

# The Psychological Treatment of Obsessive–Compulsive Disorder

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The psychological treatment of obsessive–compulsive disorder (OCD) with exposure and response prevention (ERP) methods is one of the great success stories within the field of mental health. Within the span of about 20 years, the prognosis for individuals with OCD has changed from poor to very good as a result of the development of ERP. This success notwithstanding, the procedures are far from perfect because a substantial minority of patients still either refuse treatment, drop out prematurely, or fail to benefit. I begin this article with a review of the development of ERP from early animal research on avoidance learning conducted during the 1950s. Next, I discuss the mechanisms of ERP. The bulk of the article reviews the treatment-outcome literature on ERP for OCD and includes comparisons with cognitive therapy—the “new kid on the block” with respect to psychological treatments for OCD.

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## Highlights

- Basic experimental research on humans and animal analogues of OCD serve as the basis for the development of effective psychological treatments for this complex disorder.
- Once considered treatment-resistant, OCD responds well to CBT.
- This article also discusses factors that influence treatment outcome.

**Key Words:** *obsessive–compulsive disorder, cognitive-behavioural therapy, psychological treatment, exposure, response prevention, cognitive therapy, treatment outcome*

Obsessive–compulsive disorder is characterized, first, by recurrent, unwanted, and seemingly bizarre thoughts, impulses, or doubts that evoke affective distress (obsessions, for example, that one has struck a pedestrian with an automobile); and, second, by repetitive behavioural or mental rituals performed to reduce this distress (compulsions, for example, constantly checking the rear-view mirror for injured individuals). Obsessional fears tend to be about issues related to uncertainty about personal safety or the safety of others. Compulsions are deliberately performed to reduce this uncertainty. A large study on the various presentations of OCD found that certain types of obsessions and compulsions occur together within patients (1). These include obsessions regarding contamination that are combined with decontamination rituals (for example, inappropriate washing and cleaning); obsessions regarding responsibility for harm or catastrophe

that are combined with reassurance-seeking rituals (for example, compulsive checking); and unwanted, repugnant, aggressive–violent, sexual, or blasphemous obsessional thoughts that are combined with covert compulsions or neutralizing strategies such as mental rituals, praying, repeating routine actions, and thought suppression. Some patients also have excessive concerns about lucky or unlucky numbers or worries about orderliness and symmetry.

Although many OCD sufferers recognize that their obsessional fears and rituals are senseless and excessive, others strongly believe that their rituals serve to prevent the occurrence of disastrous consequences; in other words, they have poor insight (2). Clinical observations suggest that a patient’s degree of insight can vary over time as well as across symptom categories. For example, one patient evaluated in our clinic

realized that her fear of causing her husband to die in a plane crash just by thinking about it was unrealistic (although she tried to prevent such thoughts, just to be on the safe side), yet she was strongly convinced that she would develop AIDS if she did not shower after using a public washroom. It is important to ascertain patients' degree of insight because this can affect treatment outcome, as I review further below.

The lifetime prevalence rate of OCD in adults is 2% to 3% (3). Although symptoms typically wax and wane as a function of general life stress, a chronic and deteriorating course is the norm if adequate treatment is not sought. In many cases, fears, avoidance, and rituals impair various areas of functioning, including job or academic performance, social functioning, and leisure activities. Many individuals with OCD also experience other Axis I disorders, such as mood and anxiety problems (4). This article provides an overview of the development of effective psychological treatments for OCD, together with a review of the latest treatment-outcome research. CBT is the most effective form of treatment for OCD. Therefore, I focus on this intervention.

## The Development of Effective Treatments for OCD: From the Laboratory to the Clinic

### *The Need for an Effective OCD Treatment*

Prior to the 1970s and 1980s, treatment for OCD consisted largely of psychodynamic psychotherapy derived from psychoanalytic ideas of unconscious motivation. Unfortunately, there are virtually no scientific studies assessing the efficacy of such an approach. However, the general consensus among clinicians of that era was that OCD was an unmanageable condition with a poor prognosis—which clearly demonstrates how much confidence (or perhaps how little) clinicians placed in psychodynamic psychotherapy for treating OCD. Indeed, available reports suggest that the effects of psychodynamically oriented therapies are neither robust nor durable for OCD or for anxiety disorders in general.

By the last quarter of the 20th century, however, the prognostic picture for OCD had improved drastically. This was largely because of the work of Victor Meyer (5) and other

behaviourally oriented clinicians and researchers who looked back to important animal-based research conducted in the 1950s to search for an animal analogue of OCD from which they could conceptualize and develop behaviourally based therapies. I discuss this historical event in some detail because it highlights the methods used to derive behavioural therapy for OCD from experimental findings. Despite the positive impact that this approach has had on the management of OCD and other anxiety disorders, this method of deriving treatment from experimental research remains, in the field of mental health, unique to behaviourally oriented therapies.

### *Early Laboratory Research*

The early work of Richard Solomon and his colleagues provides an elegant, yet often overlooked, animal behavioural model of OCD (6). Solomon and others worked with dogs in shuttle boxes (which were small rooms divided in 2 by a hurdle over which the animal could jump). Each half of the shuttle box was separately furnished with an electric grate that could be independently electrified to give the dog an electric shock through its paws. In addition, a light served as a conditioned stimulus. The procedure for producing the compulsive ritual-like behaviour was to pair the light with an electric shock (the shock occurred 10 seconds after the light was turned on). The dog soon learned to jump into the other compartment of the shuttle box, which was not electrified, once he had received the shock. After several trials, the dog learned to successfully avoid the shock by jumping to the nonelectrified compartment in response to the light (that is, within 10 seconds). In other words, the experimenter produced a conditioned response to the light, namely, jumping from one compartment of the box to the other.

Once this conditioned response was established, the electricity was disconnected, and the dog never received another shock. Nevertheless, the animal continued to jump across the hurdle each time the conditioned stimulus (that is, the light) was turned on. This continued for hundreds (and in some cases, thousands) of trials, despite no actual risk of shock. Apparently, the dog had acquired an obsessive-compulsive habit—jumping across the hurdle—which reduced his conditioned fear of shock and thus was maintained by negative reinforcement (the removal of an aversive stimulus such as emotional distress). This serves as an animal analogue to human OCD, where compulsive behaviour is triggered by fear associated with situations or stimuli such as toilets, floors, or obsessional thoughts (conditioned stimuli) that pose little or no actual risk of harm. This fear is then reduced by avoidance and compulsive rituals (for example, washing) that serve as an escape from distress and, in doing so, are negatively reinforced (that is, they become habitual).

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### Abbreviations used in this article

|        |                                       |
|--------|---------------------------------------|
| CBT    | cognitive-behavioural therapy         |
| CT     | cognitive therapy                     |
| EE     | expressed emotion                     |
| ERP    | exposure and response prevention      |
| OCD    | obsessive-compulsive disorder         |
| RCT    | randomized controlled trial           |
| SD     | standard deviation                    |
| Y-BOCS | Yale-Brown Obsessive Compulsive Scale |

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Solomon and his colleagues also attempted to reduce the compulsive jumping behaviour of their "obsessive-compulsive" dogs, using various techniques, the most effective of which involved a combination of procedures now known as ERP. Specifically, the experimenter turned on the conditioned stimulus (light), an *in vivo* exposure technique, and increased the height of the hurdle in the shuttle box so that the dog was unable to jump (response prevention). When this was done, the dog immediately showed signs of a strong fear response by running around the chamber, jumping on the walls, defecating, urinating, and yelping. Clearly, he expected to receive a shock. Gradually, however, this emotional reaction subsided until finally, the dog displayed calmness without the slightest hint of distress. In behavioural terms, this experimental paradigm produced extinction. After several such extinction trials, the entire emotional response (that is, fear of shock) was extinguished, such that, even when the light was turned on and the height of the hurdle was lowered, the dog did not jump.

During the 1960s and 1970s, behaviourally oriented researchers became interested in adapting similar treatment paradigms to human beings with OCD (7). Of course, no electric shocks were used, but the adaptation was as follows: After they provided informed consent, patients with OCD handwashing rituals were seated at a table with a container of dirt and miscellaneous garbage. Placing his own hands in the mixture, the experimenter asked the patient to do the same and explained that he or she would not be permitted to wash his or her hands for some length of time. When the patient began the procedure, an increase in anxiety, fear, and urges to wash his or her hands, was (of course) observed. This increase in distress was conceptualized as akin to the dogs' response when the light was turned on and the hurdle had been increased in height to make jumping impossible. However, like the dogs, the patients eventually demonstrated a substantial reduction in fear and in the urge to wash, thus demonstrating therapeutic extinction. This procedure was repeated on subsequent days, the hypothesis predicting that, after some time, extinction would be complete and OCD symptoms would be reduced.

#### *From the Laboratory to the Clinic*

Meyer is credited with being the first to report a study of the effects of ERP treatment for OCD (5). He persuaded patients hospitalized with OCD to deliberately confront, for 2 hours each day, situations and stimuli they usually avoided (for example, floors or bathrooms). The purpose of confrontation was to induce obsessional fears and urges to ritualize. The patients were also instructed to refrain from performing compulsive rituals (for example, washing or checking) after exposure. Ten of Meyer's 15 patients responded extremely well to this therapy, and the remainder showed partial improvement. Follow-up studies conducted several years later found that

only 2 of those who were successfully treated had relapsed (8).

Contemporary ERP entails therapist-guided, systematic, repeated, and prolonged exposure to situations that provoke obsessional fear, along with abstinence from compulsive behaviours. This can occur in the form of repeated actual confrontations with feared low-risk situations (that is, *in vivo* exposure) or in the form of imagined confrontation with the feared disastrous consequences of low-risk situations (that is, imaginal exposure). For example, an individual who fears being held responsible for harm if he or she writes the number 666, or for a robbery if he or she leaves home without double-checking that the door is locked, would practise writing 666 or practise leaving home after rapidly closing and locking the front door. The individual would also practise imagining being held responsible for harming others or causing a burglary because of these exposure tasks.

Refraining from compulsive rituals (response prevention) is a vital component of treatment because the performance of such rituals to reduce obsessional anxiety would prematurely discontinue exposure and rob the patient of learning, first, that the obsessional situation is not truly dangerous and, second, that anxiety subsides on its own even if the ritual is not performed. Thus successful ERP requires the patient to remain in the exposure situation until the obsessional distress decreases spontaneously, without attempting to reduce the distress by withdrawing from the situation or by performing compulsive rituals or neutralizing strategies.

Contemporary ERP can be delivered in several ways. One highly successful format comprises a few hours of assessment and treatment planning followed by 16 twice-weekly treatment sessions lasting about 90 to 120 minutes each and spaced over about 8 weeks (9). Generally, the therapist supervises the exposure sessions and assigns self-exposure practice to be completed by the patient between sessions. Depending on the patient's symptom presentation and the practicality of confronting actual feared situations, treatment sessions involve varying amounts of actual and imaginal exposure practice.

A course of ERP typically begins with the assessment of obsessional thoughts, ideas, and impulses; of stimuli that trigger the obsessions; of rituals and avoidance behaviour; and of the anticipated harmful consequences of confronting feared situations without performing rituals (that is, the cognitive links between obsessions and compulsions). Before actual treatment commences, the therapist socializes the patient to a psychological model of OCD based on the principles of learning and emotion (for example, 10). The patient is also given a clear rationale for how ERP is expected to help reduce OCD. This psychoeducational component is an important step in therapy because it helps to motivate the patient to tolerate the

distress that typically accompanies exposure practice. A helpful rationale includes information about how ERP involves the provocation and reduction of distress during prolonged exposure. Information gathered during the assessment sessions is then used to plan, collaboratively with the patient, the specific exposure exercises that will be pursued.

In addition to explaining and planning a hierarchy of exposure exercises, the educational stage of ERP must also acquaint patients with response prevention procedures. Importantly, the term "response prevention" does not imply that therapists actively prevent patients from performing rituals. Instead, therapists must convince patients to resist urges to perform rituals on their own. Self-monitoring of rituals is often used in support of this goal.

The exposure exercises typically begin with moderately distressing situations, stimuli, and images and escalate to the most distressing situations, which must be confronted during treatment. Beginning with exposure tasks that evoke less anxiety increases the likelihood that patients will learn to manage their distress and complete the exposure exercise successfully. Moreover, success with initial exposures increases confidence in the treatment and helps motivate patients to persevere during later, more difficult exercises. At the end of each treatment session, the therapist instructs the patient to continue exposure for several hours alone and in different environmental contexts. Exposure to the most anxiety-evoking situations is not left to the end of the treatment but, rather, is practised about mid-way through treatment. This tactic allows patients ample opportunity to repeat exposure to the most difficult situations in different contexts that allow generalization of treatment effects. During the later treatment sessions, the therapist emphasizes the importance of the patient's continuing to apply the ERP procedures learned during treatment.

### **ERP Mechanisms of Action**

Three mechanisms are thought to be involved in the reduction of obsessions and compulsions during ERP: a behavioural mechanism, a cognitive mechanism, and changes in self-efficacy. From a behavioural perspective, ERP is effective because it provides an opportunity for the extinction of conditioned fear responses. Specifically, repeated and uninterrupted exposure to feared stimuli produces habituation—an inevitable natural decrease in conditioned fear. Response prevention fosters habituation by blocking the performance of anxiety-reducing rituals that would foil the habituation process. Extinction of conditioned anxiety occurs when the once-feared obsessional stimulus is repeatedly paired with the nonoccurrence of feared consequences and the eventual reduction of anxiety.

From a cognitive perspective, ERP is effective because it corrects dysfunctional beliefs (such as overestimates of threat) that underlie OCD symptoms by presenting patients with information that disconfirms these beliefs. For example, when a patient confronts feared situations and refrains from rituals, he or she finds out that obsessional fear declines naturally (habituation) and that feared negative consequences are unlikely to occur. This evidence is processed and incorporated into the patient's belief system. Thus compulsive rituals to reduce anxiety and prevent feared disasters become unnecessary (redundant).

Finally, ERP helps patients gain self-efficacy by helping them to master their fears without having to rely on avoidance or safety behaviours. The importance of this sense of mastery is an often-overlooked effect of ERP.

Foa and Kozak have drawn attention to 3 indicators of change during exposure-based treatment (11). First, physiological arousal and subjective fear must be evoked during exposure. Second, fear responses gradually diminish during the exposure session (within-session habituation). Third, the initial fear response at the beginning of each exposure session declines across sessions (between-session habituation).

### **Assessment of OCD Symptoms: The Yale-Brown Obsessive Compulsive Scale**

The use of assessment instruments that are psychometrically reliable, valid, and sensitive to change is important in assuring that any improvement in symptoms is really attributable to the treatments and not to fluctuations in a poor assessment instrument. The Y-BOCS (12,13), a semistructured clinical interview, is considered the gold standard measure of OCD symptoms. Owing to its respectable psychometric properties (14), the Y-BOCS is widely used in OCD treatment-outcome research; it thus provides an excellent measure by which to compare the results of treatment across studies. Therefore, it is important to briefly discuss what scores on the Y-BOCS indicate clinically before I review the treatment-outcome literature.

When administering the Y-BOCS, the interviewer rates the following parameters for both obsessions (items 1 to 5) and compulsions (items 6 to 10): time, interference with functioning, distress, resistance, and control. Items are rated on a scale ranging from 0 (no symptoms) to 4 (extreme). The total score is the sum of the 10 items and therefore ranges from 0 to 40. Y-BOCS scores of 0 to 7 indicate subclinical OCD, 8 to 15 indicate mild symptoms, 16 to 25 indicate moderate symptoms, 26 to 35 indicate severe symptoms, and 36 to 40 indicate extreme severity.

## The Efficacy of ERP

Over the last 30 years, numerous investigations of ERP for treating OCD have been conducted worldwide. Studies completed in England (15), Holland (16), Greece (17), and the United States (18), with over 500 patients and numerous different therapists, have affirmed the generalizability of ERP's beneficial effects. RCTs have provided particularly strong evidence of the superiority of ERP over credible control therapies such as progressive muscle relaxation training (for example, 19), anxiety management training (20), and pill placebo (21). Intensive ERP has also been found more effective than the antidepressant clomipramine, believed to be the most effective form of pharmacotherapy for OCD (21). For patients receiving ERP, Y-BOCS reductions typically exceed 50% to 60%, and posttreatment scores average between 9 and 13, indicating mild residual symptoms. Importantly, despite this clinically significant improvement in symptoms, patients rarely achieve complete symptom reduction with ERP (22).

### *Treatment of Pure Obsessionals*

Whereas many individuals with OCD exhibit overt compulsive rituals (for example, washing or checking), a substantial subset report mental rituals and other subtle anxiety-reduction strategies that are difficult to distinguish from obsessional (anxiety-evoking) phenomena. These patients, often labelled as "pure obsessionals," were once considered nonresponsive to cognitive-behavioural treatments (23). Recently, however, Freeston and colleagues conducted an RCT in which they compared subjects receiving a form of ERP, developed specifically for OCD without overt rituals, with a waiting-list control group (24). This treatment primarily involved repeated exposure to descriptions of obsessional thoughts (via audiotapes) and abstinence from mental ritualizing. Mean pre- and posttreatment Y-BOCS scores for the ERP group were 25.1 and 12.2, respectively. As expected, there was no improvement in the wait-list group, whose Y-BOCS pre- and posttreatment scores were 21.2 and 22.0, respectively. Importantly, at 3-month follow-up, ERP patients had maintained their gains, as evidenced by a mean Y-BOCS score of 10.8. These results demonstrate that ERP procedures may be effectively varied to accommodate the heterogeneous phenomenology of OCD patients, including those with obsessional symptoms and mental rituals.

## Cognitive Therapy for OCD

### *Basis of CT*

Given the challenges of ERP (that is, high levels of anxiety produced during exposure), some clinicians and researchers have turned to CT approaches that incorporate less prolonged exposure to fear cues and that have led to advances in the treatment of other anxiety disorders. The basis of CT is the rational

and evidence-based challenging and correction of faulty and dysfunctional thoughts and beliefs thought to underlie obsessional fear (25). Specifically, cognitive models of OCD begin with the well-established finding that intrusions (thoughts, images, and impulses that intrude into consciousness, such as unwanted thoughts of harming a loved one) are experienced by most people (normal obsessions) but can develop into obsessions when appraised as posing a threat for which the individual is personally responsible (10). For example, an OCD patient might think that "Having thoughts about harming Mother means I'm a dangerous person who must take extra care to ensure that I don't lose control." Such appraisals evoke distress and motivate the individual to try to suppress or remove the unwanted intrusion (for example, by replacing it with a "good" thought) and to try to prevent any harmful events associated with the intrusion (for example, by avoiding driving).

According to the cognitive model, compulsions are conceptualized as efforts to remove intrusions and to prevent any perceived harmful consequences. Salkovskis advanced 2 main reasons to explain why compulsions become persistent and excessive (10). First, they are reinforced by immediate distress reduction and by temporary removal of the unwanted thought (negative reinforcement, as in the conditioning models of OCD). Second, they prevent the individual from learning that his or her appraisals are unrealistic (for example, the individual fails to learn that unwanted harm-related thoughts do not lead to acts of harm). Compulsions influence the frequency of intrusions by serving as reminders of intrusions and thereby triggering their reoccurrence. For example, compulsive handwashing can remind the individual that he or she may have become contaminated. Attempts at distracting oneself from unwanted intrusions may paradoxically increase their frequency, possibly because the distractors become reminders (retrieval cues) of the intrusions. Compulsions can strengthen one's perceived responsibility. That is, the absence of the feared consequence after performing the compulsion reinforces the belief that the individual is responsible for removing the threat.

Although Salkovskis emphasizes the importance of responsibility appraisals and beliefs (10), several cognitive-behavioural theorists have proposed that other types of dysfunctional beliefs and appraisals are also important in OCD (25). Thus contemporary cognitive-behavioural theories have extended the work of Salkovskis to propose that various types of dysfunctional beliefs and appraisals, in addition to those pertaining to responsibility, play an important role in OCD's etiology and maintenance. Although contemporary belief and appraisal models differ from one another in some ways, their similarities generally outweigh their differences.

**Table 1 Domains of dysfunctional beliefs associated with OCD**

| Belief domain               | Description   |
|-----------------------------|---|
| Excessive responsibility    | Belief that one has the special power to cause, and (or) the duty to prevent, negative outcomes   |
| Overimportance of thoughts  | Belief that the mere presence of a thought indicates that the thought is significant (for example, the belief that the thought has ethical or moral ramifications or that thinking the thought increases the probability of the corresponding behaviour or event) |
| Need to control thoughts    | Belief that complete control over one's thoughts is both necessary and possible   |
| Overestimation of threat    | Belief that negative events are especially likely and would be especially awful   |
| Perfectionism               | Belief that mistakes and imperfection are intolerable   |
| Intolerance for uncertainty | Belief that it is necessary and possible to be completely certain that negative outcomes will not occur   |

A major contemporary cognitive model is that developed by the Obsessive Compulsive Cognitions Working Group (26–28). This international group of over 40 investigators shares an interest in understanding the role of cognitive factors in OCD. Extending the work of Salkovskis and others, they have reached a consensus regarding the most important underlying beliefs in OCD (26). They identified responsibility beliefs and other belief domains (listed in Table 1) that were said to give rise to corresponding appraisals. Two self-report measures—the Obsessional Beliefs Questionnaire and the Interpretations of Intrusions Inventory—were developed to assess these domains (27).

#### *From Theory to Practice*

Typically, at the beginning of CT, the therapist presents a rationale for treatment incorporating the notion that intrusive obsessional thoughts are normal experiences and not harmful or indicative of anything important. Rather, OCD arises because the patient appraises the intrusions as significant in a way that is distressing (for example, “Thoughts of violence are equivalent to committing violent acts”). Misappraisal of intrusions in this way leads to preoccupation with the unwanted thought as well as with responses, such as avoidance and compulsive rituals, that unwittingly maintain the obsessional preoccupation and anxiety (10).

Various techniques are used to help patients correct their erroneous beliefs and appraisals, such as didactic presentation of educational material and Socratic dialogue aimed at helping

patients recognize and correct dysfunctional thinking patterns. Behavioural experiments, in which patients enter and observe situations that exemplify their fears, are often used to facilitate the collection of information that will allow patients to revise their judgments about the degree of risk associated with obsessions. Although the rationale for behavioural experiments in CT is somewhat different from the rationale for exposure exercises in ERP, there is often procedural overlap, and fundamental differences between the 2 techniques may be difficult to discern.

A few specific cognitive techniques used in the treatment of OCD are as follows: Where patients overestimate personal responsibility, the “pie technique” (25) has them give an initial estimate of the percentage of responsibility that would be attributable to them if a feared consequence were to occur. The patient then generates a list of the parties (other than himself or herself) who would also have some responsibility for the feared consequence. The patient then draws a pie chart, each slice of which represents one of the responsible parties identified. Next, the patient labels all parties’ slices according to their percentage of responsibility and labels his or her own slice last. By the exercise’s end, it is generally clear to patients that most of the responsibility for the feared event would not be their own. For patients with difficulty discriminating between unwanted obsessional thoughts and actions, the cognitive continuum technique has them rate how immoral they perceive themselves to be for having the intrusive obsessional

thoughts. Next, patients rate the morality level of other individuals who have committed acts of varying degrees of immorality (for example, a serial rapist or abusive parents). Then, patients again rate themselves and reevaluate how immoral they are for simply experiencing intrusive thoughts.

### ***CT Compared With ERP***

Four studies that used the Y-BOCS have compared CT with variations of ERP. van Oppen and others randomly assigned patients to either 16 sessions of CT or 16 sessions of self-controlled ERP (all exposure was conducted by the patient without therapist supervision) (29). Both treatments led to an improvement in OCD symptoms, although CT was more effective than ERP (Y-BOCS reductions were 53% and 43%, respectively). Importantly, the brief and infrequent therapist contact (weekly 45-minute sessions), along with reliance on patients to manage all exposure practice on their own, likely accounted for the relatively modest effects of ERP in this study. Moreover, CT involved behavioural experiments that resembled exposure, which blurred the distinction between the 2 treatments. Only after behavioural experiments were introduced (at the sixth session) did symptom reduction in the CT group approach that of ERP. Thus it is possible that the exposure component of behavioural experiments is key to the efficacy of CT. Using a sample that overlapped with the van Oppen and others study, van Balkom and others found no significant difference between CT with behavioural experiments and self-controlled ERP (30).

In a study by Cottraux and others, CT involving 20 hours of therapist contact over 16 weeks was compared with a similar regimen of therapist-supervised and homework ERP (31). The 2 treatments produced comparable outcomes at posttreatment (Y-BOCS reductions of 42% to 44%). At 1-year follow-up, patients treated with ERP improved further from their posttreatment status (follow-up mean Y-BOCS score, 11.1), whereas this was not the case with CT (follow-up mean Y-BOCS score, 15.0).

Finally, McLean and others compared the 2 treatment approaches as conducted in group settings (32). Patients received 12 weekly, 2.5-hour group sessions (with 6 to 8 participants per group) of either CT or ERP involving in-session and homework exposures. Both treatments were more effective than a wait-list condition, and ERP was associated with greater improvement than CT at both posttreatment (40% and 27% Y-BOCS score reductions, respectively) and follow-up (21% and 41% Y-BOCS score reductions, respectively).

Although some earlier studies suggest that ERP and CT have similar efficacy for OCD (for example, 33), interpretation of these results as indicating equivalent success for these 2 types of treatment is questionable because both treatments yielded minimal improvements in most of these early studies. ERP

outcome was likely attenuated by the use of suboptimal procedures (for example, lack of therapist-supervised exposure), and CT programs were possibly enhanced by behavioural experiments that likely have effects similar to unsupervised exposure. Using metaanalytic methods, we found that behavioural experiments improve the efficacy of CT for OCD (34). In later studies that incorporate in-session exposure within ERP protocols, the treatment based on behavioural theory appears to be superior to CT.

### ***Adding CT to ERP***

To examine whether adding elements of CT would improve response to ERP, Vogel, Stiles, and Götestam (35) conducted a controlled study in which 35 individuals with OCD were randomly assigned to receive either ERP plus CT ( $n = 16$ ) or ERP plus relaxation therapy ( $n = 19$ ). Relaxation therapy was added as a placebo procedure to control for the effects of adding additional techniques to ERP. Results indicated that both therapy programs were superior to the wait-list condition. Among treatment completers, Y-BOCS scores were reduced from 25.1 (ERP + CT) and 23.4 (ERP + relaxation) at pretreatment to 16.4 (ERP + CT) and 11.3 (ERP + relaxation) at posttreatment and to 13.3 (ERP + CT) and 10.2 (ERP + relaxation) at 1-year follow-up. Statistical analyses indicated a nonsignificant trend toward superiority of ERP + relaxation therapy at posttreatment, but this difference disappeared at the follow-up assessment. In addition, the inclusion of CT was useful in reducing dropout. Thus there appear to be benefits to incorporating CT techniques along with ERP.

Clinically speaking, just as exposure adds to the benefits of CT (34), CT probably adds to the effects of ERP. It is unfortunate that most published accounts of ERP (for example, 36) fail to fully describe the informal cognitive procedures that likely contribute to its efficacy. For example, during ERP, patients often need to be persuaded that exposure to fear cues will be beneficial for them. This typically requires discussion of fear-related beliefs and assumptions (for example, overestimates of danger). Nonetheless, although CT techniques are important during ERP, the research suggests that CT should accompany, rather than replace, systematic prolonged and repeated therapist-supervised ERP. That is, cognitive interventions are best used to "tenderize" distorted cognitions that underlie obsessional fears, thereby creating the conditions for patients to comply with ERP procedures.

### **Effectiveness Research**

Although RCTs have yielded sound evidence that ERP reduces OCD symptoms, these studies employ highly selective patient samples that are not necessarily representative of the typical treatment-referred OCD patient. For example, despite the high frequency with which comorbid conditions exist in patients with OCD, individuals with comorbid

disorders (for example, Axis II disorders or major depression) are usually excluded from RCTs. Effectiveness studies are designed to address these methodological shortcomings and examine the effects of treatments in highly representative patient samples treated in general clinical settings. The aim of effectiveness research is therefore to bridge the gaps between research and clinical practice.

The largest effectiveness study of ERP included 110 patients treated on a fee-for-service basis in an outpatient setting (37). Treatment included 3 weeks of daily 2-hour ERP sessions. No patients were excluded for reasons of age, comorbidity, previous treatment failure, or medical problems. In fact, one-half of the sample had comorbid Axis I or Axis II diagnoses, and 61% were also using serotonergic medication. Patients were only excluded from the study if they were suffering from active psychosis, substance abuse, or suicidal ideation (all these conditions are contraindications for ERP in any setting; 38). An intent-to-treat analysis indicated considerable improvement: mean Y-BOCS scores improved from 26.79, SD 4.89, to 11.81, SD 7.30. This is equivalent to a 60% reduction in OCD symptoms. This study suggests that the effects of ERP extend beyond the highly selected patient samples treated in research studies.

### **Predictors of Improvement**

While ERP is effective for most OCD patients who receive this treatment, about 25% to 30% of patients who begin ERP drop out of therapy prematurely. Among those who remain in treatment, about 80% respond well, yet 20% or more do not. Therefore, about 50% of patients referred with OCD are not significantly improved with ERP, and it is important to consider this alongside the impressive data for ERP's effectiveness. Substantial effort has recently gone into investigating factors that might predict poor treatment response. Below, I describe some of the recent research on predictors of ERP outcome and consider the following variables: insight into OCD symptoms, depression, and family expressed emotion.

#### ***Insight***

In the DSM-IV Field Trial for OCD, Foa and colleagues found that some patients hold strongly fixed beliefs that their obsessional fears are realistic and that compulsive rituals are necessary to prevent disastrous consequences (2). Foa, Abramowitz, Franklin, and Kozak examined whether the presence of such fixed beliefs is related to treatment outcome with ERP (39). In their study, 20 OCD patients received an intensive (daily) 3-week ERP program. Eleven patients articulated specific obsessional fears of disastrous consequences (for example, that if they did not touch all 4 walls, their parents would die), whereas 9 did not. At pretreatment, mean Y-BOCS scores did not differ between these 2 groups (overall mean 25.20). However, at posttreatment, patients with

articulated fears of disasters tended to improve more than those who did not articulate these kinds of fears (posttreatment Y-BOCS mean scores were 8.2 and 14.9, respectively). Although this difference was not statistically significant ( $P = 0.06$ ), the authors concluded that the inability to articulate feared consequences of exposure decreases the therapist's ability to contrive exposure exercises that provide disconfirming information. This, in turn, could hinder treatment with ERP.

Of the 11 patients with articulated feared consequences in the Foa and others study, 5 showed poor insight into the irrationality of their obsessional fears (39). A comparison of outcome indicated that these individuals showed a poorer response to ERP, relative to patients who showed good insight that their obsessional fears were senseless. To explain this finding, Foa and others speculated that patients with poor insight have difficulty learning information that is inconsistent with their OCD beliefs. Alternatively, because of their extreme fear, these patients may not adhere to ERP instructions as closely as do patients with better insight. The findings from this small study highlight the importance of assessing OCD patients' degree of insight into the senselessness of their symptoms. Although more studies with larger samples are necessary, insight is likely an important prognostic indicator of response to ERP.

#### ***Comorbid Depression***

Depression often coexists with OCD (4). Using a large sample of 87 patients, Abramowitz and colleagues examined the effects of comorbid depressive symptoms on ERP outcome (40). They divided patients into groups without depression, with mild depression, with moderate depression, and with severe depression on the basis of pretreatment scores on the Beck Depression Inventory (41). Results indicated attenuated outcome only for the group with the most severe depression. The authors suggested that, because of their high emotional reactivity, individuals with severe depression fail to undergo the decrease in anxiety-distress that occurs following extended exposure to feared stimuli. Thus they do not have the therapeutic experience of feeling comfortable in the presence of feared stimuli and therefore fail to learn that obsessive doubts are unrealistic. Motivational difficulties, which often accompany depression, may also account for poor treatment outcome.

Abramowitz and Foa compared outcome of ERP for OCD patients with and without a comorbid diagnosis of major depression (42). They found that, although the presence of major depression was not related to treatment failure per se, patients without depression had significantly lower posttreatment and follow-up Y-BOCS scores than did patients with an additional diagnosis of depression.

### Expressed Emotion

The way in which family members respond to a relative with OCD (or any problem) is called "expressed emotion." Researchers have conceptualized EE as including emotional overinvolvement, hostility, and perceived criticism. To determine whether these family interaction variables play a role as predictors of response to ERP, Chambless and Steketee conducted a study in which patients with OCD ( $n = 60$ ) and patients with agoraphobia ( $n = 41$ ), together with their families, were administered measures of EE prior to beginning treatment (43). The most consistent predictor of negative treatment outcome was hostility: when relatives were hostile to the identified patient, the odds of premature termination were about 6 times greater than when relatives were not hostile. Hostility was also associated with poorer response in patients who completed treatment. Interestingly, once hostility was statistically controlled, criticism had a positive effect. This suggests that, when relatives express dissatisfaction with patients' symptoms but do not express personal rejection, criticism may have motivational properties that enhance treatment response. This underscores the importance of educating family members about OCD and about how to therapeutically assist with ERP exercises during treatment.

### Summary and Future Directions

Recent research has demonstrated that CBT using ERP is the most effective short- and long-term treatment for OCD. These encouraging findings notwithstanding, full remission is not the standard. Evidence from recent effectiveness studies suggests that ERP is transportable to nonresearch settings and therefore should be a first-line treatment modality for OCD in all settings. Although response to treatment is highly variable, we are beginning to uncover factors that may reliably predict poorer response, such as poor insight into the senselessness of obsessional fears, severe depression, and family hostility.

Although the research to date has addressed many critical issues in the treatment of OCD, important topics still require further study. For example, a treatment program that includes training family members about OCD, its treatment, and how to effectively assist with a loved one's therapy would be useful, given the high prevalence of relational problems in families of OCD patients. Motivation to begin treatment, especially given the anxiety-evoking nature of ERP, is often a problem. Thus readiness programs, in which patients read case histories or discuss treatment with former patients, might decrease refusal rates and increase treatment compliance. From the clinician's perspective, providing successful ERP can be a challenge, and very few centres offer the training needed to become proficient in these procedures. Therefore, development of programs for psychology and psychiatry trainees might also improve access to this effective therapy.

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### Résumé : Le traitement psychologique du trouble obsessionnel-compulsif

Le traitement psychologique du trouble obsessionnel-compulsif (TOC) à l'aide de méthodes d'exposition avec prévention de la réponse (EPR) est une des grandes réussites du domaine de la santé mentale. En l'espace de quelque 20 ans, le pronostic des personnes souffrant de TOC est passé de médiocre à très bon, par suite de la mise au point de l'EPR. Nonobstant ce succès, les interventions sont loin d'être parfaites, car une minorité substantielle de patients soit refusent le traitement, soit abandonnent prématurément, soit n'en retirent aucun bénéfice. Cet article commence par un sommaire de l'élaboration de l'EPR, depuis les premières recherches zootechniques sur l'apprentissage de l'évitement, menées dans les années 1950. Ensuite, je présente les mécanismes de l'EPR. La majorité de l'article passe en revue la documentation des résultats du traitement par l'EPR pour le TOC et comprend des comparaisons avec la thérapie cognitive, la « nouvelle venue » au sein des traitements psychologiques du TOC.

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