to get upstairs.

Animal hoarders generally have good will toward animals. As the hoarding progresses, however, these individuals are unable to care for their animals adequately, but are unable to give them up.

Not all hoarding is a result of OCD, and not all hoarding reaches the extremes which makes it “newsworthy”. Hoarding is frequently associated with other psychopathology, and it is unlikely that punishment is the appropriate remedy.



Illustration. These ten watches, various dials, rings, notebooks (unused) and keys (to unknown locks) were among the belongings carried in a bag by an itinerant man with chronic schizophrenia. The collecting of such items may not satisfy the definition of hoarding, as they may have monetary value (although, none of watches were in working order). The collection of timepieces is an accepted hobby. And further, these watches may have had delusional value to the owner. Not shown in this picture is that the bag was stuffed full of old newspaper clippings and other “rubbish”.



Illustration. This may qualify as “hoarding”, but was the result of a delusion. A well dressed young man with schizophrenia carried his faeces in a backpack. He believed it contained “gold dust”.

Speculation on the drinking of urine

Drinking one’s own urine was advocated by Hippocrates and is mentioned in the Bible (Proverbs, 5:15) and other religious documents. It was recommended by Morarji Desai (Prime Minister of India, 1977-9).

To many in the west, the thought of drinking one’s urine is unattractive. However, the practice is followed by devotees in a number of countries. The author has met 2 patients who have had a strong desire (to which they yielded) to drink their own urine. In neither case was the individual psychotic and in neither case was the thought ego-alien.

The author wonders if drinking one’s own urine could have anything to do with hoarding.

BODY DYSMORPHIC DISORDER

DSM-5 diagnostic criteria

- A. Preoccupation with perceived defects in physical appearance, not apparent to others
- B. Repetitive behaviour – mirror checking –excessive grooming
- C. Clinical distress and functional impairment

In a study of people presenting for abdominoplasty (surgical removal of fat from the abdomen) 41% had mild to moderate, and 59% had severe symptoms of body dysmorphic disorder (de Brito et al, 2016).

Of adolescents with body dysmorphic disorder, 68% of those who completed a course of CBT improved (Greenberg et al, 2016).

OCD Cases

Case history, 1

Ms D was a 20-year-old unemployed, single female who lived at her parent's home along with both parents and her only sibling, Ms K, who was 17 years of age. Ms D had not completed high school, leaving at 16 years of age. Ms K, on the other hand, was very successful at school and was expecting to commence university next year. Father owned a small business and mother worked part-time in an office. Mother was described as being critical of her husband and Ms D.

Ms D was referred by her GP. She was reluctant to talk and gave as the reason for referral as, "I'm just stupid". It was revealed that Ms D developed symmetry and ordering obsessions in school. She was slow and unable to complete tasks and left school prematurely because of the pressure to complete assignments and the disgrace of poor achievement. She had secured only menial part-time employment. She did not want responsible jobs because they were more difficult for her to complete.

She was an intelligent individual with a good understanding of her problems, but she felt powerless to conduct her life in the manner she wished. She was unduly concerned about her bed covers having creases, and could not leave her room until she was convinced there were none. She was distressed by the letter "R" because it suggested "rape". When she saw the letter "R" on a signpost or advertisement she have the compulsion of saying various words to herself, starting with the word "rape" and then moving off to totally unrelated words, i.e., "rape, rap, rat, tap, top, topping, hopping, laughing". Ms D did not have a particular fear of being raped herself, it was simply that the word made her intensely uncomfortable.

Ms D was treated with combined ERP and an SSRI. There was an examination couch with a covering sheet in the office. Folds and wrinkles were made in the sheet by the psychiatrist at the start of each interview, she was asked not to remove them. She was then distracted by the psychiatrist during supportive psychotherapy and discussions about medication were conducted. At subsequent interviews Ms D's attention was increasingly directed to the creased sheet by the psychiatrist. Eventually Ms D was asked to place the creases in the sheet herself, before the interview commenced. She was able to tolerate this exposure and commenced resisting her compulsion at home.

The compulsion to repeat words after seeing the letter R was treated with thought stopping. She was shown the letter R and instructed to shout STOP and then switch

her attention directly back to the task at hand. Within one week she was able to forcefully say STOP to herself, and switch to a productive task.

Ms D was commenced on escitalopram which was gradually increased to 60 mg daily. She was placed in a work rehabilitation program, and was found suitable receptionist office work. After six months she was referred back to her GP. At this stage she was much improved. She was able to leave her bed unmade and largely ignore the letter R.

Ms D was seen for a few sessions on two subsequent occasions in the following two years, when stressful events appeared to have triggered minor set-backs. After almost three years she was relatively symptom free, employed in suitable position, engaged to be married, and about to move out of her parent's home.

Case history, 2

Mr E was 55 years of age at the time of presentation. He lived with a very supportive second wife. He was unemployed and lived in a small house with a railway track at the back. He had been known to the psychiatrist 25 years earlier when he was profoundly hypochondriacal and supported by his wife in his (mistaken) belief that he had various medical complaints which needed medical treatment.

At presentation Mr E was very unclean and odoriferous. His hands were dirty and his nicotine stained nails were over 1 cm long and curling over the ends of his fingers. Mr E did not give a full history. He stated that his medication was not correct because he developed light-headedness at 10:23 every morning. When asked about his neglected personal hygiene he did not address the question, but began talking about the need for cleanliness and about the health dangers of toilets. He was soon talking about his various hypochondriacal concerns.

Mrs E explained that the patient was concerned about the cleanliness of all toilets, including that in his own home. Rather than risk getting germs from his toilet he had been in the habit, for some years, of opening his bowels at the side of the railway track behind his house. Public officials had become aware of this practice and had, on a number of occasions, threatened to prosecute. Mr E had again been threatened with prosecution in the week before admission, which may have caused a worsening in his mental state.

Mrs E also stated that she was feeling overwhelmed by looking after her husband and doubted she would be able to remain with him.

Mr E was admitted to hospital. He was already taking a sufficient dose of an SSRI. A small dose of an atypical antipsychotic was added. He could not co-operate with behavioural therapy designed for his particular obsessions and compulsions. However, he was asked to use the toilet and interact with staff and other patients in the appropriate manner. Initially he opened his bowels in his bed. Over some weeks, however, his condition improved and he was able to use the toilet. Mrs E benefited from the rest and was happy to continue to support her husband at home.

This case illustrates the paradox of some OCD patients who are concerned about cleanliness, but who are themselves, quite unclean. It seems that their concerns and the anxiety are so great and preoccupying that they are unaware of the facts of their actual situation.

Case history, 3

Mr F was a 54-year-old divorced, unemployed former clerk, living alone in a Housing Department unit. His marriage had ended 20 years previously and he one child, a daughter living in a distant part of the country. Mr F's mother was alive but he stated he "hated" her and had not communicated with her in over a decade.

Mr F was brought to the psychiatrist's office by a male friend. He stated that he would not have been able to come alone because leaving his home was anxiety provoking. He had been housebound for 8 years. He had two friends from the distant past and had maintained contact with them by telephone. He had made no new friends. He reported that there had been a problem with his kitchen tap and he had not been able to turn it on for 7 years. Mr F could afford a plumber, but the stress of having another person in his flat was too much to contemplate.

Mr F was rigid and uncompromising in his manner. He had tried a vast range of medications over the years. He knew their names. He said that none had helped in the slightest and he had experienced severe side effects with most of them.

His reluctance to leave the house appeared to be agoraphobia. However, there were symptoms of OCD. He was disabled by an obsession that he may lose letters from his letter-box. When he approached his letter-box he first searched the small, concrete front drive (about the size of a room) to make sure that the post-man had not dropped a letter before putting it into the box. This searching of a blank flat surface could take half an hour. Mr F would then slowly open the door of his letter-box by one or two centimetres and peep in over the top to see if there were any letters. Irrespective, he would then open the door completely, take out any letters and then feel around inside the box for some minutes to make sure there were no letters left. He would then close the box. The most difficult stage then followed: he would again have to search the concrete drive to make sure that no letters had dropped out when he had opened the door. The process of checking his letter-box could take one hour or more.

Mr F was humiliated by his disorder. He knew that he was behaving illogically, and this caused him distress. In the past he had resisted his compulsion. At the time of presentation he had given up all resistance. He said it was less anxiety provoking to comply with this compulsion than to resist, and he would not co-operate with ERP or any other form of behaviour therapy.

Mr F believed he may get some help from a particular SSRI and asked for it to be prescribed. This was agreed. He was accompanied back to the psychiatrist's office on half a dozen occasions by his friend, at which time the dose of the SSRI was increased, and then began to come alone. Supportive psychotherapy was provided and attempts were made (unsuccessful) to encourage Mr F to participate in pleasurable

activities. He appeared to enjoy his meetings with the psychiatrist and would always bring word and number puzzles.

After one year Mr F described what may have been a depressive episode which lasted a month. He was already taking a sufficient dose of an effective antidepressant and as change was almost impossible, Mr F and his psychiatrist decided to wait for natural remission. This occurred after some weeks. Mr F then seemed to improve considerably. He began bringing the psychiatrist up to 4 plastic shopping bags of old belongings, old magazines and broken electrical equipment. The opinion was formed that Mr F had been hoarding for years and that with the assistance of medication and supportive therapy he was now able to discard some of this material. Mr F was aware that the psychiatrist would probably discard these belongings, he did not object, he seemed unable to do so himself.

After 4 years Mr F telephoned his psychiatrist that he was again feeling depressed. His next appointment was one week away. Mr F assured his psychiatrist he was not suicidal. He said he could not come to an earlier appointment, and would not accept hospitalization. He did not arrive at his next appointment and was found in his unit of an overdose. [The psychiatrist was subsequently criticised by the Coroner for allowing the patient access to dangerous medication.]

This case underscores the point mentioned above, that OCD is often comorbid with other psychiatric disorders, particularly major depression, but also anxiety disorders and hypochondriasis.

Yale-Brown obsessive-compulsive scale (YBOCS)

The YBOCS (Goodman et al, 1989) is the most commonly used OCD scale. However, it is protected by copyright and only the flavour can be here presented. There are two parts, 1) a symptom check list, and 2) a severity rating scale. A printable version is freely available at www.cnsforum.com. Warning! it is over 20 pages in length.

The symptom check list has questions similar to the following:

1. Do you often have repetitive, intrusive, unwanted thoughts that make you anxious, and that you can't get out of your mind no matter how hard you try?
2. Do you worry excessively about speaking or acting in a manner that you think is harmful, violent, sexually inappropriate, immoral, or sacrilegious?
3. Do you repeatedly ruminate about unwanted thoughts in an effort to prove to yourself that you will not act in a manner that you think is harmful, violent, sexually inappropriate, immoral, or sacrilegious?
4. Do you recite prayers or certain phrases in an effort to rid yourself of unwanted thoughts or to ensure that nothing bad happens?
5. Do you often repeat routine, daily activities to ensure that you did not harm someone (e.g., driving back to a certain place in the road to reassure yourself that you did not run over a pedestrian)?
6. Do you wash your hands or shower more often or for longer periods of time than most other people?

7. Do you excessively clean objects (e.g., clothes, towels, bed sheets, household items, your car interior, etc)?
8. Do you repeatedly visually check to be sure you have properly performed a just-completed task (e.g., looking to be sure you have signed a check, re-opening a mailbox to be sure you have deposited a letter)?
9. Do you often repeat routine behaviours (e.g., locking doors, turning off light switches or the stove)?
10. Do you frequently ask others for reassurance that tasks have been properly completed (e.g., “Did I lock the door?”)?
11. Do you repeatedly ask others for reassurance that you have not done something “wrong”, “bad”, or “harmful”?
12. Do you unnecessarily arrange, order, or tidy the contents of your desk, closet, cabinets, bookshelves, etc, to make them symmetrical or “just right”?
13. Do you unnecessarily straighten common household objects such as window blinds or rugs in an effort to make them symmetrical or “just right”?
14. Do you repeatedly count mundane items that do not really merit counting (e.g., ceiling or floor tiles, lights, cars etc)?
15. Do you have great difficulty discarding things that have no practical value and that most other people would consider rubbish (e.g., old newspapers, clothing you have worn for years, empty food containers)?

The severity rating scale is similar to the following:

Item		Range				
1	Time spent on obsessions	0 h/day 0	0-1 h/day 1	1-3 h/day 2	3-8 h/day 3	>8 h/day 4
2	Interference from obsessions	None 0	Mild 1	Definite but manageable 2	Substantial impairment 3	Incapacitating 4
3	Distress from obsessions	None 0	Little 1	Moderate but manageable 2	Severe 3	Near constant, disabling 4
4	Resistance to obsessions	Always resist 0	Much resistance 1	Some resistance 2	Often yields 3	Completely yields 4
5	Control over obsessions	Complete control 0	Much control 1	Some control 2	Little control 3	No control 4

Obsession subtotal (add items 1-5) _____

References

- Abramowitz J, Taylor S, McKay D. Obsessive-compulsive disorder. *Lancet* 2009; 374: 491-499.
- Aoki Y, Aoki A, Suwa H. Reduction of N-acetylaspartate in the medial prefrontal cortex correlated with symptom severity in OCD: meta-analyses. *Tranl Psychiatry* 2012, in press.

- Atmaca M, Yildirim H, Mermi O, Gurok M. Effects of anti-obsessional treatment on pituitary volumes in obsessive-compulsive disorder. *Psychiatr Danub* 2016; 28: 58-62.
- Bais M, Figeo M, Denys D. Neuromodulation in obsessive-compulsive disorder. *Psychiatric Clinics of North America* 2014; 37: 393-413.
- Belloch A, Fomes G, Carrasco A, et al. Incompleteness and not just right experiences in the explanation of obsessive-compulsive disorder. *Psychiatry Res* 2016; 236: 1-8.
- Brakoulias V, Starcevic V, Martin A, et al. The familiarity of specific symptoms of obsessive-compulsive disorder. *Psychiatry Research* 2016; 239: 315-319.
- Browne H, Gair S, Scharf J, Grice D. Genetics of obsessive-compulsive disorder and related disorders. *Psychiatric Clinics of North America* 2014; 37:319-335.
- Canadian Psychiatric Association. Clinical Practice Guidelines. Management of Anxiety Disorders. *Canadian Journal of Psychiatry* 2006; 51 (Suppl 2): 1S-90S.
- Carbonella J, Timpano K. Examining the link between hoarding symptoms and cognitive flexibility deficits. *Behav Ther* 2016; 47: 262-273.
- Castle D, Phillips K. Obsessive-compulsive spectrum disorders: a defensible construct? *Australian and New Zealand Journal of Psychiatry* 2006; 40:114-120.
- Coles M, Heimberg R, Frost R, Steketee G. Not just right experiences and obsessive-compulsive features: experimental and self-monitoring perspectives. *Behavior Research and Therapy* 2005; 43: 153-167.
- De Brito M, Nahas F, Cordas T, et al. Prevalence of body dysmorphic disorder symptoms and body weight concerns in patients seeking abdominoplasty. *Aesthet Surg J* 2016; 36: 324-332.
- Del Casale A, Rapinesi C, Kotzalidis G et al. Executive functions in obsessive-compulsive disorder. *World J Biol Psychiatry* 2015 [Epub ahead of print]
- Fan S, van den Heuvel O, Cath D et al. Mild white matter changes in un-medicated obsessive-compulsive disorder patients and their unaffected siblings. *Frontiers in Neuroscience*. January 2016 doi: 10.3380/fnins.2015.00495
- Foa E. Cognitive behavioral therapy of obsessive-compulsive disorder. *Dialogues in Clinical Neurosciences* 2010; 12: 199-207.
- Gomes P, Brasil-Neto J, Allam N, et al. A randomized, double-blind trial of repetitive transcranial magnetic stimulation in obsessive-compulsive disorder. *Journal of Neuropsychiatry and Clinical Neuroscience* 2012; 24:437-443.
- Goodman W, Pride L, Rasmussen S, et al., The Yale-Brown Obsessive Compulsive Scale 1: Development, use and reliability. *Archives of General Psychiatry* 1989; 46:1006-1011.
- Greenberg J, Mothi S, Wilhelm S. Cognitive-behavior therapy for adolescent body dysmorphic disorder. *Behavior Therapy* 2016; 47: 213-224.
- Heyman M, Perez M, Hilton K, et al. Long-term outcomes of obsessive-compulsive disorder: follow-up of 142 children and adolescents. *British Journal of Psychiatry* 2010; 197: 128-134.
- Hu X, Liu O, Li B, et al. Multivariate pattern analysis of obsessive-compulsive disorder using structural neuro. *Eur Neuropsychopharmacol* 2016; 26: 246-254.
- Insel T. Toward a neuroanatomy of obsessive-compulsive disorder. *Archives of General Psychiatry* 1992; 49:739-744.
- Jaffe A, Deep-Somboslay A, Tao R, et al. Genetic neuropathology of obsessive psychiatric syndromes. *Translational Psychiatry* 2014; 4: e432.
- Kellner M. Drug treatment of obsessive-compulsive disorder. *Dialogues in Clinical Neuroscience* 2010; 12: 187-197.
- Meier S, Peterson L, Perdersen M, et al. Obsessive-compulsive disorder as a risk factor for schizophrenia: a nationwide survey. *JAMA Psychiatry* 2014; 71: 1215-21.

- Nissen J, Hansen C, Stamawska A, et al. DNA methylation at the neonatal state at the time of diagnosis: preliminary support for an association with the estrogen receptor 1, etc. *Front Psychiatry* 2016; 7: 35.
- Rasmussen S, Eisen J, Pato M. Current issues in the pharmacological management of obsessive-compulsive disorder. *Journal of Clinical Psychiatry* 1993; 54:4s-9s.
- Real E, Subira M, Alonso P, et al. Brain structural correlates of obsessive-compulsive disorder with and without preceding stressful life events. *World Journal of Biological Psychiatry* 2016; Feb 26: 1-12.
- Ruscio A, Stein D, Chiu W, Kessler R. The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication. *Molecular Psychiatry* 2010; 15: 53-63.
- Skoog G, Skoog I. A 40 year follow-up of patients with obsessive-compulsive disorder. *Archives of General Psychiatry* 1999; 56:584-590.
- Smari J, et al. Pathways to inflated responsibility beliefs, responsibility attitudes and obsessive-compulsive symptoms: factor structure and test of mediational model. *Behavioral and Cognitive Psychotherapy* 2010; 38: 535-544.
- Starcevic V. *Anxiety Disorders in Adults*. Oxford University Press: Oxford. 2005.
- Swartz J, Stoessel P, Baxter L. Systemic changes in cerebral glucose metabolic rate after successful behaviour modification treatment of OCD. *Archives of General Psychiatry* 1996; 53:109-113.
- Swedo S, Leonard H, Kiessling L. Speculations on anti neuronal antibody-mediated neuropsychiatric disorders of childhood. *Pediatrics* 1994; 93:323-326.
- van Grootheest D, Cath D, Beekman A, Boomsma D. Twin studies on obsessive-compulsive disorder: a review. *Twin Research and Human Genetics* 2005; 8:450-458.
- Teixeira A, Rodrigues D, Marques A, et al. Searching for the immune basis of obsessive compulsive disorder. *Neuroimmunomodulation* 2014; 20: 152-158.
- Tian L, Meng C, Jiang Y, et al. Abnormal functional connectivity of brain network hubs etc. *Prog Neuropsychopharmacol Biol Psychiatry* 2016 [Epub ahead of print].
- Torres A, Prince M, Bebbington P, et al. Obsessive-compulsive disorder: prevalence, comorbidity, impact, and help-seeking in the British National Psychiatric Morbidity Survey of 2000. *American Journal of Psychiatry* 2006; 163:1978-1985.
- Van de Vondervoort I, Poelmans G, Aschrafi A, et al. An integrated molecular landscape implicates the regulation of dendritic spine formation through insulin related signalling in obsessive-compulsive disorder. *J Psychiatry Neurosci* 2016; 41(3): 140327.
- Wheaton M, Abramowitz J, et al. An investigation of the role of intolerance of uncertainty in hoarding symptoms. *J Affect Disord* 2016; 193:208-214.
- Woody E, Szechtman H. Adaptation to potential threat: the evolution, neurobiology, and psychopathology of security motivation system. *Neuroscience Biobehav Review* 2010; in press.
- Zhu Y, Fan Q, Zhang Z, et al. Spontaneous activity in insula predicts symptom severity of unmedicated Conf Proc IEEE Eng Med Biol Soc. 2015; 5445-5448.