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The Bio-Psycho-Social Aspects and Treatment of Obsessive Compulsive Disorder: A Primer for Practitioners

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ABSTRACT

It is estimated that approximately 2.5% of the general population can be diagnosed as having Obsessive compulsive disorder (OCD). As a result, many practitioners will come into contact with clients exhibiting symptoms of OCD. This review presents a summary of diagnostic information, bio-psycho-social influences and treatment approaches regarding OCD which practitioners will find a helpful introduction to OCD thereby aiding professional practice. Also provided is a case example of how to perform cognitive-behavioral therapy for OCD.

THE BIO-PSYCHO-SOCIAL ASPECTS OF OBSESSIVE COMPULSIVE DISORDER: A PRIMER FOR PRACTITIONERS

Obsessive compulsive disorder (OCD) is an anxiety disorder that affects approximately 2-3% of the general population (Mental Health Association of New South Wales [MHANSW], 2006). It has been argued, however, that a figure of approximately 2.5% is an underestimate and thus OCD remains an under-treated diagnosis. The under-estimate can be explained by a number of factors, including social stigma, failure to identify symptoms or lacking a comprehensive understanding of the disorder (Abramowitz, 1997). Logically, a comprehensive knowledge of OCD and related factors will aid in the diagnosis and thus subsequent treatment of OCD. This literature review provides a comprehensive review of OCD and its related biological, psychological and sociological factors. Specifically, this approach will address OCD in accordance to diagnostic criteria, factors specific to the disorder from within a bio-psycho-social framework, current treatment approaches as well as incidence and prognosis.

Search Strategy

To complete this literature review a variety of databases were utilised including: Blackwell synergy, EBSCOHost such as Academic search elite and PsycARTICLES, ERIC, Psychology: A SAGE Full-Text Collection and PubMed. Information was predominantly obtained from peer-reviewed or meta-analysis articles, with publication dates ranging between 1987 and 2006.

Diagnosing OCD

OCD is classified in the *Diagnostic and Statistical Manual of Mental Disorder* as an anxiety disorder marked by the presence of obsessions and compulsions (American Psychiatric Association [APA], 2000). Obsessions are recurrent thoughts, images, or impulses that occur repeatedly, above that caused by excessive worries about real life problems (APA, 2000; World Health Organisation [WHO], 2007). The thoughts are unwanted, and usually appear to be irrational to the individual experiencing them and thus

tend to cause anxiety or distress (APA, 2000). Common obsessions include fears of contamination, sexual or aggressive impulses and repeated doubts such as questioning whether locks are actually locked (WHO, 2007). Compulsions are repetitive behaviours, such as ordering, checking or mental acts that the individual feels driven to perform in response to an obsession (APA, 2000). The compulsions act as a way to reduce the level of anxiety, distress or the prevention of a feared situation, such as repeatedly washing the hands due to fear of germs (APA, 2000; WHO, 2007). According to the APA (2000) to receive an OCD diagnosis the individual must, at some stage of the disorder, recognise that the obsessions and compulsions are irrational, and subsequently cause marked distress and impede normal functioning (APA, 2000). Furthermore, diagnosing OCD requires that obsessions or compulsions are not due to substance use, nor the result of another psychological disorder (APA, 2000).

There are several measures that have been developed to assist in the diagnosis OCD symptoms. For adults, the Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989), is one of the most frequently used. The Y-BOCS has users rate the frequency, interference in daily life, amount of distress, and control over both obsessions and compulsions. It includes over 70 typical obsessions and compulsions and is useful in both identifying and rating symptoms. The Padua Inventory-Revised (PI-R; Burns, Keortge, Formea, & Sternberger, 1996) is a 39-item self-report measure with five scales: thoughts of harm to self or others; impulses of harm to self or others; contamination and washing; checking; and dressing and grooming. Another commonly used self-report measure is the Obsessive Compulsive Inventory (Foa, Kozak, Salkovskis, Coles, & Amir, 1998), which has both long (42-item) and short (18-items) forms, as well as strong psychometric qualities.

For assessment in children, the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS; Scahill et al., 1997), an adaptation of the original Y-BOCS (Goodman et al., 1989), is commonly used. Like the original, it has evidenced strong reliability and validity for measurement of OCD symptoms. A newer measure is the Children's Florida Obsessive Compulsive Inventory (Storch, Murphy, et al., 2005) has the child to rate the presence of common obsessions and compulsions and takes only five minutes to complete. For those practitioners desiring more information than can be drawn from these measures, the Anxiety Disorder Interview Schedule for Children (ADIS-IV-C/P; Silverman & Albano, 1996) is a 90 minute semistructured interview that covers a number of childhood anxiety disorders, including social phobia, generalized anxiety disorder, separation anxiety and OCD, and can assist in differential diagnoses. The ADIS-IV-C/P also includes a number of questions about other psychological problems and

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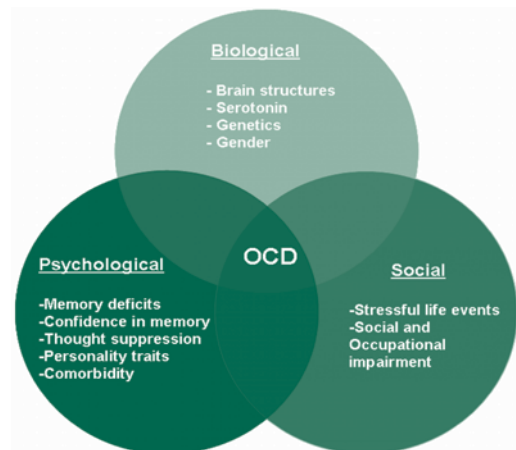
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impairment in functioning.

Biological, Psychological and Sociological Influences

Research suggests that OCD is a heterogeneous disorder, as although the cardinal symptoms of OCD are consistent across cultures, the features and course of OCD are highly variable (Hoehn-Saric & Greenberg, 1997; Lochner & Stein, 2003). It has been suggested by Lochner and Stein (2003), that this heterogeneity may have influenced biological and clinical investigations, therefore leading to mixed findings relating to OCD. Despite this, as highlighted in Figure One, research has identified certain biological, psychological and social factors as influencing the diagnosis of OCD. These biological, psychological and sociological factors will be explained in turn as follows.

Figure 1



Results revealed that compulsive checkers did not perform as well as non-checkers on explicit memory tasks designed to test working memory and episodic long-term memory.

Bio-Psycho-Social Factors in OCD

There is no solitary biological cause of OCD, however research suggests that OCD is related to over-activity in the orbital cortex, basal ganglia and anterior cingulate (Kalat, 2004; Lacerda, Dalgarrondo, Caetano, Camargo et al., 2003; Lacerda, Dalgarrondo, Caetano, Haas et al., 2003; Micallef & Bin, 2001). Firstly, the over-activity of the orbital cortex, basal ganglia and anterior cingulate as influencing OCD is reinforced in a study conducted by McGuire et al. (1994) who found that when individuals with OCD were shown objects that tend to cause symptoms, such as dirty surfaces, activity in the above three areas increased. Secondly, Lacerda, Dalgarrondo, Caetano, Camargo et al. (2003) implicate the involvement of prefrontal-subcortical circuits in the pathophysiology of OCD, with positive correlations being found between symptom severity and blood flow between the inferior frontal lobe, and right basal ganglia. Finally, a study conducted by Baxter (1992) found that changes in glucose activity in the orbitofrontal cortex and caudate nucleus correlate with the presence and disappearance of OCD symptoms. Despite these findings that implicate the overactivity of the orbitofrontal cortex in OCD, it still remains unclear whether these patterns of neural activity drive symptoms, or are caused by the symptoms (Kring, Davison, Neale & Johnson, 2007;

Zald & Kim, 2001) due to the inability to infer causation from correlation or association.

Although the exact mechanism is unknown, research suggests that the neurotransmitter serotonin appears to play a role in the presence of OCD symptomatology. Indeed, serotonin-based medications tend to reduce OCD symptoms and normalize neurobiological deficits associated with OCD (Molina et al., 1995; Micallef & Blin, 2001; Perani et al., 1995). Supporting the influence of serotonergic medications on OCD is research conducted by Molina et al. (1995) which noted a reduction in the perfusion of the right basal ganglia after treatment with serotonergic medications. In addition, Perani et al. (1995) reported a decrease in glucose metabolism in the cingulate cortex region after treatment with various serotonergic medications including fluoxetine and clomipramine.

Additionally, research suggests the involvement of genetic factors, and some researchers are seeking to clarify modes of inheritance and are attempting to locate genes that are involved with OCD (Lochner & Stein, 2003; Nestadt et al., 2000; Van Grootheest, Cath, Beekman & Boomsma, 2005). Family studies have been used to suggest that there may be a genetically-based predisposition to an anxiety disorder or neuroticism, with expression depending on exposure to other factors (Samuels & Nestadt, 1997). Therefore, research tends to support the transmission of the predisposition of the general disorder rather than specific OCD symptoms (Kalat, 2004; Samuels & Nestadt, 1997). A literature review conducted by Lochner and Stein (2003) suggests that prevalence rates among first degree relatives of individuals with OCD have been reported as ranging between 0.7% and 4.5%. A major finding regarding the familial components of OCD is that early onset tends to be associated with family ties, with no OCD symptoms being detected in the relatives of individuals with late onset OCD (Nestadt et al., 2000). This finding is consistent with previous research conducted by Pauls, Alsbrook, Goodman, Rasmussen and Leckman (1995) who suggest the hypothesis that familial loading for OCD is associated with early onset.

There have been several reports of monozygotic (identical) twin concordance for obsessive compulsive symptoms, with studies suggesting genetic determinants for OCD (Samuels & Nestadt, 1997, Jonnal, Gardner, Prescott & Kendler, 2000). A study conducted by Jonnal et al. (2000) examined 527 pairs of female twins (334 monozygotic and 193 dizygotic), with obsessive-compulsive symptoms being identified according to the Padua Inventory. Results suggested heritability of 33% and 26%, for obsessiveness and compulsiveness respectively, with unique environmental effects accounting for 67% and 74% of the variance for obsessiveness and compulsiveness, respectively. There is consensus within twin study research that monozygotic twins share determinants for OCD, however it has not been established which determinants are genetic or environmental, or a combination of both (Van Grootheest et al., 2005).

Although OCD tends to be equally common in males and females, research conducted by Grabe et al.

(2000) suggests the presence of a gender ratio with higher occurrence in females. Grabe et al. (2000) investigated prevalence, quality of life and psychosocial function with obsessive compulsive disorder in a community sample from a longitudinal study comprising of 4075 German individuals. Results suggest a predominance of females with OCD, with a ratio of 5:7. This ratio is relatively high considering some reports suggest female to male ratios ranging between 0:9 and 3:4 (Bebbington, 1998), nevertheless, reiterating a female predominance.

Psychological

There are a variety of psychological influences associated with OCD which include memory deficits, reduced confidence in memory, common personality traits, and comorbidity. It is important to note that obsessions are not all that uncommon, with many people experiencing brief intrusive thoughts during the course of their lives (Weissman et al., 1994), however clinical attention becomes paramount if obsessions become persistent, cause distress or interfere with functioning (Antony, Downie & Swinson, 1998). Research has indicated that individuals with OCD may display several cognitive deficits, for example, impaired memory abilities (Woods, Vevea, Chambless & Bayen, 2002). Research into the nature of memory impairment has focused on memory deficits in relation to compulsive symptoms, in particular checking behaviours. Research suggests that checking behaviours are a result of impaired explicit memory, low confidence in explicit memory or a combination of both (Woods et al., 2002). A recent meta-analysis conducted by Woods et al. indicates that although empirical findings have been mixed, there is an impairment of memory in compulsive checkers. Results revealed that compulsive checkers did not perform as well as non-checkers on explicit memory tasks designed to test working memory and episodic long-term memory. A possible alternative explanation for this finding is that poor memory performance could be secondary to OCD-related symptoms. For example, it is possible that the presence of obsessions may be a form of distraction in memory tasks. Thus, Woods et al. (2002) proposes that impairment of memory may be one of several components that contribute to compulsive checking behaviours.

With regard to memory impairment and compulsive checkers, some researchers have suggested that instead of lacking memory ability compulsive checkers may simply lack confidence in their memory (Woods et al., 2002). For instance, doubting whether the car door was locked may cause a person to check, and when such intrusive thoughts occur repeatedly, it could result in repetitive checking behaviours. A meta-analysis conducted by Woods et al. (2002) noted that individuals with checking symptoms expressed significantly less confidence in recognition memory despite actual deficits present. This may be explained by the fact that individuals with OCD tend to be unduly concerned with gaps in their memory, and subsequently, this lack of confidence in memory could be a contributing factor to checking behaviours (Woods et al., 2002). This finding is also consistent with the fact that individuals experiencing obsessions are more prone to extreme doubts, procrastination and experience difficulty in making decisions (Kring et al., 2007).

Rachman (1997) suggests that individuals with OCD may try harder to suppress their obsessions than non-OCD individuals, therefore in attempting to reduce intrusive thoughts it can have the opposite effect. An explanation for this could be that individuals with OCD tend to believe that by thinking about something, it can make it more likely to actually occur. Which is further impeded by the fact that individuals with OCD tend to describe deep feelings of responsibility for what occurs (Salkovskisa, Shafran, Rachman, & Freeston, 1999). For instance, a study conducted by Wegner, Scheider, Carter & White (1987) looked at the effects of suppressing a thought, that of thinking or not thinking about a white bear, across two groups of college students. Firstly, results indicated that attempts to avoid thinking about the bear increased the number of times that the students reported an intrusive thought. Secondly, suppressing the thought for five minutes had a rebound effect, which led to a preoccupation with the thought after the five minute period. It is not clear, however, if thought suppression gives us an explanation of OCD in particular or if it just relates to anxiety disorders in general (Kring et al., 2007).

For several years, the role of personality in the development of OCD has been a topic of much debate. Nevertheless, there has been little research focusing on personality features in individuals with OCD. Despite this, a study by Samuels et al. (2000) utilised the Five-Factor model of personality to assess personality dimensions in OCD. Results revealed that individuals with OCD had higher levels of neuroticisms and agreeableness, and decreased levels of extraversion. Due to the nature of OCD symptoms, it is not uncommon for researchers to find that individuals with OCD tend to be more introverted than non-OCD individuals (Fullana, Mataix-Cols, Trujillo et al., 2004). Other key personality traits have been implicated in the development of OCD, include behavioural inhibition and harm avoidance (Fullana, Mataix-Cols, Caseras et al., 2004).

According to Tükel, Polat, Özdemir, Aksüt & Türksoy (2002) individuals with OCD frequently report anxiety and depressive symptoms, as obsessions and compulsives operate in the creation and control of anxiety. A cross-national epidemiological study revealed that individuals with OCD have a greater risk of having comorbid major depression, or another anxiety disorder, than non-OCD individuals (Weissman et al., 1994). Tükel et al. (2002) found that at least 68% of OCD individuals had comorbid axis one disorders, with the most representative being major depressive disorder at 39.5%. This finding is consistent with previous research indicating that OCD is comorbid (50-77%) with other axis one disorders, with the most frequent being major depression (Grabe et al., 2000).

Social

The development and progression of OCD has been linked to a variety of social influences including the role of stressful life events, in addition to social and occupational impairment. Many authors have indicated that life-stress plays a role in the onset and maintenance of OCD (Gothelf, Aharonovsky, Horesh, Carty & Apter, 2004; Hartl, Duffany, Allen, Steketee & Frost, 2005). Firstly, research has shown that

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paediatric OCD individuals reported significantly increased negative life events in the year preceding OCD onset when compared to controls (Gothelf et al., 2004). Secondly, Hartl et al. (2005) revealed that individuals diagnosed as compulsive hoarders related a significantly greater number of different types of trauma and more frequent traumatic experiences than controls. The underlying assumption is that the presence of stress, and subsequent reaction triggers the impulsive thoughts, rituals and subsequent emotional distress, characteristic of OCD.

Due to the nature of obsessions and corresponding compulsions to reduce associated distress, individuals with OCD tend to devote an excessive amount of time, approximately more than an hour a day to their particular rituals (Moritz et al., 2005). Even on a daily basis, simple tasks such as preparing food are hindered, because in attempting to do so, the individual with OCD may feel the need to undergo washing of the hands, utensils or excessive counting and touching. The effects of OCD on the functioning of individuals is two fold. Firstly, Kring et al. (2007) suggests that OCD tends to negatively impair close relationships as the dedication to obsessions and subsequent compulsions can lead to strain, frustration and even resentment in acquaintances. Secondly, in order to combat the intrusive nature of obsessions, the individual's ability to work is severely impaired as an individual with OCD will have difficulty in completing tasks in response to a deadline, due to the time needed to engage in compulsions (Moritz et al., 2005). A study conducted by Koran, Thienemann and Davenport (1996) found that occupational role performance tended to be the most impaired across the disorder, as evident in the fact that individuals with OCD had an unemployment rate three times that of the general American population. Koran et al. (1996) also indicated a relationship between severity of symptoms and social functioning, thus indicating that individuals with more severe OCD symptoms tend to have poorer social functioning. Above all, the symptoms of OCD can limit the individual's level of self-control, increase levels of not only frustration but also depression as a result of losing social relationships and basic functioning (Kring et al., 2007).

A variety of factors are implicated in the development and course of OCD, thus emphasizing that using a bio-psycho-social model would best facilitate a comprehensive account of OCD. Such factors include, but are not restricted to, genetic predispositions; the role of specific brain structures including the prefrontal-subcortical circuits; confidence in memory; the importance placed on intrusive thoughts; social and occupational disruption; and the role of stressful life events. As a result, it is suggested that a bio-psycho-social model is an appropriate and holistic way in which to view the factors involved in the development and progression of OCD.

TREATMENT OPTIONS

OCD has historically been described as a relatively treatment resistant anxiety disorder (Shrivers, Koning, Luermans, Haack & Griez, 2005). Nevertheless, the prognosis for individuals with OCD has improved with

the expansion of available therapeutic interventions (Shrivers et al., 2005). Current treatments options include psychotherapy, pharmacology, combination of psychotherapy and pharmacology, and self-help tools. These approaches will be reviewed in turn.

Psychological

Cognitive-behavioral therapy (CBT) is the most well-supported psychological intervention for people with OCD (Franklin & Foa, 2007). CBT for OCD is a structured approach to teaching both the client and his or her family or significant others skills for responding to symptoms. The short-term efficacy of CBT has been supported in numerous clinical trials, with excellent maintenance of symptom reduction at follow-up in pediatric and adult populations (Abramowitz, Whitehead, & Deacon, 2005; Foa et al., 2005). A recent large-scale, multisite randomized placebo-controlled trial of CBT, sertraline, and a combination CBT and sertraline in children with OCD found both CBT alone and sertraline alone superior to placebo (POTS, 2004). Greater symptom reduction was found, however, in patients receiving either CBT alone or in combination with sertraline. A meta-analysis found greater effect sizes for CBT than for medication alone (1.98 versus 1.13; Abramowitz et al., 2005). Recent work has also found group-administered CBT to be as effective in improving symptoms as individual CBT in adults and children (Anderson & Rees, 2007; Barrett, Healy-Farrell, & March, 2004).

The focus of CBT for OCD is on exposure and response prevention, although cognitive restructuring can also be incorporated (Franklin & Foa, 2007). Exposure with response prevention (ERP) is a behavioral technique based on learning theory, particularly Mowrer's (1960) two-stage theory for fear acquisition and maintenance, which shows treatment response rates above 80% (Foa & Kozak, 1996). This theory posits that in the first stage, a neutral event becomes paired with an anxiety or fear provoking stimulus and, through classical conditioning, the previously neutral event comes to elicit an anxious/fearful response. Then, in the second stage, this response is maintained via operant conditioning, as escape or avoidance responses when the newly fearful stimulus is encountered cause a reduction in anxiety. Thus, to eliminate the fear, persons with OCD must first be exposed to the fear-causing stimulus, and then prevented from responding in their normal, fear maintaining way.

Exposure targets the first stage of Mowrer's (1960) theory. It relies on the gradual decrease in anxiety after being exposed to a feared or ritual-provoking stimulus. This leads to decreased elevations in anxiety and more rapid attenuation of distress in future exposures. Exposures are typically performed *in vivo*, using real-life settings and situations, although using imaginal exposures may be required in some situations, such as addressing feared consequences of not performing a ritual. For example, with a person who fears touching the seat of a toilet in a public restroom, the *in vivo* exposure would involve physically touching the toilet seat, while the imaginal exposure would be to have that person think of the

The importance of exploring self-help options is evident in the fact that there is a need for less time-intensive and more affordable therapeutic services due to service demands placed on health care professionals (Newman, Erickson, Przeworski & Dzus, 2003) and client preferences.

negative consequences of doing so (e.g., getting ill, dying). One aspect of performing exposures to be aware of is that the therapist should first model each exposure before having the client perform it. This will not only provide evidence that doing the exposure is safe, but it will serve as an exposure in and of itself that will be less distressing than when the client performs the exposure. When dealing with living creatures (e.g., insects, spiders, dogs) or potentially dangerous situations (e.g., heights), the therapist must take precautions to ensure the safety of the client (e.g., using non-poisonous spiders or friendly animals).

Response-prevention targets the second stage, and is based on the assumption that rituals and compulsions serve to reduce anxiety in the short-term through negative reinforcement, escaping and/or avoiding distress. Individuals with OCD perform rituals to relieve anxiety, and never have the experience of anxiety reducing naturally. Response-prevention does exactly this, requiring the patient to avoid performing their compulsion so the anxiety can be reduced through the process of habituation. Continuing the above example, the typical ritual to relieve anxiety after touching a “dirty” or “contaminated” surface such as a toilet might involve extensive hand washing, or at the very least touching the seat for the least possible amount of time. This is prevented, however, and the person would have to touch the seat until her anxiety naturally decreased. She would afterwards be prevented from washing her hands until her anxiety decreased to minimal levels.

Cognitive restructuring involves teaching clients how to talk back to anxious *thoughts*, as these involve inaccurate interpretations of events. Commonly seen themes in persons with OCD include inaccurate estimates of danger, responsibility, and likelihood (Barrett & Healy, 2003). Cognitive techniques demonstrate to the client how to effectively argue with obsessions, helping to recognize and reframe those obsessions in a realistic manner. This could include helping the client in the above example learn more about disease transmission and germs, so that she would be able to argue with those obsessions by saying things like “Germs don’t survive on toilet seats for very long” or “What’s the actual chance that I will get sick from doing this?”

Extensive research has been performed examining the most effective ERP strategies. Greater support has been found for implementing both exposure and response prevention than for either component alone (Foa, Steketee, Grayson, Turner, & Latimer, 1984). Mixed results have been reported in terms of the use of imaginal exposure as a supplement to *in vivo* exposure, but the use of imaginal exposure as a supplement to *in vivo* tends to be recommended by clinical experts (e.g., Franklin & Foa, 2007). Gradual exposure, working up from least distressing to most distress situations, is also recommended, as this can assist in building success early in therapy, increasing motivation for more difficult exposures (Lack, Storch, & Murphy, 2006). The optimal frequency of therapy for OCD has not been conclusively determined, with both intensive (e.g., daily sessions for 3-4 weeks) and weekly sessions showing excellent results and no differences (Storch, Geffken, et al., 2007). More highly motivated individuals, or those with very strong

support systems, may require less frequent clinical contact, while those with more severe symptoms or low motivation may benefit from intensive treatment. The involvement of family members for both adults and children, including spouses, parents, and siblings, has been associated with better long-term outcomes and is highly recommended (Lewin et al., 2005; Snider & Swedo, 2000). For a better understanding of the process of CBT for OCD, the following case example is provided.

Case Example

Jake was a 9-year-old white male whose parents brought him to an outpatient OCD specialty clinic. Jake was experiencing a number of different obsessions and compulsions, with his mother reporting noticing the first problems six months prior to bringing him into the clinic. After a thorough intake assessment, including screening for differential diagnoses, obtaining a detailed social history, and completion of both child and parent-report psychopathology measures, Jake was scheduled to begin intensive outpatient therapy. His schedule was for three weeks of 90 minute sessions five times a week. Prior to the first session, his mother was instructed to begin work on a list of those situations or things that disturbed Jake the most.

At the first session with Jake, the therapist began by going explaining the CBT model of how anxiety is developed and maintained in age-appropriate language and how therapy would help to decrease that anxiety (i.e., Mowrer’s two-factor model as described above). Then list Jake and his mother had been asked to bring with them was gone over. This list was first expanded to include all possible situations or objects that caused Jake to have an obsessive thought, and then time was spent in rank-ordering those situations and objects from least to most disturbing. When completed, this resulted in Jake’s fear hierarchy (see Table 1), a key step in CBT that helps to guide the rest of therapy. Jake and his mother were then asked what happens when he encounters the least disturbing situations on his fear hierarchy (i.e., the “Going New Places” category) and it was determined that his primary compulsion was seeking reassurance through the form of questions (e.g., “Are you sure we’re safe?” or “Do you know how to get back home?”). At this point, the first exposure exercise was initiated. Jake and the therapist left the clinic and walked around the hospital grounds until Jake was lost and unsure how to get back to the clinic, meaning he both did not know where his mother was and was surrounded by large numbers of unknown people (the exposure). The therapist then had Jake report on how nervous he was, using the same 0-100 scale that was used during the development of the fear hierarchy. After this initial rating (often referred to as a SUD rating, for Subjective Units of Distress), the therapist had Jake sit down and told him that they were just going to wait here for a bit until his anxiety decreased. Other than approximately once a minute, when the therapist asked Jake for another SUD rating, no speaking took place (the response prevention).

After 10 minutes, when Jake’s SUD had dropped from a 55 to a 10, the therapist had them move to another location, where the exercise was repeated. This time, however, after giving an initial SUD rating,

As outlined in the current literature review, OCD is an anxiety disorder that is defined by persistent and uncontrollable thoughts in conjunction with the perceived need to repeatedly complete certain tasks or rituals.

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Jake was asked “What thoughts is OCD putting in your head right now?” After he answered (“My mom is in danger, she could be hurt, I don’t know where I am, these people could hurt me or kidnap me...”), the therapist began to coach Jake on how to argue with those thoughts (e.g., “My mom is safe where we left her. She’s an adult and can take care of herself. Would she let me go off with someone who would get me hurt?”). He was then instructed to start arguing with OCD silently during the duration of the exposure (the cognitive restructuring). After his SUD decreased to nominal levels, Jake was taken back to the clinic, where he and his mother were given their first homework assignment: she and Jake would go into a wooded area near their house (an item fairly low on his fear hierarchy) and wait for his anxiety to decrease naturally.

Jake’s second session began with a review of the homework assignment. His mother had driven him into a wooded area (the exposure). Both she and Jake reported that he became intensely afraid and upset, more so than his fear hierarchy would have indicated. When his mother attempted to have him argue with his OCD, Jake refused and became even more anxious and upset. At this point, his mother removed him from the situation before his anxiety had decreased, thus preventing his anxiety from decreasing and instead reinforcing his compulsions via operant condition (Mowrer’s second stage). This second session, therefore, focused on problem solving with Jake and his mother how to handle that type of situation when it happens, as well as stressing the importance of completion of exposures once they have begun. Afterwards, another exposure took place, this time in a wooded area near the clinic. At the onset of this exposure Jake reported a SUD level of 45-50, which was conducted in the same manner as the above examples. By the conclusion of the exposure, after approximately seven minutes, he reported dropping to a SUD of 5. Session concluded with homework, including problem-solving potential obstacles, which was to continue the exposures to new places, starting with a place Jake had been only once before, and then leaving him alone in the house for 10-15 minutes.

The next two sessions focused on exposures to new situations or being alone in his house or the woods. After problem solving performing the exposures with Jake and his mother during session two, homework became much more effective and Jake began showing a sharp decline in his anxiety levels and distress related to the “Going new places” items on his fear hierarchy. At this point in therapy, a more structured approach to arguing with OCD was implemented in the form of thought records (see Figure 2). These thought records help give more structure to the arguments that clients use when arguing with anxious/OCD thoughts, and should be tailored to the developmental level of the client.

Next, therapy began to focus on the next group of distressing items, “Creepy sounds and noises.” It was learned that Jake primarily performed avoidance-related compulsions when confronted with these situations (e.g., turn off the television, leave the room), which obviously reinforced those avoidant

behaviors, and that his fears became more heightened when it was dark. As with many OCD fears, creativity was needed to plan an effective exposure for during the therapy session. The therapist brought several lamps into the office, along with a copy of the soundtrack to *Bram Stoker’s Dracula* and a CD of Halloween sounds, both of which had some particularly disturbing music and noises. Jake was brought into the office, the door was shut so that no outside light could enter, and the music began playing with all the lights on. As before, Jake was asked to give SUD ratings to assist the therapist in keeping track of his anxiety level and was not allowed to escape the situation. As his anxiety approached 0, the therapist turned one of the lamps off and increased the volume of the music. This procedure was repeated until the room was completely dark, the music was very loud, and Jake reported no anxiety. At the end of session, the CDs were given to Jake and his mother to take home and use in exposures at night in Jake’s bedroom.

Therapy progressed rapidly, with Jake and his mother learning how to plan effective exposures at home and in the community, as well as continued exposures and coaching on using the thought records during therapy sessions. Within two weeks of starting intensive therapy, Jake was ready to begin exposures to the most distressing items on his fear hierarchy – spiders and roaches. Jake’s family captured a roach and a spider in jars and brought them in for this session. Jake’s mother reported that he became very scared on several occasions when trying to find the insects, including screaming and running when he thought one was on his leg. For the in session exposure, Jake first had to hold the jar with the roach in it while saying aloud what OCD was telling him (e.g., “This roach is nasty and has diseases that I will catch”) and what he was telling OCD (e.g., “It doesn’t have diseases; my mom picked it up and she’s fine; Dr. Lack picked it up and he’s fine”). He then opened the jar and waited for his anxiety to decrease naturally. The therapist then took the roach out of the jar and allowed it to crawl around on his hands and arms, modeling both how to handle the insect and that nothing would bad would happen as a result of handling it. Jake then took the roach and let it crawl on his hands, arms, legs, back, and eventually his neck, head, and face. By the end of the exposure Jake reported that he was at a SUD level of 0. After this, the exposure was repeated with the spider until Jake reported no anxiety. For homework, Jake was instructed to take the roach and spider home and repeat the exposures three times, until he felt no anxiety.

The next session, after a review of the homework assignment (where Jake had taken his shirt off and let the spider and roach crawl around on him), took place at a local pet store. The therapist had contacted the owner beforehand and recruited his assistance in performing some more spider exposures. Before stepping into the store, Jake reported that his anxiety was at a 45. The exposure began with the storeowner talking to Jake about the types of spiders (all tarantulas) that were in the store while holding a small spider. The therapist then held the spider and let it crawl on him before passing it onto Jake. He held the

The researchers found that the program significantly reduced scores on the depression scale and behavioural activation test.

spider and let it crawl on his arm and his anxiety dropped to a SUD of 10 within a few minutes. The process was repeated with three more spiders, each increasing in size and finishing with a tarantula that was as big as both of Jake's hands. While holding this last spider, Jake reported that he was at a SUD level of "half of one."

At the end of three weeks, Jake was switched from intensive outpatient to weekly outpatient therapy. He was seen weekly for a month before decreasing sessions to twice a month, then once a month, then on an as needed basis. As with all types of CBT, the main focus of OCD treatment is to help the client or client's family become his or her own therapist, learning those skills that will allow him or her to treat any new OCD symptoms that start in the future. Jake and his family were able to transfer those skills learned during therapy to the real world, allowing for large amounts of behavior change to take place in a short period and for continued maintenance of those gains over time.

Psychiatric

A notable feature of OCD is the specific effectiveness of antidepressant medications that preferentially inhibit the reuptake of serotonin, including clomipramine and selective serotonin reuptake inhibitors (SSRIs). The tricyclic antidepressant clomipramine was the first drug reported to be effective for OCD, and recent empirical evidence suggests that SSRI antidepressants are also effective in reducing the severity of OCD symptoms (Schruers et al., 2005). One limitation of using pharmacological treatments are the possible side effects that may adversely impact compliance and effectiveness (Hood, Alderton & Castle, 2001).

Current pharmacological treatments tend to focus on the use of SSRIs including fluvoxamine and sertraline. SSRIs alter the levels of the neurotransmitter serotonin in the brain, which like other neurotransmitters, aid brain cell communication (Kalat, 2004). Medications are started at low dose and gradually increased until they have a beneficial effect without the influence of major negative side effects. Antidepressant drugs are effective in the short-term treatment of individuals with OCD, however relapse is common when ceased (up to 90%; Pato, Zohar-Kadouch, Zohar, & Murphy, 1988), and it is for this reason that research suggests the benefits of using multiple techniques (Schruers et al., 2005; March et al., 2004). For example, March et al. (2004) suggests the benefits of combining pharmacological treatments with psychological interventions as this provides temporary relief of symptoms as well as long term maintenance strategies. This study recruited ninety-seven 7 to 17 year olds with OCD to undergo 12 weeks of treatment involving either CBT, the serotonin reuptake inhibitor sertraline, the combination of CBT and medication, or a placebo. Results indicated that the highest remission rates were for the combined treatment (53.6%), in comparison to other singular treatment conditions. Such findings are consistent with research conducted by Franklin et al. (2002) who noted that a combination of CBT and pharmacotherapy is predominantly more effective.

Self-help

Despite advances in the development of effective medications and behavioural therapy, less than 20% of OCD individuals are receiving treatment, which in part can be explained by the lack of failure to seek help, or due to a shortage of suitably trained CBT therapists (Broatch, 1996; Mataix-Cols & Marks, 2006). The importance of exploring self-help options is evident in the fact that there is a need for less time-intensive and more affordable therapeutic services due to service demands placed on health care professionals (Newman, Erickson, Przeworski & Dzus, 2003) and client preferences. Self-help options have the potential to help many more individuals with OCD who would otherwise remain under or untreated. A review of available self-help options for OCD revealed the use of bibliotherapy, self-help groups, computer-aided self-help, and internet information (Mataix-Cols & Marks, 2006). There are limited amounts of research that highlight the efficacy of self-help groups and bibliotherapy. However, a small open trial conducted by Fritzier, Hecker and Losse (1997) revealed a significant improvement in OCD symptoms, as rated by an assessor, after using a self-help book and five face-to-face therapy sessions.

A major component in the self-help treatment of OCD individuals is computer-aided self-help, and in particular, computer-aided vicarious exposure and behaviour therapy steps (see Lack & Storch, in press for a thorough review). Clark, Kirby, Daniels and Marks (1998) developed a computer program that used interactive animations to mimic vicarious ERP. The program was designed for OCD individuals with washing compulsions, and guided individuals to engage in interactive behaviours that cause compulsive actions. The researchers found that the program significantly reduced scores on the depression scale and behavioural activation test. Another program is BTSteps with is telephone based interactive computer program, in which clients are provided a workbook, identification number and a personal password to obtain comprehensive access at home. It is stated by Mataix-Cols and Marks (2006) that BTSteps guides users through self-ERP in nine steps, which allows the client to plan and carry out ERP, as well as to complete diaries during ERP homework sessions. Research suggests that BTSteps significantly improved the overall functioning of OCD individuals, with individuals completing the program requiring less face-to-face CBT, and reducing costs associated with therapy (Mataix-Cols & Marks, 2006).

The widespread use of the internet as a self-help tool adds a significant step in enabling psychological services to be relatively inexpensive and private (Barak, 1999). Whilst internet information has the potential to aid education, a recent concern and public health issue has been the quality of such information, as 70% of health information studies concluded that quality of information is a major problem on the internet (Eysenbach, Powell, Kuss & Sa, 2002). A study conducted by Serdobbel and Pieters (2006) evaluated the quality of OCD information across Dutch websites. Results from this study revealed that the overall quality of information was poor, thus limiting the accuracy and accessibility of the internet as a source of OCD information. Despite this, a more

One limitation of using pharmacological treatments are the possible side effects that may adversely impact compliance and effectiveness.

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comprehensive analysis of internet OCD information is required in order to provide a more detailed account on the veracity of the internet as a source of accurate and accessible bibliotherapy.

INCIDENCE AND PROGNOSIS

There is consensus within research suggesting that OCD tends to manifest either prior to or during the early to later stages of adolescence (Kalat, 2004). As indicated by Kalat (2004) OCD can initiate at most stages of development, however in 50-65% of individuals onset occurs before that age of 25, with a peak incidence around the age of 20. Early onset is more common among males, and late onset with females, however research provides mixed results, with some suggesting that the level of incidence across the genders does become similar with age (Kring et al., 2007; Schruers et al., 2005), and others stating a female predominance (Grabe et al., 2000). OCD tends to be comorbid (50-77%) with other axis one disorders, the most common being major depressive disorder as well as a variety of anxiety disorders (Grabe et al., 2000). The lifetime prevalence of OCD is on average 2-3% of the general population, which infers that approximately 450,000 Australians will develop OCD during some stage of life (MHANSW, 2006). The prognosis of OCD has improved with the development of treatment options, however, approximately 30% of individuals with OCD fail to improve with treatment (Schruers et al., 2005). Improved prognosis has been associated with positive functioning prior to and after symptom onset (Stewart et al., 2004). Specifically, research indicates that poor response to the initial treatment of OCD symptoms is associated with symptom severity in the long term (Stewart et al., 2004). In such cases symptoms are milder, occur periodically, and are briefer in duration (Schruers et al., 2005).

RECOMMENDATIONS

As outlined in the current literature review, OCD is an anxiety disorder that is defined by persistent and uncontrollable thoughts in conjunction with the perceived need to repeatedly complete certain tasks or rituals (Myers, 2001). This disorder affects approximately 2-3% of the general population (MHANSW, 2006), with a peak incidence at around 20 years of age (Kalat, 2004). Utilising a holistic framework, it has revealed that there is no unitary cause of OCD, but rather there are a variety of factors implicated, including genetic predispositions; confidence in memory; social and occupational difficulties; and stressful life events. In order to address the intrusive nature of obsessions and compulsions, a variety of treatment options have been suggested, including CBT, pharmacology and self-help.

In addition to providing a comprehensive account of OCD, the need for further research to explore the role of the internet as a form of bibliotherapy has been identified. Firstly, the internet has been scrutinized regarding the lack of monitoring and regulation, and overall quality and accessibility of information (Barak, 1999). Thus, it is suggested that there is a greater need to assess the efficacy of the internet as a tool to deliver health related information,

particularly in regards to OCD for professionals and lay people alike, as previous studies have failed to provide a comprehensive assessment of OCD internet information. Furthermore, it is suggested that this literature review provides a sound basis for evaluating diagnostic OCD internet information in addition to the bio-psycho-social nature of OCD.

References

- Abramowitz, J. (1997). Effectiveness of psychological and pharmacological treatments for obsessive-compulsive disorder: A quantitative review. *Journal of Consulting and Clinical Psychology*, 65, 44-52.
- Abramowitz, J.S., Whiteside, S.P., & Deacon, B.J. (2005). The effectiveness of treatment for pediatric obsessive-compulsive disorder: A meta-analysis. *Behavior Therapy*, 36, 55-63.
- Anderson, R.A. & Rees, C.S. (2007) Group versus individual cognitive-behavioural treatment for obsessive-compulsive disorder: A controlled trial. *Behaviour Research and Therapy*, 45, 123-137.
- Antony, M., Downie, F., & Swinson, R. (1998). Diagnostic issues and epidemiology in obsessive-compulsive disorder. In R. P. Swinson, M. M. Antony, S. Rachman, & M. A. Richter (Eds.), *Obsessive-compulsive disorder: Theory, research and treatment* (pp. 3-32). New York: Guilford Press.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Arlington, VA: Author.
- Barak, A. (1999). Psychological applications on the internet: A discipline on the threshold of a new millennium. *Applied and Preventive Psychology*, 8, 231-245.
- Barrett, P.M., & Healy, L.J. (2003). An examination of the cognitive processes involved in childhood obsessive-compulsive disorder. *Behaviour Research and Therapy*, 41, 285-299.
- Barrett, P.M., Healy-Farrell, L., & March, J.S. (2004). Cognitive-behavioral family treatment of childhood obsessive-compulsive disorder: A controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*, 43, 46-62.
- Baxter, L.R. (1992). Neuroimaging studies of obsessive-compulsive disorder. *Psychiatric Clinics of North America*, 15, 871-884.
- Bebbington, P.E. (1998). Epidemiology of obsessive-compulsive disorder. *British Journal of Psychiatry*, 35, 2-6.
- Broatch, J. (1996). Obsessive-compulsive disorder: Adding value to treatment through patient support groups. *International Clinical Psychopharmacology*, 5, 89-94.
- Burns, G.L., Keortge, S.G., Formea, G.M., & Sternberger, L.G. (1996). Revision of the Padua Inventory of Obsessive Compulsive Disorder Symptoms: Distinctions between worry, obsessions, and compulsions. *Behavior Research and Therapy*, 34, 163-173.
- Clark, A., Kirby, K., Daniels, B., & Marks, I. (1998). A pilot study of computer-aided vicarious exposure for obsessive-compulsive disorder. *Australian New Zealand Journal of Psychiatry*, 32, 268-275.
- Cooper, J. (1970). The Leyton Obsessional Inventory. *Psychological Medicine*, 1, 48-64.
- Eysenbach, G., Powell, J., Kuss, O., & Sa, E. (2002). Empirical studies assessing the quality of health information for consumers on the world wide web: A systematic review. *Journal of the American Medical Association*, 287, 2691-2700.
- Foa, E.B., & Kozak, M.J. (1996). Psychological treatments for obsessive compulsive disorder. In M.R. Mavissakalian, & R.P. Prien (Eds.), *Long-term Treatment of Anxiety Disorders*, pp. 285-309. Washington, DC: American Psychiatric Press.
- Foa, E. B., Kozak, M. J., Salkovskis, P. M., Coles, M. E. & Amir, N. (1998). The validation of a new obsessive compulsive disorder scale: The Obsessive Compulsive Inventory (OCI). *Psychological Assessment*, 10(3), 206-214.
- Foa, E.B., Liebowitz, M.R. Kozak, M.J., Davies, S.O., Campeas, R., Franklin, M.E., et al. (2005). Treatment of obsessive compulsive disorder by exposure and ritual prevention, clomipramine, and their combination: A randomized, placebo-controlled trial. *American Journal of Psychiatry*, 162, 151-161.
- Foa, E. B., Steketee, G., Grayson, J. B., Turner, R. M., & Latimer, P. (1984). Deliberate exposure and blocking of obsessive-compulsive rituals: Immediate and long-term effects. *Behavior Therapy*, 15, 450-472.

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- Franklin, M., Abramowitz, J., Bux, D., Zoellner, L., & Feeny, N. (2002). Cognitive-behavioral therapy with and without medication in the treatment of obsessive-compulsive disorder. *Professional Psychology: Research and Practice*, 33, 162-168.
- Franklin, M.E., & Foa, E.B. (2007). Obsessive-Compulsive Disorder. In D.H. Barlow (Ed.), *Clinical Handbook of Psychological Disorders, Fourth Edition*, pp. 164-215. New York, NY: Guilford Press.
- Fritzler, B., Hecker, J., & Losse, M. (1997). Self-directed treatment with minimal therapist contact: Preliminary findings from obsessive-compulsive disorder. *Behavioural Research and Therapy*, 35, 627-631.
- Fullana, M.A., Mataix-Cols, D., Caseras, X., Alonso, P., Menchón, J.M., Vallejo, J., & Torrubia, R. (2004). High sensitivity to punishment and low impulsivity in obsessive-compulsive disorder patients with hoarding symptoms. *Psychiatry Research*, 129, 21-27.
- Fullana, M.A., Mataix-Cols, D., Trujillo, J.L., Caseras, X., Serrano, F.Y., Alonso, P., Menchón, J.M., Vallejo, J., & Torrubia, R. (2004). Normal personality characteristics in obsessive-compulsive disorder and individuals with subclinical obsessive-compulsive problems. *Journal of Clinical Psychology*, 43, 387-398.
- Gothelf, D., Aharonovsky, O., Horesh, N., Carty, T., & Apter, A. (2004). Life events and personality factors in children and adolescents with obsessive-compulsive disorder and other anxiety disorders. *Comprehensive Psychiatry*, 45, 192-198.
- Grabe, H., Meyer, C., Hapke, U., Rumpf, H., Freyberger, H., Dilling, H., & John, U. (2000). Prevalence, quality of life and psychosocial function in obsessive-compulsive disorder and subclinical obsessive-compulsive disorder in northern Germany. *European Archives of Psychiatry and Clinical Neuroscience*, 250, 262-268.
- Goodman, W.K., Price, L.H., Rasmussen, S.A., Mazure, C., Fleischmann, R.L., Hill, C.L., Heninger, G.R., Charney, D.S. (1989). The Yale-Brown Obsessive Compulsive Scale: II Validity. *Archives of General Psychiatry*, 46, 1012-1016
- Hartl, T.L., Duffany, S.R., Allen, G.J., Steketee, G., & Frost, R.O. (2005). Relationships among compulsive hoarding, trauma, and attention-deficit/hyperactivity disorder. *Behaviour Research and Therapy*, 43, 269-276.
- Hoehn-Saric, R., & Greenberg, B.D. (1997). Psychobiology of obsessive-compulsive disorder: Anatomical and physiological considerations. *International Review of Psychiatry*, 9, 15-30.
- Hood, S., Alderton, D., & Castle, D. (2001). Obsessive-compulsive disorder: Treatment and treatment resistance. *Australasian Psychiatry*, 9, 118-127.
- Jonnal, A., Gardner, C., Prescott, C., & Kendler, K. (2000). Obsessive and compulsive symptoms in a general population sample of female twins. *American Journal of Medical Genetics*, 96, 791-796.
- Kalat, J. (2004). *Biological Psychology* (8th ed.), Victoria: Wadsworth.
- Koran, L., Thienemann, M., & Davenport, R. (1996). Quality of life for patients with obsessive-compulsive disorder. *American Journal of Psychiatry*, 153, 783-788.
- Kring, A., Davison, G., Neale, J., & Johnson, S. (2007). *Abnormal psychology* (10th ed.), New York: Wiley and Sons.
- Lacerda, A., Dalgalarroondo, P., Caetano, D., Camargo, E., Etchebehere, E., & Soares, J. (2003). Elevated thalamic and prefrontal regional cerebral blood flow in obsessive-compulsive disorder: A SPECT study. *Psychiatry Research: Neuroimaging*, 123, 125-134.
- Lacerda, A., Dalgalarroondo, P., Caetano, D., Haas, G., Camargo, E., & Keshavan, M. (2003). Neuropsychological performance and regional cerebral blood flow in obsessive-compulsive disorder. *Progress in Neuro-Psychopharmacology and Biological Perspectives*, 27, 657-665.
- Lack, C. W., & Storch, E. A. (in press). Computer-based treatment for Obsessive-Compulsive Disorder. *Computers in Human Behavior*.
- Lack, C.W., Storch, E.A., & Murphy, T.K. (2006). More than just monsters under the bed: Assessing and treating pediatric OCD. *Psychiatric Times*, 23 (3), 54-57.
- Lewin, A., Storch, E., Merlo, L., Adkins, J., Murphy, T., & Geffken, G. (2005). Intensive cognitive behavioral therapy for pediatric obsessive-compulsive disorder: A treatment protocol for mental health providers. *Psychological Services*, 2, 91-104.
- Lochner, C., & Stein, D. (2003). Heterogeneity of obsessive-compulsive disorder: A literature review. *Harvard Review Psychiatry*, 11, 113-132.
- March, J.S., Foa, E., Gammon, P., Chrisman, A., Curry, J., Fitzgerald, G., Sullivan, K., Franklin, M., Huppert, J., Rynn, M., Zhao, N., Zoellner, L., Leonard, H., Garcia, A., Freeman, J., & Tu, X. (2004). Cognitive-behavior therapy, sertraline, and their combination for children and adolescents with Obsessive-compulsive disorder: The pediatric OCD treatment study (POTS) randomized controlled trial. *Journal of the American Medical Association*, 292, 1969-1976.
- Mataix-Cols, D., & Marks, I. (2006). Self-help with minimal therapist contact for obsessive-compulsive disorder: A review. *European Psychiatry*, 21, 75-80.
- McGuire, P., Bench, C., Frith, C., Marks, I., Frackowiak, R., & Dolan, R. (1994). Functional anatomy of obsessive-compulsive phenomena. *British Journal of Psychiatry*, 164, 459-468.
- Mental Health Association of New South Wales. (2006). Obsessive-compulsive disorder. Retrieved March 20, 2007, from MHANSW Website: www.mentalhealth.asn.au/resources/ocd.htm
- Micallef, J., & Bin, O. (2001). Neurobiology and clinical pharmacology of obsessive-compulsive disorder. *Clinical Neuropharmacology*, 24, 191-207.
- Molina, V., Montz, R., Perez-Castejon, M.J., Martin-Loeches, M., Carreras, J.L., Calcedo, A., & Rubia, F.J. (1995). Cerebral perfusion, electrical activity and effects of serotonergic treatment in obsessive-compulsive disorder. *Neuropsychobiology*, 32, 139-148.
- Moritz, S., Rufer, M., Fricke, S., Karow, A., Morfeld, M., Jelinek, L., & Jacobsen, D. (2005). Quality of life in obsessive-compulsive disorder before and after treatment. *Comprehensive Psychiatry*, 46, 453-459.
- Mowrer, O.H. (1960). *Learning Theory and Behavior*. New York: Wiley.
- Myers, D. (2001). *Psychology* (6th ed.). New York: Worth.
- Nestadt, G., Lan, T., Samuels, J., Riddle, M., Bienvenu, O., Liang, K., Hoehn-Saric, R., Cullen, B., Grados, M., Beaty, T., & Shugart, Y. (2000). Complex segregation analysis provides compelling evidence for a major gene underlying obsessive-compulsive disorder and for heterogeneity by sex. *American Journal of Human Genetics*, 67, 1611-1616.
- Newman, M.G., Erickson, T., Przeworski, A., & Dzus, E. (2003). Self-Help and minimal contact therapies for anxiety disorders: Is human contact necessary for therapeutic efficacy? *Journal of Clinical Psychology*, 59, 251-274.
- Pato, M.T., Zohar-Kadouch, R., Zohar, J., & Murphy, D.L. (1988). Return of symptoms after discontinuation of clomipramine in patients with obsessive-compulsive disorder. *American Journal of Psychiatry*, 145, 1521-1525.
- Pauls, D., Alsobrook, J., Goodman, W., Rasmussen, S., & Leckman, J. (1995). A family study of obsessive-compulsive disorder. *American Journal of Psychiatry*, 152, 76-84.
- Pediatric Obsessive-Compulsive Disorder Treatment Study (POTS) Team. (2004). Cognitive-behavioral therapy, sertraline, and their combination for children and adolescents with obsessive-compulsive disorder: The Pediatric Obsessive-Compulsive Disorder Treatment Study Randomized Controlled Trial. *Journal of the American Medical Association*, 292, 1969-1976.
- Perani, D., Colombo, C., Bressi, S., Bonfanti, A., Grassi, F., Scarone, S., Bellodi, L., Smerladi, E., & Fazio, F. (1995). [18F] FDG PET study in obsessive-compulsive disorder. *British Journal of Psychiatry*, 166, 244-250.
- Rachman, S. (1997). A cognitive theory of obsessions. *Behaviour Research and Theory*, 35, 793-802.
- Samuels, J., & Nestadt, G. (1997). Epidemiology and genetics of obsessive-compulsive disorder. *International Review of Psychiatry*, 9, 61-72.
- Samuels, J., Nestadt, G., Bienvenu, O.J., Costa, P.T., Riddle, M., Liang, K.Y., Hoehn-Saric, R., Grados, M., & Cullen, B. (2000). Personality disorders and normal personality dimensions in obsessive-compulsive disorder. *British Journal of Psychiatry*, 177, 457-462.
- Salkovskisa, P., Shafran, R., Rachman, S., & Freeston, M.H. (1999). Multiple pathways to inflated responsibility beliefs in obsessional problems: Possible origins and implications for therapy and research. *Behaviour Research and Therapy*, 37, 1055-1072.
- Scahill, L., Riddle, M.A., McSwiggin-Hardin, M., Ort, S.I., King, R.A., et al. (1997). Children's Yale-Brown Obsessive Compulsive Scale: Reliability and validity. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36, 844-852
- Schruers, K., Koning, K., Luermans, J., Haack, M.J., & Griez, E. (2005). Obsessive-compulsive disorder: A critical review of therapeutic

Whilst internet information has the potential to aid education, a recent concern and public health issue has been the quality of such information, as 70% of health information studies concluded that quality of information is a major problem on the internet.

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perspectives. *Acta Psychiatrica Scandinavica*, 111, 261-271.

Serdobbel, Y., & Pieters, G. (2006). Obsessive-compulsive disorder and the internet: An evaluation of Dutch-language websites and quality indicators. *Dutch Journal of Psychiatry*, 49, 763-773.

Silverman, W.K. & Albano, A.M. (1996), *The Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent versions*. San Antonio, TX, Psychological Corporation.

Snider, L.A., & Swedo, S.E. (2000). Pediatric obsessive-compulsive disorder. *Journal of the American Medical Association*, 284, 3104-3106.

Stewart, S.E., Geller, D.A., Jenike, M., Pauls, D., Shaw, D., Mullin, B., Faraone, S.V. (2004). Long-term outcome of pediatric obsessive-compulsive disorder: A meta-analyses and qualitative review of the literature. *Acta Psychiatrica Scandinavica*, 110, 4-13.

Storch, E.A., Geffken, G.R., Merlo, L.J., Mann, G., Duke, D., Munson, M., Adkins, J., Grabill, K., Murphy, T.K., & Goodman, W.K. (2007). Family-based cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: comparison of intensive and weekly approaches. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 469-478.

Storch, E.A., Murphy, T.K., Geffken, G.R., Soto, O., Sajid, M., Allen, P., et al. (in press). Development of the Children's Florida Obsessive-Compulsive Inventory (C-FOCI). *Journal of Behavior Therapy and Experimental Psychiatry*.

Tükel, R., Polat, A., Özdemir, Ö., Aksüt, D., & Türksöy, N. (2002). Comorbid conditions in obsessive-compulsive disorder. *Comprehensive Psychiatry*, 43, 204-209.

Van Grootheest, D., Cath, D., Beekman, A., & Boomsma, D. (2005). Twin studies on obsessive-compulsive disorder: A review. *Twin Research and Human Genetics*, 8, 450-458.

Van Oppen, P., Van Balkom, A., De Hann, E., & Van Dyck, R. (2005). Cognitive therapy and exposure in vivo alone and in combination with fluvoxamine in obsessive-compulsive disorder: a 5-year follow-up. *Journal of Clinical Psychiatry*, 66, 1415-1437.

Vogel, P.A., Stiles, T.C., & Götestam, K.G. (2004). Adding cognitive therapy elements to exposure therapy for obsessive compulsive disorder: A controlled study. *Behavioural and Cognitive Psychotherapy*, 32, 275-290.

Wegner, D., Scheider, D., Carter, S., & White, T. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53, 5-13.

Weissman, M., Bland, R., Canino, C., Greenwald, S., Hwu, H., Lee, C., Newman, S., Oakley-Brown, M., Rubio-Stipec, M., Wickramartne, P., Wittchen, H., & Yeh, E. (1994). The cross national epidemiology of obsessive compulsive disorder: The cross national collaborative group. *Journal of Clinical Psychiatry*, 55, 5-10.

Woods, C., Vevea, J., Chambless, D., & Bayen, U. (2002). Are compulsive checkers impaired in memory? A meta-analytic review. *Clinical Psychology: Science and Practice*, 9, 353-366.

World Health Organization. (2007) Mental and behavioural disorders (F00-F99): Obsessive-compulsive disorder (chap. 5). Retrieved April 12, 2007, from <http://www.who.int/classifications/apps/icd/icd10online/>

Zald, D.H., & Kim, S.W. (2001). The orbitofrontal cortex, In S.Salloway, P Malloney, & J.D Duffy (Eds), *The frontal lobes and neuropsychiatric illness* (pp.33-69), Washington DC: American Psychiatric Press.

Table 1. Jake's fear hierarchy.

Rating (0-100)	Fear
100	
95	
90	Spiders <ul style="list-style-type: none"> • Having them crawl onto his bed while he's sleeping • Having them touch him at all • Seeing them • Seeing pictures of them • Talking about them • (Cockroaches are in same order, but about half of what spiders are)
85	Public restrooms <ul style="list-style-type: none"> • Touching the seat with hand and not washing • Flushing and not washing • Touching floor with hand • Opening door with hand
80	
75	Food becoming contaminated <ul style="list-style-type: none"> • Eating cereal that has been left out for more than one day • Eating crackers that have been left out for more than one day
70	
65	
60	Creepy sounds and noises <ul style="list-style-type: none"> • Howling • Footsteps • Creaking doors or floor • "Scooby Doo" noises (creepy music)
55	
50	
45	Going new places <ul style="list-style-type: none"> • Being in the woods at night alone or with mom • Being in woods during day with mom • Being somewhere with many unknown people around
40	<ul style="list-style-type: none"> • Being left alone inside the house • Not knowing where mom is inside the house
35	
30	
25	
20	
15	
10	

In order to address the intrusive nature of obsessions and compulsions, a variety of treatment options have been suggested, including CBT, pharmacology and self-help.

Figure 2. Sample thought record for children.

THOUGHT RECORD

What happened that made OCD pop up: _____

What OCD told me or wanted me to ask: _____

How much do you believe OCD? (1 = not at all, 10 = completely) _____

How does this make me feel? _____

What did you tell OCD to fight back? _____

What would be the.....

- Worst outcome?: _____
(if OCD was right)
- Best outcome?: _____
(if OCD was wrong)
- Most likely outcome: _____

Wrap It Up!

Even though I feel that _____ is true,
(what OCD says)
the reality is that _____.
(your arguments against OCD)

How do you feel now? _____

How much do you believe OCD now? (1 = not at all, 10 = completely) _____