

Cognitive-Behavioral Therapy for Obsessive-Compulsive Disorder: 2021 Update

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In this update of a previous review, the authors discuss cognitive-behavioral therapy (CBT) with exposure and response prevention for obsessive-compulsive disorder (OCD). This efficacious modality avoids side effects common to psychotropic medication and reduces risk of relapse once treatment has ended. Psychotherapy involves identification and ranking of stimuli that provoke obsessions, exposure to these stimuli while preventing compulsions, and cognitive restructuring. The family of the OCD patient plays a significant role in treatment. This

article includes expanded research on family-focused CBT and treatment of pediatric OCD. The family's accommodation and emotional response to a patient's symptoms may interfere with therapy and perpetuate the disorder. The treatment of pediatric OCD involves the same considerations. However, the form of obsessions and compulsions may differ and therapeutic techniques are modified to make them age appropriate.

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Cognitive-behavioral therapy (CBT) remains one of the most effective treatments for obsessive-compulsive disorder (OCD). In this update of a previous article (1), we define CBT, review the evidence for the efficacy of CBT for OCD, provide a case example and sample treatment plans, and discuss family factors that affect treatment outcome. In addition, we discuss group and family-based modalities to administer CBT and applications of CBT for children with OCD.

DEFINING CBT

Over the years, CBT has come to represent a blending of techniques to modify cognitions and behavior. In traditional cognitive therapy, faulty thoughts and beliefs are targeted (2–4). In behaviorally focused treatment, termed “exposure and response prevention” (ERP), patients engage in exposure to stimuli that trigger obsessions and are encouraged through various techniques to refrain from performing compulsions (5).

The American Psychiatric Association (APA) guidelines (6) support the use of cognitive therapy and ERP but note that there is more evidence for the efficacy of ERP. A meta-analysis (7) found that cognitive therapy and ERP produce very similar effect sizes, although a larger amount of data exist in support of ERP. This finding led to the recommendation that ERP be considered as the first-line psychotherapeutic treatment for OCD. In practice, we recommend a combination of cognitive and behavioral techniques.

EFFICACY OF CBT MONOTHERAPY

A discussion of the superiority of CBT monotherapy compared with progressive muscle relaxation, anxiety management training, and systematic relaxation was provided in our 2015 review (1). Head-to-head comparator trials of CBT versus medication are few. A recent meta-analysis (8) found there was insufficient evidence to determine the superiority of CBT-ERP compared with medication. Although comparison data are few, it is important to note that ERP may reduce risk for relapse once medication is discontinued (1).

CBT COMBINED WITH PHARMACOTHERAPY OR OTHER PSYCHOTHERAPY

The APA practice guidelines (6) state that modest evidence exists to support the use of CBT in augmentation of selective serotonin reuptake inhibitors (SSRIs) (1). CBT in combination with medication has been found to have greater efficacy than medication or CBT alone in several studies (1). APA treatment guidelines (6) recommend combination therapy for co-occurring disorders that are responsive to serotonin reuptake inhibitors, for severe OCD symptoms, and for patients who wish to limit the duration of pharmacotherapy. A recent meta-analysis (8) concurred with the recommendation to provide concurrent CBT and medication in severe cases of OCD.

Recently, acceptance and commitment therapy (ACT) has been studied as an alternative or complement to CBT-ERP. A full discussion of ACT is beyond the scope of this article.

In brief, rather than repeated exposures to anxiety-provoking stimuli, ACT focuses on strategies to encourage engagement in life activities despite the presence of obsessions. ACT encourages patients to engage in behavior consistent with their life values and to willingly approach feared situations in order to achieve important life goals. Multiple studies of ACT (9–14) have shown low drop-out rates, positive ratings by participants, and decreases in OCD symptoms and depression.

Because patients are often reluctant to participate in treatment of OCD, motivational interviewing has been studied to enhance engagement. Research examining motivational interviewing for OCD has been limited to small trials. Evidence suggests this technique can be useful to encourage patients to enter psychotherapy and to maintain participation in psychotherapy (15), although the duration of benefit is unclear (16).

CASE EXAMPLE

The following case example is of a fictional character incorporating elements of personal histories from multiple patients. This case is not based on an individual.

Ms. H, a 46-year-old woman, presented for psychiatric evaluation of possible OCD. Ms. H had been hospitalized 2 months prior for a severe skin infection. Ms. H reported a history of anxiety beginning in childhood. When she was a child, she worried that someone might break into their home, and she repeatedly asked her parents to check that the doors and windows were locked. Following the skin infection and hospitalization 2 months ago, Ms. H experienced a significant increase in anxiety. She complained of a persistent fear of contracting a second skin infection or some other life-threatening illness. Ms. H's fear of contracting an illness had become so severe that she rarely ventured out of her apartment, because she feared coming in contact with germs. She developed strict rituals for cleaning utensils and washing her hands. Food could be eaten from only freshly opened packages. Ms. H reported that these rituals and rules provided her with reassurance that she was less likely to become sick. Ms. H entered treatment at the urging of her sister. During the interview, the clinician noticed that Ms. H's hands were red and abraded. The clinician also noted that Ms. H frequently asked her sister if she thought there were germs in the office. Ms. H's sister would calm her by repeatedly stating "I'm sure you won't get sick."

Ms. H elected to engage in a trial of CBT. During the first several sessions, the clinician developed rapport with Ms. H and helped her to identify the thoughts, emotions, and behaviors that developed and maintained the OCD symptoms. Avoidance of "contaminated objects," seeking reassurance from family members, washing her hands, and eating from only prepackaged food were identified as the primary compulsions. Mental compulsions of "cleanliness checklists" were also identified. Ms. H's score on the Yale-Brown Obsessive Compulsive Scale (YBOCS) prior to treatment was 25 (indicating moderate-to-severe illness).

TABLE 1. Exposure hierarchy with subjective units of distress

Stimulus	Rating
Sitting in a doctor's waiting room	10
Eating from a food truck	9
Eating in a restaurant	8
Shaking hands with a stranger	7
Petting the family dog	6
Sitting on a public bench	5
Touching a countertop in the office	4
Touching a door handle at a store	3
Touching her own car door handle	2
Eating packaged food she personally opened	1

An exposure hierarchy was constructed (Table 1). For the initial exposure session, Ms. H placed her hand on a countertop. The initial subjective units of distress rating during the exposure was 4 out of 10. With encouragement from the clinician, Ms. H engaged in this exposure for 15 minutes and refrained from washing her hands afterward. The clinician was careful to provide encouragement (e.g., "You can do this, it's important to you") rather than reassurance (e.g., "I cleaned the counter this morning. You won't get sick"). At the end of the exposure session, the distress rating was 2 of 10. Ms. H was instructed to continue this exposure exercise at home. The family was instructed to provide encouragement rather than reassurance at home.

During later exposure sessions, the clinician recognized that Ms. H appeared somewhat distracted during more difficult exposures. On discussing this with Ms. H, it was discovered Ms. H had been using mental compulsions of "mental checklists" during these exposure activities in an attempt to reduce her anxiety. Ms. H agreed the "mental checklists" were simply maintaining the OCD and decided to mentally repeat the phrase, "I want to do scary things so I can beat OCD," whenever the urge to engage in mental compulsions arose.

After completing several exposure sessions, Ms. H and the clinician began cognitive restructuring. Ms. H was introduced to the thought record technique. Initially, the clinician elicited thoughts from Ms. H immediately following their exposure sessions. After Ms. H understood the technique, she was instructed to complete thought records at home. An example of Ms. H's thought record is shown in Table 2. Ms. H recorded her initial thoughts when confronting feared situations and a more helpful alternative thought. Ms. H was provided psychoeducation regarding the disadvantages of using reassurance as an alternative thought (e.g., "I'm sure I can wash my hands enough to get rid of any germs") and was instructed to instead accept and embrace the fears (e.g., "There is always a possibility I could get sick. It's going to be tough to completely avoid the risk if I want to live my life."). Ms. H reported that her ability to cope with the feared thoughts and situations gradually improved with the use of the thought record. She noted that "reassurance thoughts" seemed to work her "into a frenzy," because she found it difficult to definitively conclude that

TABLE 2. Thought record

Stimulus	Automatic thought	Helpful alternative
Son sneezes	"He must be getting sick."	"He could be getting sick. Rather than think more about this, I'll just have to wait to see if any other symptoms develop."
Eating at a restaurant	"I'm going to get my family sick."	"I could bring something home to my family. I also have to live my life."
Ms. H has a fever	"I've got another serious infection"	"It's possible this is another serious infection. It's also possible that it could go away in a day or two. Rather than panic, I'll do my exposure script and see how I feel tomorrow."

nothing bad would happen to her in the future. In contrast, the thoughts that were more accepting of danger provided her with a feeling of calm, because she was no longer expending mental energy on such a difficult task.

On further discussion with the clinician, it was identified that Ms. H's ultimate fear was that she would bring home germs that would get her family members sick. She had two teenage sons and thought how horrible it would be if they had to spend a significant portion of their young lives in the hospital. Worse yet, if they were to die in their teenage years, they would be robbed of the majority of their lives. Because an in vivo exposure could not readily be designed, the clinician assisted Ms. H in creating an imaginal exposure script for this feared event. Ms. H recorded a detailed story of her sons contracting a mysterious illness and how Ms. H may have been responsible for transmitting this illness to her children. Ms. H then listened to this recording for the remainder of the sessions. Ms. H also was instructed to listen to the recording for 1 hour every day between sessions. With Ms. H's consent, her husband and sons were instructed not to provide any reassurance (e.g., "No, I don't feel like I have a fever today.") to Ms. H between sessions. Instead, family members would respond by saying, "It sounds like you are looking for reassurance. We agreed that giving you reassurance doesn't help. How about we go for a walk or watch television instead?"

Ms. H engaged in 20 sessions of CBT. She was adherent to the between-session homework assignments, and her family members refrained from accommodating behaviors. At the end of the 20th session of treatment, her YBOCS score was 5 (indicating remission). Family members reported that Ms. H appeared happier. Ms. H reported she indeed felt better and had started attending college part-time. Ms. H agreed to continue the daily exposure sessions at home. Ms. H gradually reduced the frequency of sessions with her clinician to once every 3 months and was able to maintain remission of OCD.

ASSESSMENT OF OCD

Assessment of OCD begins with accurate diagnosis. The *DSM-5* diagnostic criteria for OCD is covered in the this issue of *Focus*. Once the diagnosis of OCD has been made, the clinician

can begin to determine the underlying behavioral contingencies and maladaptive cognitions in order to develop a treatment plan.

To the outside observer, the connection between the obsessions and compulsions may appear to be an unreasonable appraisal of the true likelihood of danger. This unrealistic appraisal is often the case, but need not be present for the diagnosis

of OCD. The degree to which the appraisal of threat is recognized by the patient as unreasonable is referred to as the degree of insight possessed by the patient (which is one of the newly included *DSM-5* specifiers).

Regardless of the degree of insight, distorted cognitions are held by patients with OCD and are a second focus of treatment planning. Common cognitions may be "All countertops contain germs. If I touch them, I or my family will get sick." A major model of the cognitive process in OCD posits that there are five dysfunctional assumptions held by patients with OCD: thoughts are the same as actions, directly causing harm is equivalent to failing to prevent harm, responsibility is not attenuated by outside variables, desire for the feared consequence to occur is equivalent to failure to perform a compulsion, and thoughts must be controlled at all times (3).

After conceptualizing the above stimuli and associated cognitions, the provider is encouraged to begin ERP concurrently while continuing to provide psychoeducation about OCD (17). Cognitive restructuring can be used after ERP is initiated, and techniques for this portion of therapy are presented later in this article.

Historically, ERP was believed to reduce OCD symptoms via habituation. That is, through repeated exposure to a stimulus, the stimulus would create less fear and desire to perform a compulsion as the body physiologically adapted to the stimulus. A newer theory, inhibitory learning, suggests that rather than physiologically habituating to the stimulus, the patient learns new nonthreat associations that compete with the previously conditioned threat associations (18, 19). The inhibitory learning theory would posit that rather than "forgetting" old information, patients learn new information that competes with the previously held beliefs. Over time, the new information outweighs the old information and the fear and the desire to perform compulsions is reduced. The exact mechanisms by which CBT-ERP operates remain unclear, and we hope that future research will provide further insights.

TREATMENT OF ADULT OCD

Initial Measurement of Symptoms

The YBOCS checklist and severity rating (20, 21) is the gold standard assessment used to fully characterize the form and

severity of obsessions and compulsions. The YBOCS checklist contains items to assess the presence of typical OCD “themes” (e.g., contamination). The severity measure assesses the frequency of obsessions and compulsions and their level of interference with life activities. The severity is typically measured on a 10-item, 0–4 scale, although longer measures are available. Generally, patients endorse multiple obsessions and compulsions. Measurements of depression and anxiety can also be obtained, such as by using the Beck Depression Inventory (22) or the Beck Anxiety Inventory (23), because symptoms of depression and anxiety are often comorbid with OCD. If desired, the Brown Assessment of Beliefs Scale (24) can be used as a measure of insight. All of these measures can also be completed periodically during treatment to track patient progress.

Psychoeducation

Psychoeducation is the main intervention provided during the first several psychotherapy sessions. Particular attention is given to the diagnostic criteria for OCD, explanation of the cognitive-behavioral model for the development and maintenance of OCD symptoms, and the rationale for CBT-ERP. Therapeutic interventions that will be used during sessions are defined, and treatment goals are identified by the patient. The role of family accommodation and expressed emotion (discussed later in this article) can also be discussed.

ERP

Exposure is more readily titrated than response prevention, and it is recommended that a hierarchy of anxiety-provoking stimuli be constructed within the first few sessions of therapy. The exposure hierarchy is constructed by asking the patient to identify and rank stimuli that provoke obsessions. The patient provides a numerical value to indicate the level of distress caused by each item on the hierarchy. These subjective ratings on units of distress are typically on a scale of 1 to 10 or 1 to 100.

Exposure therapy is designed to prompt obsessions to occur. Through prolonged exposure to anxiety-provoking stimuli, and prevention of the associated compulsion, the patient learns to tolerate increasing increments of distress without engaging in compulsions. The therapist provides instructions and encouragement, which are essential to helping the patient resist performing compulsions (25). The therapist can also provide alternative behaviors to engage in when the patient desires to perform compulsions. For initial exposures, it is recommended that the stimuli be strong enough to induce obsessions and the desire to perform a compulsion, yet weak enough that the patient is able to refrain from or delay performing the associated compulsion. Typically, the initial exposure corresponds to an item on the exposure hierarchy with a subjective units of distress rating of 4 on a 1–10 scale or 40 on a 1–100 scale.

Two forms of exposure may be used by the therapist treating OCD: *in vivo* and imaginal. *In vivo* exposure

consists of real-life stimuli (e.g., touching a dirty countertop). In imaginal exposure, the patient composes a detailed script that consists of feared stimuli and outcomes that would occur if prevented from performing compulsions (e.g., the patient falls ill and is hospitalized because of touching the countertop). Imaginal exposure is useful in situations in which it is difficult or not advised to expose a patient to some feared outcomes (e.g., aggressive, sexual obsessions). Imaginal exposure can be used in combination with *in vivo* exposure and has led to positive outcomes in several studies (1).

Gradual exposure to the feared stimuli is preferred by patients (26), and in our clinical experience, it would appear that rapid exposure leads to no better response than gradual exposure. “Flooding,” also called “implosion” therapy (27) (these two terms are not synonymous, but the distinction is not necessary for the purposes of this discussion), which is rapid exposure to stimuli that are extremely high on the subjective units of distress hierarchy, is often used in imaginal exposure. Imaginal exposure need not involve flooding, and the prudent therapist would be well advised to only engage in flooding exercises when a great deal of motivation and therapeutic rapport are present.

The frequency and number of ERP sessions for optimal outcome are unclear (1). It is possible that individual patient characteristics and aspects unique to each patient-therapist relationship moderate optimum frequency and treatment duration. Generally, treatment consisting of 90- to 120-minute sessions once or twice per week, for a total of 12–20 sessions, is effective. However, protocols of varying intensity have been used. In practice, the number, frequency, and duration of sessions should be considered in light of the patient’s availability, motivation, and degree of improvement during the course of treatment. In our own clinic, we have achieved excellent results with sessions in alternate weeks, provided the patient engages in between-session exposure exercises for homework.

Cognitive Restructuring

As discussed earlier, patients with OCD tend to hold maladaptive beliefs. Foremost among these beliefs is some form of “the world is a dangerous place.” Although more evidence exists for ERP, cognitive restructuring to address maladaptive beliefs may independently lead to additional benefits (1).

The most direct method of addressing maladaptive cognitions is through discussion before and after exposure exercises. These cognitions are directly tested during the exposure exercise, and after completion of the exposure, patients are asked to rate the degree of belief in their maladaptive cognition. The therapist should not aim for a goal of complete disbelief in a strongly held maladaptive cognition early in the treatment, because this would be too extreme of a change and is likely to lead to resistance from the patient. In cases of strongly held maladaptive cognitions, the therapist should have more modest aims of simply

having the patient accept the existence of alternatives to the feared outcome (28).

Between sessions, patients can practice testing their thoughts when performing exposure exercises. The thought record, a standard technique in cognitive therapy that teaches patients to challenge their maladaptive thoughts with more adaptive and helpful thoughts, can be a useful exercise for this purpose. In its most basic form, a thought record involves writing maladaptive cognitions in one column and more balanced, adaptive, and helpful thoughts in a second column. This exercise forces patients to identify that alternatives to their obsessional thinking exist, which in itself reduces the degree of conviction of obsessions. In more complex forms, the thought record involves rating the degree of belief in obsessions, as well as the level of anxiety or happiness, before and after alternative thoughts are written.

Mental Compulsions

Attention needs to be paid to mental compulsions. Mental compulsions are unspoken and occur internally in the mind of the patient. Mental compulsions can take the form of praying, repeating certain words or phrases, counting, analysis of possible outcomes, and creating mental checklists in one's head. The treatment provider should inquire about the presence of such compulsions, because they are internal and may go otherwise unnoticed. Once identified, specific techniques may be necessary to treat mental compulsions. Although exposure follows the same procedure as previously described, response prevention involves blocking mental compulsions by having the patient engage in a competing mental process. For example, the competing mental process can involve reciting poetry, planning dinner, or mentally reviewing an exposure script. Although research examining mental compulsions is somewhat limited, the efficacy of CBT has been demonstrated (29).

Family Accommodation (FA) and Expressed Emotion (EE)

Family responses, such as FA and EE (a reflection of the emotional climate in the home) are gaining prominence in the literature as possible mediators in the course of OCD and its treatment. OCD rarely leaves family systems unaffected and inexorably pulls relatives into the patient's OCD symptoms, resulting in declining family functioning. Ninety percent of respondents indicated OCD symptoms interfered in the individual's functioning and resulted in burden for other family members (1). FA seems to be pervasive for all families experiencing a relative's OCD.

FA. Family accommodation in OCD specifically refers to family members' behavioral responses to OCD, such as providing reassurance, participating in rituals, modifying personal and family routines, facilitating avoidance, and taking on the patient's responsibilities (30). Poor role definition, lack of boundaries, and intrusiveness are characteristic in

families with a high degree of accommodation. Calvocoressi and colleagues (30) reported that 88% of spouses and parents made accommodations for the patient and that this accommodation correlated significantly with patient symptom severity and global functioning, family dysfunction, and relatives' stress. Accommodation to OCD symptoms may seem benevolent, but when excessive, it contradicts exposure-based therapy, perpetuating and reinforcing symptoms and increasing relatives' feelings of distress (31).

In a synthesized review of FA (32), 69 relevant articles from 2015 to 2018 cross referenced psychiatric disorders with accommodation and other family-related terms. In OCD and other disorders, such as anxiety, eating disorders, autism, and PTSD, family accommodation has been associated with greater symptom severity, functional impairment, and caregiver burden (33).

The only published measure for FA is the Family Accommodation Scale (FAS), validated in interview (30) and self-rated (FAS-SR) (34) versions, and a patient-rated version (FAS-PV) (35). Each version of the FAS measures the presence and level of accommodation for adult and pediatric OCD populations (36). These three versions of the FAS have been translated to >15 languages and are available in the public domain at: <https://publichealth.yale.edu/familyaccommodationocd/>.

Other versions of the FAS have been reported in the literature, although they have not been validated against this "gold-standard." The FAS-SR and FAS-PV are 19-item relative self-reports. These measures are easy to administer (and may be administered to the OCD patient in the event a family member is not available) and yield valuable clinical information that can be useful to target in reducing FA. Most OCD patients are unaware that FA interferes with ERP treatment and administering the FAS-PV can provide this psychoeducation. During the past 3 decades, the concept of FA has received exponentially growing attention, and replicated studies have identified FA as one of the most robust predictors of OCD treatment outcome for adults, children, and adolescents (32).

In response to a questionnaire that assessed relatives' motives for and beliefs regarding accommodation, 65% of relatives reported that their accommodation behaviors were attempts to attenuate patient distress or anger, and 63% reported that their behaviors were designed to decrease the time spent on compulsions and/or rituals by the patient (37). Providing reassurance has consistently been the most commonly reported type of FA (30, 38). Reassurance seeking is often unrecognized as an OCD compulsion by patients and relatives (and clinicians), yet this behavior can be quite severe in frequency, time consuming, impairing, and definitively annoying.

What drives accommodation is not clearly understood and, even though relatives are distressed and know it is not productive, they still try to "help." High levels of FA have been associated with higher perceived burden by relatives (39). Some anxious relatives, who have OCD traits

themselves, may find that witnessing a loved one struggling during exposure-based treatment leads to feeling overly empathic, resulting in FA to attenuate their own distress (40).

In a path-analytic model, Van Noppen and Steketee (41) found that FA made the largest contribution to predicting OCD symptom severity, greater than any other family variables. FA has been consistently indicated as positively correlated with OCD symptom severity and response to treatment (1, 36, 42). To fully understand the relationship between FA, OCD severity, response to treatment, and other mediators, more investigation into the directionality of this relationship is required.

EE. Expressed emotion (criticism, hostility, and emotional overinvolvement) is a multidimensional construct recognized as a robust factor for reliably mediating course or relapse in psychiatric illnesses (43, 44). EE seems to reflect the emotional quality of interactions that occur between relatives and a psychiatric patient, thereby linking family reactions to patient functioning. There are clear implications for how relatives' emotional responses to OCD affect the course of the disorder (31).

Chambless and Steketee's work (45) indicates the potential benefit of analyzing the components of criticism, hostility, and emotional overinvolvement separately. By investigating the relationship of EE to behavioral therapy outcome for OCD, with analyses controlled for all other EE variables, Chambless and Steketee found that relatives' hostility placed a patient at six times the risk for premature drop out from therapy. Contrary to expectation, nonhostile, critical, comments were predictive of significantly better behavior therapy outcomes. When delivered without hostility toward the person as a whole, nonhostile criticism may be motivating for OCD patients who use avoidance to neutralize anxiety. Such a response from relatives may reinforce exposure-based behavior therapy (31).

Chambless and Steketee (45) also found that high perceived criticism (as rated by the Perceived Criticism Measure [PCM]) (44) is a strong predictor of poorer treatment outcome for OCD. Despite objective ratings of hostile criticism, adult OCD patients who perceive relatives as rejecting and negative experience more anxiety. It might be that some people are more sensitive to perceiving critical and/or hostile comments from relatives and have strong emotional reactions to that. In addition to ERP, CBT cognitive restructuring methods could improve outcomes by reducing the perception of criticism and hostility.

Chambless and Steketee (45) concluded that family-based interventions to reduce EE, or the anxious patient's response to EE (perceived criticism), may improve treatment outcome and, thereby, patient functioning. A family-based approach to treatment underscores that OCD is embedded in a family context, highlighting the important dynamic between relative's perceptions of and responses to OCD and the patient's anxiety and level of functioning.

Studies on FA and EE indicate that these family phenomena have gained attention as predictors of outcome and can be targeted foci of family-based treatment.

Family- and Couple-Based Interventions

Family members are often excluded from individually based CBT, yet because FA and EE are moderators for treatment outcome, the importance of developing family-based treatment is gaining recognition. Including family to target changing these responses could further improve symptom reduction and durability and decrease drop-out rates. In a recent publication, Stewart et al. (46) conducted a meta-analysis of family- and couple-integrated CBT for OCD. They reviewed 15 studies (16 independent samples) and reported that these family treatments improved patients' OCD symptoms, depression, anxiety, and functional impairment. In addition, there was subjective reported improvement by family members and patients regarding relationship satisfaction, family members' mental health, and reduction in antagonism (EE) and accommodation.

Family-based interventions for OCD have been more rigorously investigated in pediatric samples (see below), although there are reports of such interventions for the treatment of adults that date back to more than 4 decades ago. Lebowitz et al. (36) searched PubMed and PsycINFO for studies on OCD and family-related terms between 1967 and 2011 and identified 641 articles.

Clearly, the importance of family in the course of the disorder and treatment has been recognized, although there has been a lack controlled studies. Marks and colleagues (47) were the first to recognize the benefits of including family in the treatment, initiating a monthly open-ended educational and support group for family members of inpatients with OCD.

Several studies have examined family psychoeducational groups for the treatment of OCD. They all reported on the additional benefits of including family members in the treatment. In particular, patients with family members who acted as cotherapists at home to support ERP and decrease family involvement in rituals experienced greater reduction in anxiety and improved social and occupational functioning. Multifamily behavioral treatment, consisting of psychoeducation, family contracting, in vivo ERP, and communication skills training, has also been shown to improve symptoms. Similar interventions have been found effective for couples (1).

Because the protocols for family-based treatments have differed across studies, we cannot compare or draw conclusions about which family-based approach might be better than another. Development of specific interventions (family behavioral contracts) for different types of family responses (EE, FA) that can be tested in a controlled way across various sites would further application of any truly evidence-based family treatment. If we better understand what drives FA, interventions designed to target those factors could be developed. There is a clear need to test one model of family-based treatment in a large randomized controlled trial (RCT).

Despite this limitation, a recent meta-analysis (46) examined whether family-integrated treatment is effective for OCD among adults and considered possible moderators of treatment outcome. Fifteen studies were reviewed (16 independent samples). Interestingly, family-integrated treatment outperformed individual ERP in reduction of OCD and depression symptoms and accommodation and improved patient functioning. OCD symptom improvement was not moderated by any of the examined moderators, particularly patient session length or dosage of family involvement. Therefore, family-based treatment, by educating about OCD and training family members to support the patient's ERP behavior, holds great promise and potentially more durability of OCD symptom reduction.

Patient-Only Group Behavioral Therapy

CBT delivered in a group modality allows for efficient use of therapist time and potential cost containment. Several studies and meta-analyses have found group behavioral therapy effective and suggest that retention rates may be higher in the group format. Group behavioral therapy has produced results comparable to those of individual behavioral therapy and may produce better outcomes for some patients with difficult-to-treat conditions (1).

PEDIATRIC OCD

OCD is estimated to affect approximately 1%–3% of children and adolescents, with approximately 50% diagnosed before age 15. According to research, 80% of adult OCD cases have their onset during childhood. The mean age of onset of pediatric OCD ranges from 7.5 to 12.5 years, with an average of 2.5 years between age at onset and treatment. A higher genetic risk of developing pediatric-onset OCD (increased 10 times among first-degree relatives) compared with adult onset (increased two times) is seen. Some etiological evidence indicates a neurodevelopmental perspective, suggesting that early-onset OCD may reflect a specific subtype versus adult-onset OCD (1). Westwell-Roper and Stewart (48) provide an updated review of the etiology and pathogenesis (including pathophysiology, genetics, immune, and environmental factors) for pediatric OCD. Additionally, a section on pediatric acute-onset neuropsychiatric syndrome (PANS) is included.

PANS refers to a subgroup of children who experience OCD symptoms because of an infectious trigger, environmental factors, or other possible triggers (e.g., metabolic disorders) that affect the immune system and result in inflammation of the child's brain. Because of this inflammation, a sudden onset of severe OCD symptoms or severely restricted food intake occurs that does not follow the typical, more gradual onset of OCD symptoms seen in pediatric OCD. In addition, neuropsychiatric symptoms, such as anxiety, mood disruptions, irritability, frequent urination, academic regressions, and more may be present. The interested reader is referred to Chang et al. (49) for a consensus

statement (derived from the First PANS Consensus Conference) on clinically distinct PANS criteria and for expert recommendations on evaluating PANS. These experts outlined the core components of a thorough diagnostic evaluation of suspected PANS cases.

Children with OCD have obsessions and compulsions similar to adults; however, the content differs, as it is more developmentally appropriate. The most common obsessions for children and/or teens are contamination, sexual and somatic obsessions, and excessive scruples or guilt; and the most common compulsions are washing, repeating, checking, and ordering. In addition, young people with OCD may manifest compulsions without distinct or clearly defined obsessions. Early intervention in pediatric OCD is important, because without proper treatment, there is greater likelihood of developing adult mental health issues and lower overall functioning (1).

DSM-5 diagnostic criteria (50) specify that young persons are not required to have insight into the excessive or unreasonable nature of their symptoms. Compared with adults, children tend to have less insight in seeing their obsessions and compulsions as irrational, although a range of insight has been seen. Studies in adult-onset OCD suggest an association between insight and both OCD symptom severity and outcomes. Among youths, poor insight predicted greater FA and severity of symptoms and was associated with diminished CBT response (1). Selles et al. (51), with data from six international pediatric OCD programs, provide support for the finding that lower levels of insight are associated with increased OCD severity (i.e., increased distress and avoidance and decreased symptom resistance). However, it is possible that OCD severity contributes to poorer insight, suggesting the need for more systematic research to understand the nature of these relationships.

Prior to a diagnosis of OCD, a structured, systematic assessment, including family, developmental, and medical history; diagnostic interviews; and a functional analysis with information on the severity and duration of OCD symptoms, is obtained. Common psychological assessment tools for pediatric OCD include the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS) (52), the child version of the Obsessive-Compulsive Inventory (53), and the Children's Florida Obsessive-Compulsive Inventory (54). Johnco and Storch (55) provide a review of clinical and self-report assessment measures.

Pediatric OCD typically has a chronic and fluctuating course, is associated with impaired social and family functioning and academic difficulties, and influences child development, resulting in reduced quality of life. Thus, a review of the functional consequences of OCD symptoms in home, school, and social environments is needed. Storch and colleagues (56) found that quality of life is inversely related to OCD symptom severity and impairment. Storch and other colleagues (57) found that greater rates of peer victimization among youths with OCD were positively related to loneliness, child-reported depression, parent-reported

internalizing and externalizing symptoms of children, and clinician-rated OCD severity. In a pilot study, Negreiros et al. (58) evaluated academic skills among youths with OCD compared with healthy control children. The authors identified significantly higher deficits in mathematical skills among the children with OCD, with no differences in reading or spelling, and without association with symptom severity. These preliminary findings suggest the importance of considering psychoeducational assessments if there is a history of academic difficulties.

TREATMENT OF PEDIATRIC OCD

Similar to adult OCD, CBT is effective and the treatment of choice for pediatric OCD, even for children as young as age 3. Studies demonstrating positive benefit from CBT for pediatric OCD often include components of psychoeducation, cognitive strategies, and ERP. In a thorough review of evidence-based treatment for pediatric OCD, Grebe et al. (59) conclude that meta-analytic results suggest CBT as the first line of treatment for youths with OCD, including multi-component programs containing ERP (60–63).

According to clinical guidelines (64), combined CBT and SSRI treatment is recommended for moderate-to-severe cases of pediatric OCD, whereas CBT alone is recommended for children with mild-to-moderate OCD severity. However, in a thorough meta-analysis, Ost et al. (61) ($N=42$ studies) found large treatment response rates for combination (SSRI and CBT) treatment, although this treatment was not more effective than CBT alone, irrespective of initial severity levels. In comparisons of treatment response rates, CBT alone had higher response rates (70%) compared with SSRIs alone (49%), and both had higher rates than placebo (29%) and the waitlist control condition (13%). With respect to remission rates, Ost et al. found that CBT alone (53%) was more effective than SSRI treatment alone (24%). A second meta-analysis (65) also found no differences between combined treatment and CBT alone. A recent meta-analysis by Uhre and colleagues (66) found comparable effects on remission with CBT and pharmacologic agents. Inconsistencies across these meta-analyses may be accounted for by differences between studies, including methodological differences (e.g., in comparison groups, such as placebo or waitlist). As noted by Grebe et al. (59), further research is needed to examine the comparative efficacy of combined treatment versus CBT or SSRIs alone, particularly whether there are identifiable variables that may help determine when CBT plus SSRI would be beneficial.

There is ample evidence (1) that CBT is an efficacious treatment for pediatric OCD, and that the full CBT protocol is more effective than simply giving instructions on CBT, relaxation strategies, or a waitlist control condition. Further research (61, 66, 67) has supported and extended the finding that CBT is the treatment of choice, with respect to its efficacy, safety, and response durability, for children and adolescents with OCD.

Torp and colleagues' (68) findings, in the Nordic Long-Term Obsessive-Compulsive Disorder Treatment Study (NordLOTS), suggest that manual-guided CBT can be applied effectively in community child and adolescent mental health clinics. Evidence of the robustness and durability of CBT effects for patients who respond to treatment has been seen in multiple follow-up studies. With this same sample, Højgaard et al. (69) found that at 12 months post-treatment, 78% of participants were in remission (i.e., had CY-BOCS total scores ≤ 10), whereas 92% had responded to the treatment (i.e., had CY-BOCS total scores ≤ 15). Further treatment gains were found in a 3-year follow-up of the NordLOTS (70).

Skarphedinnsson and colleagues (71) randomly assigned the initial nonresponders of the NordLOTS sample to receive extended treatment with continued CBT or pharmacotherapy with sertraline. They found no difference at posttreatment for the CBT or medication groups. Melin and colleagues (70) studied the long-term durability of this sample by following patients for 3 years posttreatment. They found a significant decrease in CY-BOCS total score from baseline to the 3-year follow-up, with a mean decrease of 5.9 points from posttreatment to the 3-year follow-up. Ninety percent of participants were rated as responders and 73% as in remission after 3 years of follow-up. Overall, these results suggest that evidence-based treatment for pediatric OCD has long-term positive effects.

Kircanski and Peris (72), in a pilot RCT, found that the greater the variability of distress during ERP, and when more than one OCD symptom is targeted, the better the treatment outcomes—supporting ERP as the core ingredient of CBT. Despite the effectiveness of ERP, it is underused by clinicians. Common barriers to the use of ERP are therapist-related factors (e.g., level of training and negative beliefs about safety, patient tolerance, and ethicality) and OCD symptoms (hoarding and “taboo” obsessions), suggesting the need to target these areas when training therapists (73). In an effort to address the lack of clinicians effectively trained in pediatric OCD treatment, Piacentini et al. (74) developed competency standards recommended for clinicians delivering CBT for pediatric OCD.

Grebe et al. (59) discussed how therapists can use treatment exercises with children to gain further information about their obsessions and rituals. For example, asking the child “What are you thinking?” when triggered during ERP may help identify the fear and connect it to the feeling of distress. Other considerations in children are a present orientation that makes future symptom relief less motivating, low frustration tolerance, lower attention sustainability, and poor coping abilities. Child-specific CBT that uses age-appropriate metaphors when providing psychoeducation and therapy (e.g., false alarms, bossing back OCD, naming OCD, use of fear thermometers) and incentive programs help address these challenges. Tompkins et al. (75) describes evidence-based CBT treatment adapted for pediatric OCD, including diagnoses, case conceptualization, and treatment planning.

Family Factors

Family factors that may predict or moderate youths' symptom improvement during treatment have been extensively studied. In a meta-analysis with 37 studies, McGrath and Abbott (76) examined the effect of family-based interventions on OCD symptoms and family factor outcomes for pediatric OCD. Their findings add further support to preliminary results in the literature that specific family factors, such as family cohesion, conflict, and parental blame of the youth, may affect response to treatment for youngsters with OCD (77). In general, family accommodation, negative family dynamics, higher conflict, poor cohesion, and parental blame predict poorer treatment outcome (1, 78).

FA. Another family factor that affects treatment outcome is family accommodation (FA). As with adults, FA is a salient feature of pediatric OCD. Studies report high levels of accommodating behaviors by family members of children with OCD, with a large percentage of families (60%–96% of family members) engaging in either modifying family routines or participating in a youth's rituals (1). In a study by Lebowitz et al. (79), FA was found to be highly prevalent in both pediatric anxiety disorders and OCD, with no significant group differences in levels of participation, modification, or total accommodation. The importance of this concept is evident by the interest in FA and its impact on treatment as outlined below.

The most common FAs consist of providing reassurance, participating in rituals, and assisting in avoidance of feared situations or objects (80). OCD symptom severity, functional impairment, children's internalizing and externalizing symptoms, and parental psychopathology (maternal depression and anxiety) have been associated with FA of children with OCD (35, 78). FA is associated with increased OCD symptom severity because it causes greater family dysfunction and negative dynamics and has an impact on family life. As well, higher levels of FA, low insight, and OCD symptom severity have been linked to poorer in-session compliance and willingness to participate in treatment (1).

Higher levels of accommodation are related to poorer treatment outcome, irrespective of treatment modality (CBT or medication) (62, 81). Peris and colleagues (77) found that reductions in FA may account for changes in clinical symptoms of youths with OCD in families with poor functioning. In contrast, Torp et al. (68), in examining the NordLOTS data, found no relationship between FA and outcome; however, the high amount of family involvement in that study may have positively influenced the family environment and inadvertently addressed the FA. In a large (N=41 studies) meta-analysis, Wu et al. (62) found a medium-sized correlation between FA and OCD symptom severity (consistent with the effect size found by Strauss et al.) (82), suggesting that increased OCD symptoms are associated with higher levels of accommodating behaviors. Monzani et al.'s (83) post hoc analyses supported this relationship in a study of maternal and paternal FA behaviors. For an in-depth review

of FA (up until 2015), the interested reader is referred to Lebowitz et al. (81).

Storch et al. (80) found that FA mediated the relationship between OCD symptom severity and parent-rated child functional impairment and that children reported greater impairment in school when families accommodated their symptoms. Stewart et al. (84), in a multisite study, found that FA predicted family impairment. They found that 50% of mothers, 30% of fathers, and 70% of youths reported daily impacts on their functioning in occupation and/or school and feelings of frustration-anger and stress-anxiety. These results are consistent with higher levels of distress associated with the need to accommodate in a study comparing youths with pediatric anxiety and OCD to those without the conditions (79).

Children's comorbid internalizing and externalizing symptoms have been found to predict negative outcomes for CBT treatment (68), possibly because of parental accommodation of the child's OCD symptoms. In studies of FA among pediatric samples, comorbid anxiety disorders moderated the relationship between OCD symptom severity and FA (78) as well as the relationship between parent anxiety and FA (85). Family accommodation has been associated with increased parental anxiety symptoms as well as with treatment outcomes among children (78, 81). In a recent study, Monzani et al. (83) found a relationship between FA and youth emotional and behavioral difficulties as well as parental anxiety and distress, regardless of whether it was the mother or father accommodating. Also, when both parents displayed FA, OCD severity, functional impairment, child emotional and behavioral difficulties, and parent psychopathology were higher compared with when either one parent or neither parent made accommodations.

In addition, family cohesion and externalizing symptoms predicted FA (78), often because coercive or disruptive behaviors contribute to increased levels of FA (36). Externalizing symptoms and emotional dysregulation (e.g., rage) among youths with OCD are associated with higher levels of family accommodation. In a recent study, McKenzie et al. (86) found that parental report of children's emotional lability was significantly and positively correlated with children's externalizing symptoms and family accommodation. These results support the idea that parents seem more likely to give in to accommodating behaviors in the presence of the youth's emotional dysregulation. To resist giving in and accommodating a child's OCD, the parent or family member needs to be able to tolerate the child's distress. In the Pediatric Obsessive-Compulsive Disorder Treatment Study (POTS) for Young Children sample, Selles et al. (87) found preliminary evidence that child and parent distress tolerance significantly improved with treatment. Interestingly, fathers' baseline distress tolerance was significantly related to symptom improvement, suggesting the importance of studying paternal FA.

In a large (N=209) quantitative study, Monzani et al. (83) compared maternal and paternal FA and how FA

affected children's OCD symptoms and treatment. Consistent with prior research, both mothers and fathers accommodate their child's OCD symptoms with high daily frequency (55%).

FA interferes with treatment goals of CBT and ERP by reinforcing the fear and avoidance behaviors, thus FA is an important focus for intervention. Lebowitz et al. (88) demonstrated the effectiveness of addressing FA in a comparison of CBT with their 10- to 12-week parent-only intervention for childhood anxiety and OCD (Supportive Parenting for Anxious Childhood Emotions [(SPACE])). Seven-to-14-year-olds were randomly assigned to either SPACE (with no direct child-therapist contact) or CBT (with no parent treatment). Regardless of treatment modality, FA and parenting stress were significantly reduced; however, there was a significantly greater FA reduction following SPACE compared with CBT. These results suggest parental change alone can reduce child OCD and anxiety and may be effective in situations where children refuse treatment. Further RCTs investigating this program's effectiveness on pediatric OCD are warranted.

EE. Expressed emotion (EE) by family members influences symptom severity and treatment outcome of the patient. Parents who respond with criticism, blame and/or hostility, or emotional overinvolvement may create environments that exacerbate symptoms and result in negative parent-child interactions. As with adults with OCD, EE predicts poorer treatment outcome for children with OCD and is prevalent among parents of children with OCD (89). Research underscores the impact that conflict, blame, and low levels of support or cohesion at home may have on treatment response, suggesting the importance of targeting EE when working with families.

Family-Based CBT

A growing interest in the inclusion of family members is seen in the literature on pediatric OCD treatment. Family-focused CBT (CBFT) involves a structured parental component that often includes parent involvement in treatment sessions to help train and educate parents how to implement ERP and manage their children's OCD symptoms. Studies have shown some benefit to this approach. However, the level and nature of parental involvement in treatment have varied across studies (1).

Meta-analyses of CBFT efficacy have shown mixed results. Meta-analytic reviews have found that CBFT effectively reduces obsessive-compulsive symptoms (90) and that parental involvement reduces symptom severity (64). A contradictory meta-analysis by McGrath and Abbot (76) examined the effect of CBFT on pediatric OCD symptom and family factor outcomes. They found that the number of family factors targeted in treatment significantly moderated posttreatment outcomes on measures of FA but not OCD symptom severity. This conflicting result may have been due to several studies that lacked FA pre- and posttreatment measures.

According to the American Academy of Child and Adolescent Psychiatry Committee on Quality Issues (64), the standard of care with young children is CBFT—significant family involvement and training with less focus on cognitive therapy. Freeman and Garcia (91) developed an intervention for early childhood OCD to address FA. Across 14 weeks, both children and parent-directed work occurs, such that children learn tools to manage and reduce their OCD symptoms, and parents learn about FA and strategies to improve family functioning by addressing FA. In a RCT (N=42) with young children with OCD, Freeman et al. (92) found that a 12-week protocol of CBFT was significantly more effective than relaxation training for the children who finished treatment, although no difference in remission rates was found between the two modalities. Freeman et al. (93), in a multi-site RCT, found that CBFT was significantly more effective than relaxation therapy for children ages 5–8 with OCD. Consistent with these results, Lewin et al. (94), in a pilot RCT, found that children as young as age 3 responded better to treatment with family-based ERP (65%) compared with treatment as usual as outlined by their providers (7%).

In a preliminary study, Rosa-Alcázar et al. (95) compared the effectiveness of parent-only therapy (PT) versus CBFT (child and parent) for 4-to-8-year-olds with OCD. They found no differences between PT or CBFT with respect to remission (CY-BOCS $\leq$ 12); both were high (50%–58.8%) at posttreatment and follow-up. In addition, no significant group differences were observed in improvement of global functioning, family accommodation, or internalizing and externalizing. In a RCT (N=44) with young children, Rosa-Alcázar et al. (96) found no differences in clinical improvements when comparing CBFT (both parents and child) versus CBFT (mother and child) and PT (mother alone). However, even in cases of high FA, including more family members was the most efficient, and better results were seen when the child was included directly in treatment.

These results are similar to those observed in previous studies (93, 94) examining CBFT for OCD in very young children. Slight variations in remission rates across studies may be explained by the differing durations of OCD symptoms. The positive finding for a parent-only intervention was similar to that of Lebowitz and Omer (97), although direct comparisons cannot be made because the SPACE program differed in its application. Overall, these results provide preliminary support of the acceptability of parent-only interventions for young children; however, further investigation with more RCTs, larger sample sizes, and accounting for therapist variables is needed. There is a strong evidence base for both traditional CBT and CBFT modalities (61, 62, 90).

Intensive CBFT Programs

Research has extended the efficacy of CBFT to intensive programs (an alternative for treatment-resistant OCD or for those who do not have access to local CBT providers). These programs range from delivery of a similar number of therapy hours in a limited number of sessions to full residential

programs. The majority of studies have found benefit to treatment (1). In contrast, Riise and colleagues (98) found that neither symptom severity nor FA predicted posttreatment outcome for 63 adolescents participating in the intensive Bergen 4-day treatment. However, there were large within-group effect sizes on both CY-BOCS and FA measures from pre- to posttreatment and from pretreatment to follow-up.

Positive results have been found for longer intensive programs (e.g., residential programs) that use multimodal individual and group treatment approaches emphasizing ERP (99). In a cost-effectiveness analysis, Gregory et al. (100) compared OCD-specific intensive outpatient programs to partial hospitalization programs and found that intensive outpatient programming was the most cost-effective in terms of CY-BOCS pre- to posttreatment change. Overall, these open-label trials have provided evidence that higher intensity multimodal therapy is a possible effective alternative, especially for pediatric OCD that is not responding to traditional outpatient formats. However, more research with active comparison groups is needed to fully determine the efficacy of the higher-intensity format.

Group-Based CBT for Children

Another area of promising research in pediatric OCD treatment is group-based treatment. Several studies have found efficacy for group-based treatment in reducing OCD symptoms (1). In contrast, Fatori et al. (101), in a 7–9-year follow-up of group CBT, found neither treatment predicted OCD symptoms at follow-up. A meta-analysis (90) found better efficacy for CBFT when applied in an individual rather than a group format.

To address the discrepancies seen between the level of parental involvement in group and individual CBFT, Selles et al. (102) used a group CBFT protocol with extensive parental involvement. In a 12-week open-label controlled study (N=85), they found further support for the effectiveness of Group Family-CBT, with 56% of participants classified as responding to treatment and 38% classified as in remission. In addition, significant improvements in a wide range of domains (e.g., FA, family functioning, disruptive behaviors) beyond OCD symptom severity were observed. Another study (103) found similar results.

There is also evidence to support intensive outpatient group treatment for pediatric OCD. Whiteside et al. (104) found favorable results in an intensive group protocol that required fewer sessions and 36% fewer therapist-hours per patient than the individually administered protocol. Riise and colleagues (105) studied the efficacy of concentrated exposure delivery for adolescents with OCD in a group format. In this open-label trial, 22 youths, ages 11 to 17, received concentrated ERP for approximately 12 hours over 4 consecutive days. The youths had significant reduction in OCD symptoms and functional impairment, and 91% were classified as responders. Sperling et al. (103) shifted the focus of treatment outcome from remission to improvement in functioning.

They found significant improvement in functioning (as endorsed by the parents and children) of youths (N=212) who were diagnosed with either OCD or anxiety disorders in an intensive outpatient group-based treatment program.

An evidence-based update by Freeman and colleagues (106) regarding effective treatment for pediatric OCD found support for CBT as an effective and appropriate first-line treatment for youths with OCD. Twenty-nine RCTs were included in the Freeman et al. update. Despite advances in open-label trials, the Freeman et al. criteria suggest GF-CBT and group CBT remain “possibly efficacious” treatments and that more RCT studies are warranted.

Exposure-based CBT is an efficacious intervention for children and adolescents with OCD and this result has been supported in literature reviews and meta-analyses. As mentioned in our previous review (1), FA and EE (i.e., a reflection of the emotional climate in the home) are prevalent in pediatric OCD and affect symptom severity, treatment outcomes, and functional impairment. The impact of these two constructs is evident in the increase in family-focused approaches used in treating youths with OCD, and research increasingly supports the effectiveness of this approach. In this updated review, more methodologically rigorous RCT designs in CBFT were included, but further research directly comparing the effectiveness of various treatment modalities (e.g., group, intensive, inpatient) for pediatric OCD is needed to allow exposure-based CBT to be more accessible to youths and families.

CONCLUSIONS

In summary, CBT with an emphasis on ERP is a robust and effective treatment of OCD with or without medication. Some individuals benefit from combined treatment. To speed treatment response or to treat treatment-resistant patients, it may be necessary to consider combined treatment with medication or the use of techniques to enhance the efficacy of CBT-ERP. FA and EE are important topics for the clinician to be aware of in pediatric and adult populations, and evidence suggests that attention to these topics results in improvement of OCD symptoms. It is clear from the ongoing clinical research that family responses (EE and FA) to people with OCD, whether pediatric or adult, clearly impact the course of the disorder as well as response to ERP. The development of a robust family informed ERP package that could be tested for efficacy and longitudinal outcome would be a great contribution to the field.

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