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Brief intensive CBT for pediatric OCD with E-therapy maintenance

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ABSTRACT

Cognitive behaviour therapy (CBT), incorporating exposure and response prevention (ERP), has received strong empirical support for the treatment of paediatric OCD, and moreover, is considered the first line treatment of choice (Geller & March, 2012). However, despite the availability of effective treatments for this chronic and debilitating disorder, only a small proportion of youth receive these evidence-based approaches. The present study aimed to examine the effectiveness of an intensive ERP-based treatment for youth OCD, using a multiple baseline controlled design. Children and youth ($N = 10$; aged 11–16 years) with a primary diagnosis of OCD were randomly assigned to a 1- or 2-week baseline monitoring condition followed by the intervention. The efficacy of the intensive treatment, involving 1 session psychoeducation, 2-sessions ERP plus e-therapy maintenance was examined across parent- child- and clinician-rated measures at post-treatment and 6-month follow-up. Overall, there were significant reductions across time on almost all measures (except self-report anxiety), and moreover, the majority of the sample (80%) were considered reliably improved, and meeting clinically significant change. At post-treatment, 60% were in remission of symptoms, and at 6-month follow-up this increased to 70%. These findings provide strong support for intensive, time-limited approaches to ERP-based CBT for children and youth with OCD.

1. Introduction

Obsessive Compulsive Disorder (OCD) in childhood is a relatively common (Zohar, 1999), yet severe and debilitating condition, characterised by widely varying symptoms and diverse comorbidity (Farrell, Waters, Milliner, & Ollendick, 2012). Further, it is associated with significant impairments at home (Cooper, 1996; Piacentini, Bergman, Keller, & McCracken, 2003; Valderhaug & Ivarsson, 2005), with peers (Allsopp & Verduyn, 1990; Storch, Ledley et al., 2006; Weidle, Jozefiak, Ivarsson, & Thomsen, 2014), and at school (Honjo et al., 1989; Toro, Cervera, Osejo, & Salamero, 1992). Cognitive behaviour therapy (CBT) that incorporates exposure and response prevention (ERP), either alone or in combination with pharmacotherapy (e.g., selective serotonin reuptake inhibitor; SSRI) has received strong empirical support (Geller & March, 2012; The Pediatric OCD Treatment Study (POTS) Team, 2004). However, despite the availability of effective treatments for this disorder only a small proportion of children and youth receive these evidence-based approaches.

CBT for OCD is difficult to access for a variety of reasons including a lack of trained therapists, clinician and patient beliefs about CBT (e.g., reluctance to engage in exposure therapy; Young, Ollendick, & Whiteside, 2014), geographical and financial barriers and the time intensive nature of treatment (Goisman et al., 1993; Marques et al., 2010; Turner, Heyman, Futh, & Lovell, 2009). For example, existing programs typically require children to attend 10–16 weekly 1 h sessions, which can be challenging for families in terms of managing the time commitment, especially when health service opening hours frequently coincide with children's school hours and parents work hours (Booth et al., 2004). Indeed, research with adults suggests the majority of patients simply do not receive treatment, or they take medication alone or receive alternative (e.g., non-CBT) psychological treatments (Blanco et al., 2006; Goodwin, Koenen, Hellman, Guardino, & Struening, 2002; Marques et al., 2010). Consequently, there is a need to provide more cost- and resource-efficient ERP-based treatments in order to increase their

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accessibility. Intensive approaches offer a number of advantages over traditional treatments, including; more rapid relief and recovery from symptoms, provision of a service to families living outside the geographical location who would not otherwise have access to a trained expert practitioner, and various efficiencies in regards to costs of treatment, particularly for families engaging in less than optimal treatment approaches (Farrell & Milliner, 2015; Whiteside et al., 2014).

In the only randomised controlled trial of intensive CBT for paediatric OCD to date, Storch et al. (2007) compared the relative efficacy of 14 sessions (90 min) of CBT delivered daily over a period of 3-weeks, to 14 sessions (90 min) of CBT delivered weekly, in a sample of 40 youth aged 7–17 years. At 3-month follow-up, intensive CBT was found to be as effective as weekly, however at post-treatment, children in the intensive treatment condition had lower global severity, as well as increased rates of remitters and responders. Subsequently, Storch, Lehmkuhl et al. (2010) delivered the same 3-week (14 session) approach to a sample of 30 children and youth who were partial or non-responders to at least two previous trials of pharmacotherapy for OCD. Children experienced a 54% reduction in their symptom severity, which was maintained at 3-month follow-up. Furthermore, approximately half of the children achieved remission. Taken together, these initial studies provide support for intensive CBT delivered daily over 3 weeks. However, given the potential for significant expense due to short-term relocation to access these specialised treatments for remote families, as well as the potential burden of parental leave from work, and children missing school, a 3-week approach may still present feasibility challenges.

In an effort to reduce this time burden, Whiteside and colleagues developed a novel 5-day intensive CBT that incorporated 10 sessions (2 × 50–75 min sessions/day). In an initial case series, reductions in OCD symptoms were observed for 3 adolescents with OCD (Whiteside, Brown, & Abramowitz, 2008). In a subsequent study with 16 youth (10–18 years), significant reductions were observed in OCD severity rom pre- to post-treatment, and symptoms continued to decline out to 5-months follow-up (Whiteside & Jacobsen, 2010). Most recently, Whiteside et al. (2014) evaluated the effectiveness of the 5-day program in a controlled baseline trial ($N = 22$, 7–18 years). During the baseline, OCD symptoms remained relatively stable; however, they were observed to improve significantly following the 5-day treatment. At 3-month follow-up, 65% of the sample was diagnosis free, and parent accommodation was also reported to decline.

While the aforementioned studies provide preliminary support for intensive CBT, they continue to follow a 1-h session model, delivered either once weekly or intensively across 1- to 3-weeks. An alternative, more concentrated model to treatment aimed at circumventing time and costs associated with accessing treatments, as well as potentially enhancing exposure therapy outcomes, has been recently proposed by Farrell and Milliner (2015) and involves even fewer CBT sessions; however, for a longer duration (e.g., 2 exposure sessions of up to 3.5 h). This alternate format stems from the work of Öst (1989), and later Ollendick and Öst (Ollendick et al., 2009) who developed the one session treatment (OST) approach for specific phobia in adults and children. A similar approach has also been piloted for the treatment of social phobia in children (Donovan, Cobham, Waters, & Occhipinti, 2015; Gallagher, Rabian, & McCloskey, 2004) providing further support for the feasibility and effectiveness of brief, intensive 3-h exposure sessions with children. The basis for the approach is that concentrated, prolonged exposure may provide greater opportunities for the extinction of fear through more continuous exposure to feared stimulus, and thus allowing for greater consolidation of learning (Farrell & Milliner, 2015). Inhibitory learning models of exposure therapy (see Bouton & King, 1983; Craske et al., 2008) highlight the importance of patients acquiring new learning during exposure therapy, which can be readily accessed in different contexts and over time. Moreover, an important associated outcome of inhibitory learning is that of developing *fear tolerance* during exposure therapy, which is arguably more essential than habituation (Abramowitz, 2013). Whilst currently un-tested, we propose that fewer sessions of *longer* duration may provide an alternative model of intensive treatment for OCD, providing a more concentrated dose of exposure, and as such opportunity for inhibitory learning. Three-hour sessions provide a more efficient model, but may also provide a stronger dose of exposure, relative to existing 1-h sessions of CBT, which may only allow for up to ~30 min a week/session of exposure (taking into consideration the opening and closing of hourly sessions – that is, reviewing homework, challenges, re-teaching the model of exposure, and reviewing and setting homework sessions – may consume at least 30 min).

Farrell and Milliner (2015) described this treatment approach with an 11-year-old boy who presented with severe OCD (CYBOCS score = 30). Treatment consisted of an education session, 2 × 3.5 h massed ERP sessions, followed by 3 × 45 min weekly e-therapy (Skype) sessions. Following treatment, the boy displayed significant improvements on various measures of OCD severity. Delivering a small number of web-based or telephone CBT sessions (Storch et al., 2011; Turner et al., 2009) following intensive sessions, allows participants the flexibility to return home, but may also assist in the generalisation of treatment gains across contexts within the home. Indeed, both web (14 weekly sessions; Storch et al., 2011) and telephone (14 weekly sessions; Turner et al., 2009) delivered CBT treatments have been found to be effective in preliminary trials for paediatric OCD.

The present study aimed to examine the effectiveness of a novel concentrated dose of CBT treatment for youth OCD, using a multiple baseline controlled design, given that such a design is supported by the evidenced based treatment movement (Task Force on Promotion and Dissemination, 1995) and allows for the systematic evaluation of the efficacy of innovative treatments in a controlled manner (Jarrett & Ollendick, 2012; Oar, Farrell, Waters, Conlon, & Ollendick, 2015). Treatment involved the combination of 1 session psychoeducation, 2 session of intensive exposure therapy combined with web-based maintenance, based on the rationale that fewer in person sessions would reduce the time and cost burden to families, and moreover, that prolonged exposure sessions may be an effective, alternative model of delivery for exposure therapy. Children and youth (aged 11–16 years) with a primary diagnosis of OCD were randomly assigned to a 1- or 2-week baseline monitoring condition followed by the intervention. It was hypothesised that OCD symptoms would remain stable during the baseline periods and then improve significantly following intensive CBT. Moreover, it was predicted that significant reductions would be observed from pre- to post-treatment on clinician ratings of OCD severity, diagnostic status, and self-reported OCD, anxiety and depression symptoms. Finally, it was expected that post-treatment gains would be maintained at 6-month follow-up.

2. Method

2.1. Participants

Prospective participants were recruited from the community via advertising in local papers, as well as radio announcements, and by referrals into the program by general practitioners. Potential participants were initially screened ($N = 27$) for inclusion on the basis of presence of obsessive-compulsive symptoms. Children who were not considered appropriate, due to the absence of sufficient OCD symptoms, were referred elsewhere ($n = 13$). Exclusion criteria

Table 1
Participant characteristics.

Participant	Age	Gender	Medication	Ethnicity	Family Income	CYBOCS Pre Score	Secondary Diagnosis	Tertiary Diagnosis
1	12	M	Sertraline (75 mg)	C	50–60 K	30	GAD	–
2	15	F	Fluvoxamine (40 mg)	C	>100 K	25	Specific Phobia	Specific Phobia
3	16	M	Fluoxetine (40 mg)	C	40–50 K	38	ODD	–
4	13	M	–	C	60–70 K	27	Social Phobia	GAD
5	16	M	–	C	50–60 K	24	GAD	ADD
6	12	F	–	C	60–70 K	25	Panic Disorder	Social Phobia
7	14	M	–	C	70–80 K	30	GAD	Social Phobia
8	11	F	Sertraline (50 mg)	C	90–100 K	31	GAD	Specific Phobia
9	15	M	Fluvoxamine (200 mg)	C	>100 K	32	GAD	ADD
10	12	F	–	C	70–80 K	29	SAD	Social Phobia

Note: M = Male; F = Female; C = Caucasian; K = 1000x; GAD = Generalised Anxiety Disorder; SAD = Separation Anxiety Disorder; ADD = Attention Deficit Disorder; ODD: Oppositional Defiant Disorder.

included psychosis, intellectual disability, or receiving concurrent psychotherapy. There were no referrals to the project during this time that met exclusion criteria. Inclusion criteria, included (1) presence of DSM-IV-TR (American Psychiatric Association, 2000) primary diagnosis of OCD; (2) at least one parent willing to attend sessions; and (3) if a child was on medication, their medication dose was required to be stable for 12 weeks prior to enrolment and remain stable for the duration of the trial.

Participants were 10 children and adolescents (aged 11–16 years), with a mean age of 13.6 years (*SD* = 1.84), comprised of 6 males and 4 females. There were a further four participants who contacted the program and were eligible for participation, but who withdrew prior to completion of assessment or prior to treatment commencing. Based on diagnostic interviews (ADIS-P; Silverman & Albano, 1996), this sample was deemed within the severe range of severity, and consisted of high comorbidity, with 100% presenting with a secondary psychiatric diagnosis, 80% presenting with a tertiary diagnosis, and 60% a fourth diagnosis. Comorbidity included other anxiety disorders, attention deficit/hyperactivity disorder (AD/HD) and oppositional defiant disorder (ODD). Based on these interviews, children presented with between 2–4 comorbid diagnoses, in addition to their OCD (*M* number of comorbid diagnoses = 3.71, *SD* = 1.15). Whilst not directly assessed as part of our trial, 2 children reported a prior diagnosis by a paediatrician of an Autism Spectrum Disorder (ASD) (Level 1). Fifty percent of the sample was stabilised on SSRI medication at enrolment.

Table 1 presents diagnostic information for the sample, including ethnicity, income, OCD severity and medication status.

2.2. Design

The present study evaluated the effectiveness of an intensive CBT approach to OCD in youth using a single case, non-concurrent multiple baseline design (Hayes, Barlow, & Nelson-Gray, 1999; Kazdin, 1998). This involved a series of AB replications, whereby following pre-treatment assessment, participants were randomly assigned to either a 1-week baseline condition ($n = 5$), or a 2-week baseline condition ($n = 5$), using a computer-generated list of randomly permuted blocks.

2.3. Measures

2.3.1. Outcome measures

2.3.1.1. The anxiety disorders interview schedule for children—parent version (ADIS-P; Silverman & Albano, 1996). The ADIS-P was developed specifically to diagnose anxiety disorders and commonly occurring comorbidity in children (Silverman & Eisen, 1992) and possesses good inter-rater and retest reliability. The ADIS-C/P has demonstrated good sensitivity to treatment effects in both childhood anxiety (Barrett, Dadds, & Rapee, 1996; Kendall, 1994; Ollendick et al., 2009) and OCD research (Barrett, Healy-Farrell, & March, 2004; Knox, Albano, & Barlow, 1996). This interview was administered to the child's parent/s. Each diagnosis receives a Clinician Severity Rating (CSR) based on clinician judgment, scored 0–8, with a score of 4 indicating a clinically significant diagnosis. Independent inter-rater reliability of ADIS-P interviews and CSR ratings by our trained assessors have been previously, and consistently, established as excellent (i.e., primary diagnosis $\kappa = 1.0$; secondary diagnosis $\kappa = 0.84$–1.0; tertiary diagnosis $\kappa = 0.83$–1.0; see Farrell et al., 2013, 2012).

2.3.1.2. National Institute of Mental Health Global Obsessive-Compulsive Scale (NIMH—GOCS and CGI; Insel, Hoover, & Murphy, 1983). This clinician-rated device consists of a single item measuring global diagnostic severity on a scale from 1 (minimal symptoms, within normal range) to 15 (very severe). The GOCS also provides a scale of clinical global severity (CGI-S), ranging from 1 (normal not ill) through to 7 (among the most severely ill). The GOCS has demonstrated good to excellent retest reliability (Kim, Dysken, & Kuskowski, 1992; Kim, Dysken, Kuskowski, & Hoover, 1993), and adequate to good convergent validity with the SCL-90 OC scale and the CY-BOCS (see Taylor, 1998).

2.3.1.3. Children's Yale-Brown Obsessive-Compulsive Scale (CYBOCS; Scahill et al., 1997). The CY-BOCS is a clinician-rated, semi-structured interview, assessing severity of OCD symptomatology. The CY-BOCS rates severity of obsessions and compulsions across five scales: (a) time occupied, (b) interference, (c) distress, (d) resistance, and (e) degree of control, and also provides a total severity score. The CY-BOCS shows reasonable reliability and validity, with good to excellent inter-rater agreement across total score, obsessions and compulsions subscale ($r = 0.84$; 0.91; and 0.66; respectively) and high internal consistency for total score ($\alpha = 0.87$; Scahill et al., 1997). Independent research groups have also provided support for the scale's psychometric properties for use among children and adolescents (Gallant et al., 2008; Storch et al., 2004; Yucelen, Rodopman-Arman, Topcuoglu, Yazgan, & Fisek, 2006). This interview was administered to children and parents together to assess overall OCD symptom severity.

2.3.1.4. Multidimensional anxiety scale for children (MASC; March, 1997). This self-report measure assesses anxiety symptoms in children across a number of scales, including physical symptoms, harm avoidance, social anxiety and separation/panic. The MASC assesses frequency of anxiety symptoms/concerns, with items being scored 0 (not at all) to 3 (often), and provides a total anxiety score. Research has indicated that the MASC has good internal reliability and convergent validity (March, 1997).

2.3.1.5. Children's Depression Inventory (CDI; Kovacs, 1992). The CDI is comprised of 27 items assessing symptoms of depression, scored 0 (absence of symptom), 1 (mild symptom), or 2 (definite

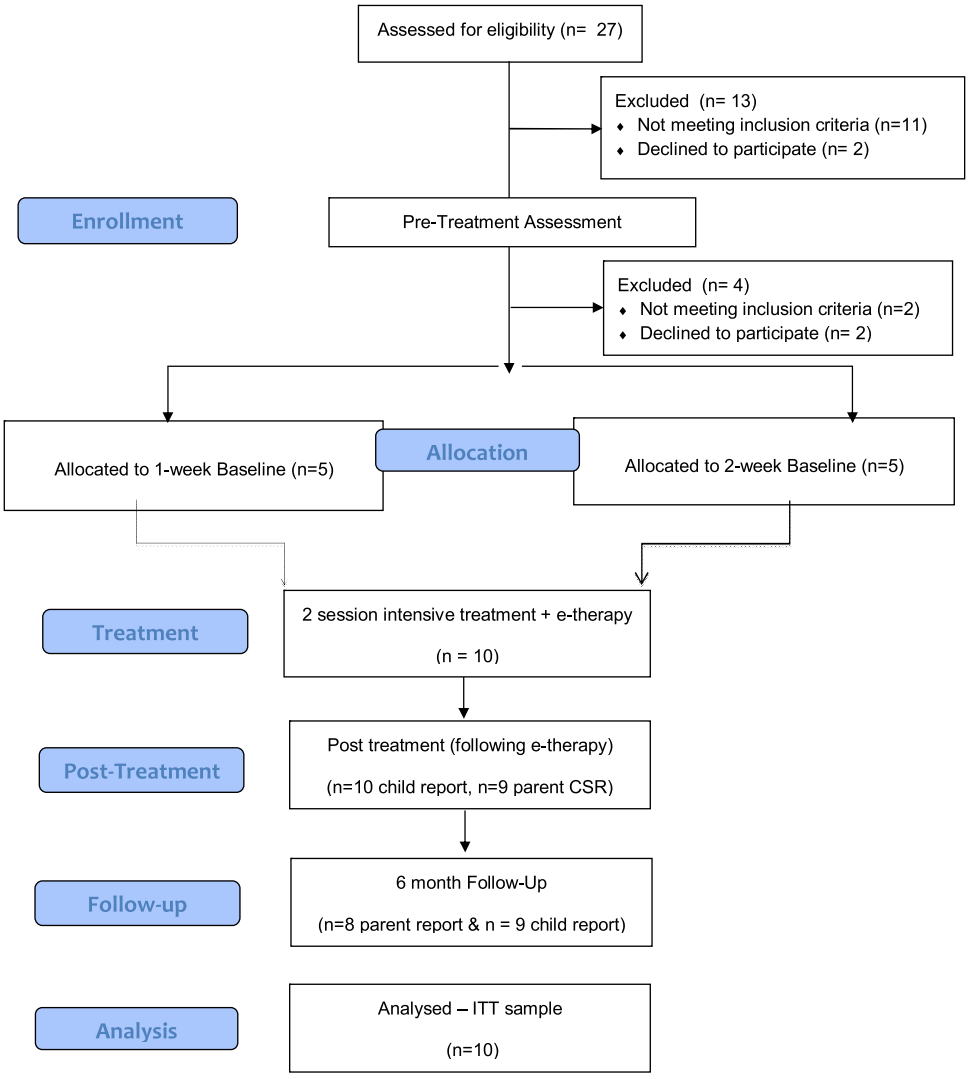

Fig. 1. Participant Flow Diagram.

symptom), with higher scores indicating increasing severity. The extensive use of the CDI in clinical and experimental research has provided ample evidence to support its reliability and validity (see Kovacs, 1992).

2.3.1.6. The Pediatric Quality of Life Inventory, parent version (PedsQL; Varni, Seid, & Kurtin, 2001). The PedsQL-Parent is a 23 item parent report measure designed to assesses health related quality of life in healthy children and those with acute and chronic health conditions. For each item parents rate responses on a 5-point Likert scale ranging from 0(Never) to 4(Almost Always). The PedsQL has well-established reliability and validity with data across multiple pediatric illnesses. It has demonstrated acceptable internal consistency in youth with psychiatric disorders (Cronbach α approaching 0.90; Limbers, Ripperger-Suhler, Heffer, & Varni, 2011; Varni & Burwinkle, 2006). The PedsQL has proven convergent and discriminant validity (Anderson et al., 2009; Limbers et al., 2011; Reinfjell, Hjemdal, Aune, Vikan, & Diseth, 2008; Varni & Limbers, 2009; Varni et al., 2001).

2.3.2. Baseline and weekly monitoring measure

2.3.2.1. Children's Yale-Brown Obsessive-Compulsive Scale–parent report (CYBOCS-SR; Storch, Murphy et al., 2006). This parent report measure of OCD severity was developed based on the original CY-BOCS and consists of 2 subscales (5-items each) assessing the distress and impairment caused by obsessions and compulsions. Preliminary studies have supported the psychometric properties of the CY-BOC-PR (Storch, Murphy et al., 2006). This measure was used at each assessment, including baseline assessments, and at the commencement of every session to monitor child's session-by-session progress.

2.4. Procedure

2.4.1. Pre-treatment

Following full ethical review and approval of all protocols, the study was advertised in the community to assist in recruitment. Interested parents completed an initial brief telephone screen in order to assess their child's eligibility (refer Fig. 1). If the child was suitable, the parent was emailed study information and consent forms and an appointment was scheduled to complete a diagnostic interview (e.g., ADIS-IV-P) over the telephone, since past studies have demonstrated reliable administration via the telephone (Lyneham & Rapee, 2005). Children deemed appropriate attended an assessment session at the university, whereby they completed the CYBOCS interview with their parents, and then separately completed various self-report measures. Trained, postgraduate-level clinicians reviewed diagnostic profiles and CYBOCS severity ratings

with the supervising clinical psychologist (LJF) in order to determine a final consensus diagnosis and CYBOCS severity profile, and confirm eligibility to proceed to the next stage of the study.

2.4.2. Baseline

On a weekly basis during the baseline period (either 1 or 2 weeks), parents completed telephone-administered ratings on the CYBOCS-SR. Parents were provided with copies to ensure they could read along as the rater read each item to the parent and obtained the severity rating.

2.4.3. Parent and child education session

Children and parents attended a one-hour education session in the week following completion of their baseline period. They received psychoeducation about OCD, including development of OCD, commons symptoms, and course of the disorder. Moreover, they were presented with education on the nature of CBT for childhood OCD, with a specific focus on the principles of exposure therapy. The intensive nature of the treatment was discussed with the parent and child and a rationale for this approach was provided; whereby the therapists ensured the child and parent understood that the intensive sessions were designed to provide a "kick start" to bossing back OCD and that the child would need to continue to practice facing and fighting OCD (ERP) during the month following the intensive sessions. The therapist also discussed the role of family accommodation in OCD and how accommodation practices serve to maintain and worsen OCD symptoms over time. Parents were introduced contingency management strategies in order to reward their child for their exposure practice.

2.4.4. Intensive treatment

One week after their education session, children and adolescents completed the intensive treatment protocol, which consisted of two intensive ERP sessions, supplemented with additional CBT strategies generally used for treatment of paediatric OCD march (March & Mulle, 1998; March, Mulle, & Herbel, 1994) including externalising OCD, cognitive therapy approaches, behavioural experiments, participant modelling, and reinforced practice. During hour one of session 1, the clinician provided a review of psychoeducation about OCD, discussed the child's symptoms of OCD, the cycle of OCD, and introduced cognitive strategies, such as how to 'boss back' OCD (using positive, strong self-talk). The second and third hour of the intensive session involved ERP targeting the child's core OCD symptoms. During the session, ERP tasks were repeated multiple times until the child's anxiety reduced (by at least 50%) at the end of each task. At the completion of the session, the child's progress was reviewed with his/her parents and together they generated ERP tasks to continue practicing between sessions. The second intensive session was carried out the following week and followed a similar structure. The clinician and child spent the 3 h engaging in numerous ERP tasks across different symptom presentations, and collaboratively challenge OCD dysfunctional beliefs through a series of behavioural experiments. At the conclusion of the session, progress was reviewed with parents and ERP tasks for the following week were planned. Sessions varied from child to child as the therapist proceeded at the child's pace. At least 3 OCD target symptoms or situations were introduced over the course of each session. To assist in generalization and to prevent relapse, exposure tasks were repeated multiple times and carried out across multiple contexts in order to effectively target each child's unique OCD symptoms (e.g., child's home, public bathrooms, beach, supermarket, school grounds).

2.4.5. Parent involvement in treatment

Parents were actively involved in the education session, at the end of their child's intensive sessions, and during all e-therapy maintenance sessions. At the conclusion of the intensive sessions, children and parents briefly reviewed progress made during the session and were reminded to schedule OCD exposure practice at home to continue progress. During their involvement in the treatment, parents received coaching on psychoeducation, problem-solving skills, strategies to reduce parental involvement in the child's symptoms, along with encouraging family support of home-based exposure and response prevention. At least one parent was required to attend each parent session.

2.4.6. E-therapy maintenance program

After their intensive treatment, families completed a 3-week e-therapy maintenance program. The child's therapist used Skype to video call the family once a week (approximately 45 min per call). At the commencement of each session, parents completed their CY-BOCS-SR ratings. Next, the therapist, child and parents reviewed progress with exposure practice that week, discussed homework compliance with exposure practice, and problem solved any difficulties. Therapists encouraged the child to engage in one ERP practice task while on the e-therapy call to ensure the child was maintaining progress. At the conclusion of each e-therapy session, the family and therapist collaboratively decided upon ongoing exposure tasks for the following week. During the final e-therapy session relapse prevention was discussed.

2.4.7. Post treatment (following e-therapy) and 6-month follow-up assessments

At 1-month follow-up (i.e., after e-therapy), parents and children returned to the university and completed a comprehensive assessment by independent trained rater's who were blind to previous assessment information and treatment information; including diagnostic interviews (e.g., ADIS-IV-P), the CY-BOCS OCD severity interview, CY-BOCS-SR ratings, as well as self-report questionnaires. At 6-month follow-up, diagnostic interviews and CY-BOCS interviews were conducted over the telephone by independent rater's, once again blind to previous assessment information, and CYBOCS-PR ratings obtained.

2.4.8. Treatment adherence

There were three trained therapists who delivered the program. Therapists were all postgraduate level clinicians with previous experience in CBT treatment of either child anxiety disorders and/or OCD. Clinicians received training in the treatment protocol by the first author, and were provided formal weekly group supervision to ensure consistency. Following each intensive sessions therapist's rated their perceived adherence and competency in delivering of the ERP treatment on a 13-item scale, with each item rated 0 (*Not at all*) to 6 (*Excellent*). Example items included "Used modelling during the session", "Elicited and worked with the child's beliefs" and "Handled difficulties in the exposure procedure". This measure was developed by Ollendick et al. (2009) for their work in OST trials for children and youth with specific phobia. Scores here are presented similarly to Ollendick et al. (2009) and Oar et al. (2015), where a mean for each item is calculated and the mean range reported. Across the items in the current study, therapists rated their competence and adherence between 3 (satisfactory) and 5 (very good), with mean ratings for each item falling between 3.57 ($SD = 0.50$) and 4.64 ($SD = 0.29$) indicating adequate to very good adherence to the therapeutic approaches.

3. Results

3.1. Overview of analyses

Single-case data were examined via visual inspection of the participant's ratings across baseline, treatment and follow-up periods

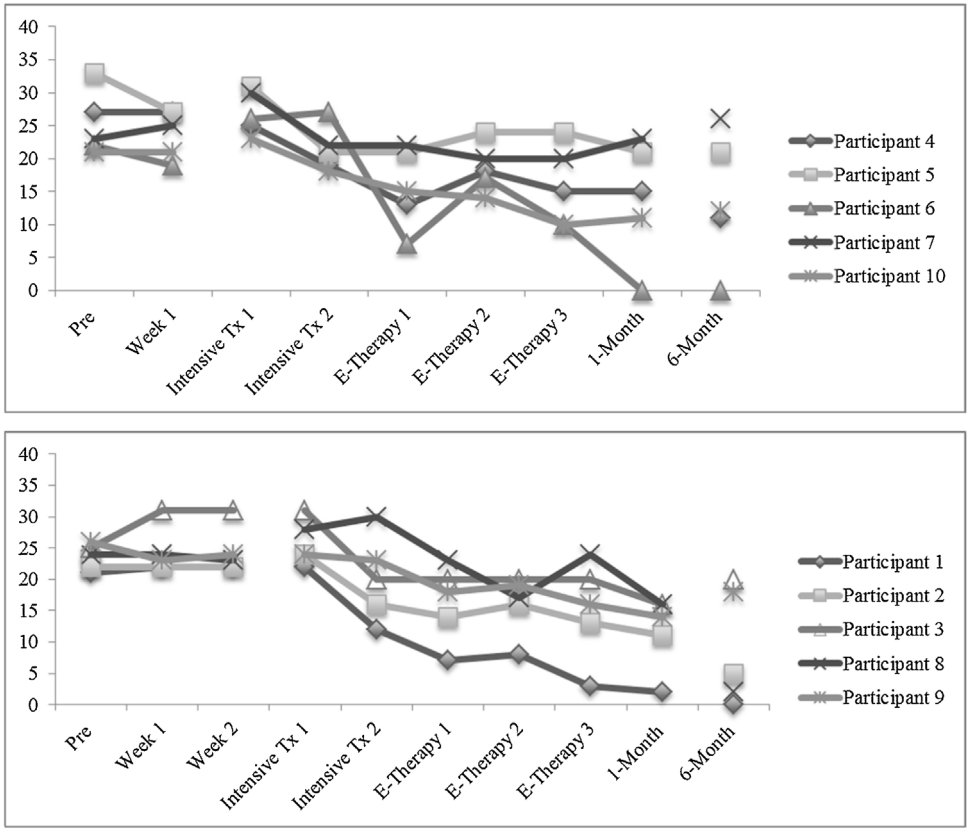

Fig. 2. Parent CYBOCS-SR across 1-week ($n = 5$) and 2-week ($n = 5$) baseline. *Note:* Participant 8 did not complete the CYBOCS-SR at pre-treatment therefore the first observation is taken from baseline week1 and brought backwards.

Table 2
Means, standard deviations and time main effects for treatment outcome measures.

Measure	Pre	Baseline – Week 1	Baseline – Week 2	Post-Treatment	6-month F/up	Significance	Effect Size ηp^2 (d)[a]
CSR	6.60 (0.52)	–	–	3.50 (2.01)	3.30 (1.94)	$p < 0.001$	0.63 (2.28)
CY-BOCS Total Score	29.10 (4.18)	–	–	14.80 (7.68)	11.80 (8.88)	$p < 0.001$	0.72 (2.09)
CGI-Severity	5.60 (0.52)	–	–	3.10 (1.45)	2.70 (1.57)	$p < 0.001$	0.71 (2.25)
NIMH GOCS	10.70 (1.76)	–	–	6.30 (3.12)	5.80 (3.62)	$p < 0.005$	0.51 (1.36)
CY-BOCS-Parent Report	24.11 (3.33)	24.10 (3.51)	25.00 (4.08)	12.90 (7.34)	11.50 (9.50)	$p < 0.001$	0.74 (1.94)
CDI	13.56 (10.89)	–	–	10.33 (7.91)	–	$p < 0.05$	(0.34)
MASC	83.60 (35.02)	–	–	60.10 (26.07)	–	$p = 0.12$	(0.76)
PedsQL	35.33 (12.14)	–	–	18.55 (14.92)	–	$p < 0.05$	(1.23)

Note. CSR = ADIS-P Clinician Severity Rating; CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; CGI = Clinical Global Impression; NIMH GOCS = National Institute of Mental Health Global Obsessive-Compulsive Scale; CYBOCS-SR = Children's Yale Brown Obsessive Compulsive Scale Self-Report; CDI = Children's Depression Inventory; MASC = Multidimensional Anxiety Scale for Children; PedsQL = Pediatric Quality of Life Scale – Parent Version.

[a] Cohen's calculated based on paired samples t-tests (within subjects), either pre to 6 months follow-up, or pre to post-treatment in the case of CDI, MASC and PedsQL.

in line with recent guidelines for reporting single-case data (i.e., SCRIBE Statement; Tate et al., 2016). Stability over the baseline was examined by way of *t*-tests (for 1-week baseline) or ANOVA (for 2-week baseline). A series of repeated measures ANOVAs were conducted followed by component pairwise comparisons, to examine participant changes over time on the primary outcome measures (CSR, CYBOCS, CGI-S, NIMH-GOCS) and secondary outcome measures (CY-BOCS-PR, CDI, MASC). A Reliable Change Index (RCI; Jacobson & Truax, 1991) was calculated to determine whether the magnitude of change in children's OCD severity (CY-BOCS) was statistically reliable. An RCI cut-off of 1.96 standard deviation units was used to meet criteria for reliable improvement. Test-retest reliability for the CY-BOCS was obtained from Scahill et al. (1997). Clinically significant improvement, defined by Jacobson and Truax (1991) as a change of two standard deviations from the pre-treatment mean, was also assessed in relation to OCD symptom severity (CY-BOCS) and OCD Diagnostic severity (CSR). Furthermore, children were considered "responders" if they achieved an equal to or greater than 25% reduction on the CY-BOCS, and moreover, were considered "recovered" if they achieved equal to or greater than 50% reduction on the CY-BOCS, as well as obtained a score of equal to or less than 14 (Storch, Lewin, De Nadai, & Murphy, 2010).

3.2. Participant retention

All 10 children completed the child and parent education session, intensive treatment and e-therapy. All children completed the post treatment (following e-therapy) assessment, except one parent was unable to complete the diagnostic interview. At 6-month follow-up, 2 parents were unable to complete the diagnostic interview, and one child was unable to be contacted for the child

interview. In these cases, we used last observation carried forward (LOCF) and therefore present intention-to-treat analyses, a commonly used method for dealing with missing data (Ollendick et al., 2015; Waters et al., 2014). Children and their parents completed self and parent report measures at pre-treatment and post-treatment; however, one child did not complete the CDI at pre-treatment, and another child did not complete the CDI at post-treatment (hence analysis includes LOCF). Further, two parents did not complete the quality of life measure at post-treatment, hence analyses includes LOCF.

3.3. Primary outcome measures

To establish the stability of the baseline period from pre-treatment to week 1, and to week 2 (for the 2-week condition), analyses were conducted separately for the one week ($n = 5$; t-test) and two week ($n = 5$; ANOVA) baseline groups. There were no significant differences between pre-treatment scores and each of the baseline scores (i.e., 1 week, and 2 weeks) for parent CY-BOCS-SR ratings ($p > 0.05$; see Fig. 2). Visual inspection of the single-case data generally demonstrates stability across the baseline, with decline following of the treatment.

Across primary outcome measures (see Table 2), there were significant within subjects, repeated measures effects for time, with reductions from pre-treatment to post-treatment and 6-month follow-up on CSR ratings $F(2,18) = 15.08$, $p < 0.001$, $\eta_p^2 = 0.63$; CY-BOCS total severity $F(2,18) = 22.62$, $p < 0.001$, $\eta_p^2 = 0.72$; CGI-severity $F(2,18) = 24.70$, $p < 0.001$, $\eta_p^2 = 0.71$; and NIMH GOCS ratings $F(2,18) = 9.22$, $p < 0.005$, $\eta_p^2 = 0.51$.

A significant reduction in CSR was found from pre- to post-treatment, $t(9) = 3.10$, $p = .001$, pre-treatment to 6-months, $t(9) = 3.30$, $p = 0.001$, however, there was no significant change from post-treatment to 6-month follow-up $p > 0.05$. Likewise, there was a significant reduction in CY-BOCS total scores from pre- to post-treatment, $t(9) = 14.30$, $p = 0.001$, pre-treatment to 6-months $t(9) = 17.30$, $p = 0.001$, and no significant change from post-treatment to 6-month follow-up $p > 0.05$ indicating stability of gains. On CGI-severity scores, there was a significant reduction from pre- to post-treatment, $t(9) = 2.50$, $p = 0.001$, pre-treatment to 6-months, $t(9) = 2.90$, $p < 0.001$; however, there was no significant change from post-treatment to 6-month follow-up $p > 0.05$. Finally, on the NIMH GOCS, there was a significant reduction in scores from pre to post-treatment, $t(9) = 4.40$, $p < 0.05$, pre-treatment to 6-months, $t(9) = 4.90$, $p < 0.005$; however, there was no significant change from post-treatment to 6-month follow-up $p > 0.05$. Effect sizes (d) from pre- to 6 months follow-up are in Table 2.

Across secondary outcome measures (see Table 2), there were significant within subjects effect for time, with reductions from pre-treatment to post-treatment and 6-month follow-up on CY-BOCS-SR Parent ratings $F(2,18) = 25.92$, $p < 0.001$, $\eta_p^2 = 0.74$. Moreover, on self-reports, there was a significant decrease in child reported depression from pre to post-treatment $t(8) = 2.31$; $p < 0.05$; however, there was no change on the children's self-reported (MASC) anxiety symptoms ($p > 0.05$). On parent rated quality of life (PedsQoL), there were significant improvements from pre-treatment to post-treatment $t(8) = 2.85$; $p < 0.05$.

3.4. Clinically significant improvement and reliable change

At post-treatment and at 6-month follow-up, 8 of 10 (80%) children showed reliable change (different children at each time point) on the CY-BOCS total scores (RCI Cut off = 8.33). In relation to clinically significant improvement at post treatment, 8 of the 10 children (80%) children were considered "improved" on the basis of diagnostic interviews (CSR; >2 SDs below pre-CSR mean). Furthermore, at 6-month follow-up, 8 of the 10 (80%) children also demonstrated clinically significant "improvement" on CSR ratings. Of the 2 children who were not considered "improved" at post-treatment, one child remained "not improved" at 6-month follow-up, in addition to one child who was "improved" declining at 6-month follow-up (one child also therefore improved). In terms of definitions for treatment response and remission, described by Storch, Lewin et al. (2010), at post-treatment, 80% of the sample were considered "responders" whereas 60% were deemed in "remission"; while at 6-month follow-up there were 80% were "responders" as well as 70% in "remission". Fig. 3 illustrates participants meeting clinically significant improvement on CYBOCS.

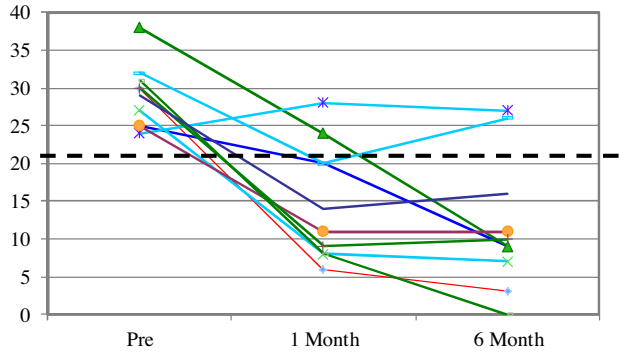

Fig. 3. Clinically significant improvement on CYBOCS (by scores below the line), defined by a reduction of 2 standard deviations from pre-treatment mean (<20.75).

In relation to diagnostic comorbidity, significant differences were observed in the total number of children's diagnoses over time, $F(2,7) = 11.27$, $p = .006$, $\eta_p^2 = 0.76$. Although there was no significant reductions in the number of diagnoses from pre-treatment (M number comorbid diagnoses = 2.6, $SD = 1.07$) to post-treatment ($M = 1.66$; $SD = 1.50$); there were significant reductions in the number of comorbid diagnoses from pre-treatment to 6-month follow-up ($M = 0.80$, $SD = 0.79$), $t(8) = 4.07$, $p < 0.005$, and post-treatment to 6-month follow-up, $t(8) = 2.53$, $p < 0.05$.

4. Discussion

This study evaluated the effectiveness of a novel approach to intensive therapy for children and adolescents with OCD. Specifically, this study examined the preliminary efficacy of a novel 2-session intensive ERP-based CBT program, combined with e-therapy maintenance (3 weeks) using a multiple-baseline design to establish stability of symptoms over a no-treatment waiting period, relative to change in symptoms following intensive therapy, plus e-therapy maintenance, at post-treatment and out to 6-month follow-up. It was expected that symptoms would be relatively stable across baseline, and then significantly decline following treatment and remain stable out to follow-up. The intensive treatment evaluated in the current study is novel in a number of important ways. This is the first trial of concentrated, prolonged exposure therapy for paediatric OCD – an approach that is deemed well-established for the treatment of child phobias in a one-session format (see Ollendick & Davis, 2013), and that has preliminary support for social phobia across 4 sessions (e.g., Donovan et al., 2015). Moreover, this is the first trial which combines an intensive clinic-based treatment, with web-based maintenance, allowing families to access face-to-face expert CBT, with minimal disruption to family routines and at reduced costs relative higher frequency sessions. Finally, this treatment reduces the number of in-clinic visits from 5 to 14 sessions (as described in existing programs) to only 2 in clinic exposure sessions, once again addressing cost and time barriers to treatment for families.

There was evidence for stability of symptoms across both 1-week or 2-week baseline periods, with children then experiencing significant improvement across a broad range of measures, including clinician-rated, and parent and child rated symptoms measures following intensive CBT, with significant gains made at post-treatment and follow-up relative to pre-treatment assessment. In addition, data analysed at an individual level also supported the effectiveness of the treatment, with 80% of the sample achieving reliable change, as well as 80% experiencing clinically significant improvements. Moreover, 80% of the sample were considered treatment responders at post-treatment and follow-up, and furthermore, 70% were also in remission of OCD symptoms by 6-month follow-up.

The current results are largely in line with previous studies examining both intensive and traditional weekly delivery of CBT for OCD, although estimates of change and response vary across studies. In regards to outcomes relative to weekly 14 sessions CBT, the largest, most robust controlled trial to date (POTS, 2004), reported remission rates of 53.6% for combined CBT and sertraline using more stringent criteria of CYBOCS score <10. Using these criteria, this study produced similar outcomes, with 40% achieving a CYBOCS score less than 10 at post-treatment and 60% achieving remission by 6-month follow-up. Relative to Whiteside et al. (2014) multiple baseline trial of 5-day intensive treatment, the current results are largely similar, with CYBOCS effect size (*d*) for the current trial of 2.09 at 6-month follow-up, relative to 1.98 at 3-month follow-up in Whiteside et al. (2014). Thus, the outcomes presented in this preliminary multiple baseline trial are consistent with those of weekly 12–14 sessions CBT, 3-weeks of intensive CBT, and 10 sessions CBT delivered intensively over 5 days. Collectively, there is emerging evidence that exposure-based CBT for youth with OCD is indeed effective, and moreover, retains such efficacy even with more intensive time limited approaches, providing promise for more efficient modes of treatment delivery.

It is important to note, that across the various modes of delivery of CBT for paediatric OCD (i.e., weekly, 3-weeks, 5-days) that have been empirically evaluated in the research literature, actual therapist contact time remains relatively stable, at between approximately 9 h (current trial) to 14 h (POTS, 2004). Therefore, on the basis of the research to date, it appears that approximately 10 h of therapy time may be a good guide to achieve clinically significant change for youngsters with OCD. However, the findings presented here suggest that intensive approaches, with fewer in-clinic sessions are needed to achieve comparable improvements. Therefore, there is now emerging evidence that we can assist children and families with more efficient therapy approaches, achieving response and remission much earlier than with traditional weekly approaches. The current sample was one which was highly comorbid and severe, with ratings on both diagnostic interviews, symptoms interviews and across self-report measures indicating the severe range of symptomatology. Therefore, the current outcomes may have adequate generalizability to a broad range of patients with paediatric OCD given the favourable response achieved with the current complex (by way of high comorbidity) and severe sample.

It is also noteworthy that exposure sessions were conducted in multiple contexts for each of the 2 ERP sessions, in order to effectively target the child's OCD fears and obsessions. In some instances this was the child's home, in others it was the park, the supermarket, the beach, or for others, simply around campus (in stores, public restrooms, offices, running track). Conducting home visits may increase cost burden in some cases (for out of town clients) but also may serve to increase efficiencies in other cases by not having to schedule appointments around clinic office hours or room availabilities. To date there is limited empirical evidence to examine whether ERP is enhanced by conducting it in the home or natural contexts versus the clinic office; however, one study has suggested that there is no added benefit (see Rowa et al., 2007). Our rationale for providing ERP across contexts was twofold; (1) to be able to activate adequate arousal during ERP for OCD, it often requires finding more natural contexts; and (2) more recent evidence from adult studies across various anxiety disorders suggests that exposure therapy outcomes may be enhanced when conducted across multiple contexts (see Craske et al., 2008, 2014). Obviously, it is a feasibility issue (including access and costs) for clients and therapists in terms of where they can provide ERP. The results in this study provide preliminary efficacy for intensive exposure and e-therapy conducted across multiple contexts.

Whilst this study provides preliminary evidence for the efficacy of novel intensive CBT by way of 2 prolonged exposure sessions, combined with e-therapy maintenance, there are some limitations to the current study which must be noted. Single-case designs require stability of symptoms over the baseline period, and whilst there was a general trend for stability, there was slight decline for 2 participants during the baseline phase, which does reduce the casual inferences that can be drawn from the effects of the treatment for those participants. Furthermore, the design does not allow for a test of the novel intervention against another intervention, which is a more rigorous evaluation of a treatment, and as such, large randomized controlled trials with active comparator conditions would strengthen the efficacy of this treatment. Furthermore, although the sample recruited was within the severe range of OCD and were highly comorbid increasing generalizability, the age range was limited from 11 to 16 years, and the ethnicity was purely Caucasian, therefore limiting the generalizability of findings to more ethnically diverse samples, and with younger patients. Finally, the diagnostic raters, whilst independent and blind to previous assessment data and treatment information were not blind to assessment time point.

5. Conclusions

Overall, the study provides favourable evidence for novel intensively delivered exposure therapy plus response prevention, combined with e-therapy maintenance for children and youth with OCD. The outcomes offer promise for more efficient models of treatment delivery and importantly, more rapid improvements for children who are often severely impaired. The potential of this novel approach is that it may provide an even more efficient and cost effective means of accessing specialist clinic-based treatment. Families access only 2 sessions of intensive therapist-assisted ERP, which could potentially occur over 2 days at a specialist centre, reducing time away from school, work and reducing accommodation costs. Further controlled trials, with larger samples, of this treatment delivered over 2 consecutive days is an important next step. Furthermore, prolonged exposure sessions may have the potential to offer greater opportunity for enhanced inhibitory learning to occur within sessions, and may provide superior outcomes to traditional hourly delivery of ERP. Once again, randomised controlled trials are needed to empirically test the relative efficacy of this novel approach; nevertheless, this pilot study provides preliminary evidence for the feasibility, acceptability and indeed, promising outcomes associated with this brief treatment, combining only 2-sessions of prolonged exposure therapy with e-therapy maintenance.

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References

Abramowitz, J. S. (2013). The practice of exposure therapy: relevance of cognitive-behavioral theory and extinction theory. *Behavior Therapy*, *44*(4), 548–558. http://dx.doi.org/10.1016/j.beth.2013.03.003

Allsopp, M., & Verduyn, C. (1990). Adolescents with obsessive-compulsive disorder: a case note review of consecutive patients referred to a provincial regional adolescent psychiatry unit. *Journal of Adolescence*, *13*(2), 157–169. http://dx.doi.org/10.1016/0140-1971(90)90005-R

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington DC: American Psychiatric Association Task Force.

Anderson, C. J., Kelly, E. H., Klaas, S. J., Russell, H., Daharsh, E., & Vogel, L. C. (2009). Anxiety and depression in children and adolescents with spinal cord injuries. *Developmental Medicine and Child Neurology*, *51*(10), 826–832. http://dx.doi.org/10.1111/j. 1469-8749.2009.03268.x

Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1996). Family treatment of childhood anxiety: a controlled trial. *Journal of Consulting and Clinical Psychology*, *64*(2), 333–342. http://dx.doi.org/10.1037/0022-006X.64.2.333

Barrett, P. M., Healy-Farrell, L. J., & March, J. S. (2004). Cognitive-behavioral family treatment of childhood obsessive-compulsive disorder: a controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*(1), 46–62. http://dx.doi.org/10.1097/00004583-200401000-00014

Blanco, C., Olfson, M., Stein, D. J., Simpson, H. B., Gameroff, M. J., & Narrow, W. H. (2006). Treatment of obsessive-compulsive disorder by U.S. psychiatrists. *The Journal of Clinical Psychiatry*, *67*(6), 946–951.

Booth, M. L., Bernard, D., Quine, S., Kang, M. S., Usherwood, T., Alperstein, G., & Bennett, D. L. (2004). Access to health care among Australian adolescents young people's perspectives and their sociodemographic distribution. *Journal of Adolescent Health*, *34*(1), 97–103. http://dx.doi.org/10.1016/j.jadohealth.2003.06.011

Bouton, M. E., & King, D. A. (1983). Contextual control of the extinction of conditioned fear: tests for the associative value of the context. *Journal of Experimental Psychology: Animal Behavior Processes*, *9*(3), 248–265. http://dx.doi.org/10.1037/0097-7403.9.3.248

Cooper, M. (1996). Obsessive compulsive disorder: effects on family members. *American Journal of Orthopsychiatry*, *66*(2), 296–304. http://dx.doi.org/10.1037/h0080180

Craske, M. G., Kircanski, K., Zelikowsky, M., Mystkowski, J., Chowdhury, N., & Baker, A. (2008). Optimizing inhibitory learning during exposure therapy. *Behaviour Research and Therapy*, *46*(1), 5–27. http://dx.doi.org/10.1016/j.brat.2007.10.003

Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: an inhibitory learning approach. *Behaviour Research and Therapy*, *58*, 10–23. http://dx.doi.org/10.1016/j.brat.2014.04.006

Donovan, C. L., Cobham, V., Waters, A. M., & Occhipinti, S. (2015). Intensive group-based CBT for child social phobia: a pilot study. *Behavior Therapy*, *46*(3), 350–364. http://dx.doi.org/10.1016/j.beth.2014.12.005

Farrell, L. J., & Milliner, E. L. (2015). Intensive cognitive behavioural treatment for Obsessive Compulsive Disorder in children and adolescents. *Psychopathology Review*, *1*(1), 182–188. http://dx.doi.org/10.5127/pr.034113

Farrell, L. J., Waters, A. M., Milliner, E. L., & Ollendick, T. H. (2012). Comorbidity and treatment response in pediatric obsessive-compulsive disorder: a pilot study of group cognitive-behavioral treatment. *Psychiatry Research*, *199*(2), 115–123. http://dx.doi.org/10.1016/j.psychres.2012.04.035

Farrell, L. J., Waters, A. M., Boschen, M. J., Hattingh, L., McConnell, H., Milliner, E. L., . . . & Storch, E. A. (2013). Difficult to treat pediatric Obsessive Compulsive Disorder: feasibility and preliminary results of a randomized pilot trial of D-cycloserine augmented behaviour therapy. *Depression and Anxiety*, *30*(8), 723–731. http://dx.doi.org/10.1002/da.22132

Gallagher, H. M., Rabian, B. A., & McCloskey, M. S. (2004). A brief group cognitive-behavioral intervention for social phobia in childhood. *Journal of Anxiety Disorders*, *18*(4), 459–479. http://dx.doi.org/10.1016/S0887-6185(03)00027-6

Gallant, J., Storch, E. A., Merlo, L. J., Ricketts, E. D., Geffken, G. R., Goodman, W. K., & Murphy, T. K. (2008). Convergent and discriminant validity of the children's Yale-Brown obsessive compulsive scale-symptom checklist. *Journal of Anxiety Disorders*, *22*(8), 1369–1376. http://dx.doi.org/10.1016/j.janxdis.2008.01.017

Geller, D. A., & March, J. S. (2012). Practice parameter for the assessment and treatment of children and adolescents with obsessive-compulsive disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, *51*(1), 98–113. http://dx.doi.org/10.1016/j.jaac.2011.09.019

Goisman, R. M., Rogers, M. P., Steketee, G. S., Warshaw, M. G., Cuneo, P., & Keller, M. B. (1993). Utilization of behavioral methods in a multicenter anxiety disorders study. *The Journal of Clinical Psychiatry*, *54*(6), 213–218.

Goodwin, R., Koenen, K. C., Hellman, F., Guardino, M., & Struening, E. (2002). Helpseeking and access to mental health treatment for obsessive-compulsive disorder. *Acta Psychiatrica Scandinavica*, *106*(2), 143–149.

Hayes, S. C., Barlow, D. H., & Nelson-Gray, R. O. (1999). *The scientist practitioner: research and accountability in the age of managed care*. University of Michigan: Allyn & Bacon.

Honjo, S., Hirano, C., Murase, S., Kaneko, T., Sugiyama, T., Ohtaka, K., . . . & Wakabayashi, S. (1989). Obsessive-compulsive symptoms in childhood and adolescence. *Acta Psychiatrica Scandinavica*, *80*(1), 83–91. http://dx.doi.org/10.1111/j. 1600-0447.1989. tb01304.x

Insel, T. R., Hoover, C., & Murphy, D. L. (1983). Parents of patients with obsessive-compulsive disorder. *Psychological Medicine*, *13*(04), 807–811. http://dx.doi.org/10.1017/S0033291700051515

Jacobson, N. S., & Truax, P. (1991). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*(1), 12–19. http://dx.doi.org/10.1037/0022-006X.59.1.12

Jarrett, M. A., & Ollendick, T. H. (2012). Treatment of comorbid attention-deficit/hyperactivity disorder and anxiety in children: a multiple baseline design analysis. *Journal of Consulting and Clinical Psychology*, *80*(2), 239–244. http://dx.doi.org/10.1037/a0027123

Kazdin, A. E. (1998). *Research design in clinical psychology* (3 ed.). Needham Heights, MA: Allyn & Bacon.

Kendall, P. C. (1994). Treating anxiety disorders in children: results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *62*(1), 100–110. http://dx.doi.org/10.1037/0022-006X.62.1.100

Kim, S. W., Dysken, M. W., & Kuskowski, M. (1992). The symptom checklist-90: obsessive-compulsive subscale: a reliability and validity study. *Psychiatry Research*, *41*(1), 37–44. http://dx.doi.org/10.1016/0165-1781(92)90016-V

Kim, S. W., Dysken, M. W., Kuskowski, M., & Hoover, K. M. (1993). The yale-brown obsessive-compulsive scale (Y-BOCS) and the NIMH global obsessive-compulsive scale (NIMH-GOCS): a reliability and validity study. *International Journal of Methods in Psychiatric Research*, *3*(1), 37–44.

Knox, L. S., Albano, A. M., & Barlow, D. H. (1996). Parental involvement in the treatment of childhood obsessive compulsive disorder: a multiple-baseline examination incorporating parents. *Behavior Therapy*, *27*(1), 93–114. http://dx.doi.org/10.1016/S0005-7894(96)80038-4

Kovacs, M. (1992). *Children's depression inventory (CDI)*. Tonawanda, NY: Multi-Health Systems.

Limbers, C. A., Ripperger-Suhler, J., Heffer, R. W., & Varni, J. W. (2011). Patient-reported Pediatric Quality of Life Inventory™ 4.0 generic core scales in pediatric patients with attention-deficit/hyperactivity disorder and comorbid psychiatric disorders: feasibility, reliability, and validity. *Value in Health*, *14*(4), 521–530. http://dx.doi.org/10.1016/j.jval.2010.10.031

Lyneham, H. J., & Rapee, R. M. (2005). Agreement between telephone and in-person delivery of a structured interview for anxiety disorders in children. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*(3), 274–282. http://dx.doi.org/10.1097/00004583-200503000-0001

March, J. S., & Mulle, K. (1998). *OCD in children and adolescents: a cognitive-behavioral treatment manual*. New York: Guilford Press.

March, J. S., Mulle, K., & Herbel, B. (1994). Behavioral psychotherapy for children and adolescents with obsessive-compulsive disorder: an open trial of a new protocol driven treatment package. *Journal of the American Academy of Child and Adolescent Psychiatry*, *33*(3), 333–341. http://dx.doi.org/10.1097/00004583-199403000-00006

March, J. S. (1997). *Multidimensional anxiety scale for children*. North Tonawanda, NY: Multi-Health Systems.

Marques, L., LeBlanc, N. J., Weingarden, H. M., Timpano, K. R., Jenike, M., & Wilhelm, S. (2010). Barriers to treatment and service utilization in an internet sample of individuals with obsessive-compulsive symptoms. *Depression and Anxiety*, *27*(5), 470–475. http://dx.doi.org/10.1002/da.20694

Oar, E. L., Farrell, L. J., Waters, A. M., Conlon, E. G., & Ollendick, T. H. (2015). One-session treatment for pediatric blood-injection-injury phobia: a controlled multiple baseline trial. *Behaviour Research and Therapy*, *73*, 131–142. http://dx.doi.org/10.1016/j.brat.2015.08.002

Ollendick, T. H., & Davis, T. E., III. (2013). One-session treatment for specific phobias: a review of Öst's single-session exposure with children and adolescents. *Cognitive Behaviour Therapy*, *42*(4), 275–283. http://dx.doi.org/10.1080/16506073.2013.773062

Ollendick, T. H., Öst, L. G., Reuterskiöld, L., Costa, N., Cederlund, R., Sirbu, C., . . . & Jarrett, M. A. (2009). One-session treatment of specific phobias in youth: a randomized clinical trial in the United States and Sweden. *Journal of Consulting and Clinical Psychology*, *77*(3), 504–516. http://dx.doi.org/10.1037/a0015158

Ollendick, T. H., Halldorsdottir, T., Fraire, M. G., Austin, K. E., Noguchi, R. J. P., Lewis, K. M., . . . & Whitmore, M. J. (2015). Specific Phobias in youth: a randomized controlled trial comparing one-session treatment to a parent-augmented one-session treatment. *Behavior Therapy*, *46*, 141–155.

Öst, L. G. (1989). One-session treatment for specific phobias. *Behaviour Research and Therapy*, *27*(1), 1–7. http://dx.doi.org/10.1016/0005-7967(89)90113-7

Piacentini, J., Bergman, R. L., Keller, M. B., & McCracken, J. (2003). Functional impairment in children and adolescents with Obsessive-Compulsive Disorder. *Journal of Child and Adolescent Psychopharmacology*, *13*(Suppl. 1), 61–69. http://dx.doi.org/10.1089/104454603322126359

Reinfjell, T., Hjemdal, O., Aune, T., Vikan, A., & Diseth, T. H. (2008). The Pediatric Quality of Life Inventory (PedsQL) 4.0 as an assessment measure for depressive symptoms: a correlational study with young adolescents. *Nordic Journal of Psychiatry*, *62*(4), 279–286.

Rowa, K., Antony, M. M., Summerfeldt, L. J., Purdon, C., Young, L., & Swinson, R. P. (2007). Office-based vs. home-based behavioral treatment for obsessive-compulsive disorder: a preliminary study. *Behaviour Research and Therapy*, *45*(8), 1883–1892. http://dx.doi.org/10.1016/j.brat.2007.02.009

Scahill, L., Riddle, M. A., McSwiggin-Hardin, M., Ort, S. I., King, R. A., Goodman, W. K., . . . & Leckman, J. F. (1997). Children's Yale-Brown obsessive compulsive scale: reliability and validity. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*(6), 844–852. http://dx.doi.org/10.1097/00004583-199706000-00023

Silverman, W. K., & Albano, A. M. (1996). *The anxiety disorders interview schedule for DSM-IV-child and parent versions*. London: Oxford University Press.
Silverman, W. K., & Eisen, A. R. (1992). Age differences in the reliability of parent and child reports of child anxious symptomatology using a structured interview. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*(1), 117–124. http://dx.doi.org/10.1097/00004583-199201000-00018
Storch, E. A., Murphy, T. K., Geffken, G. R., Soto, O., Sajid, M., Allen, P., . . . & Goodman, W. K. (2004). Psychometric evaluation of the children's Yale-Brown obsessive–compulsive scale. *Psychiatry Research*, *129*(1), 91–98. http://dx.doi.org/10.1016/j.psychres.2004.06.009
Storch, E. A., Geffken, G. R., Merlo, L. J., Mann, G., Duke, D., Munson, M., . . . & Goodman, W. K. (2007). Family-based cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: comparison of intensive and weekly approaches. *Journal of the American Academy of Child and Adolescent Psychiatry*, *46*(4), 469–478. http://dx.doi.org/10.1097/chi.0b013e31803062e7
Storch, E. A., Caporino, N. E., Morgan, J. R., Lewin, A. B., Rojas, A., Brauer, L., . . . & Murphy, T. K. (2011). Preliminary investigation of web-camera delivered cognitive-behavioral therapy for youth with obsessive-compulsive disorder. *Psychiatry Research*, *189*(3), 407–412. http://dx.doi.org/10.1016/j.psychres.2011.05.047
Storch, E. A., Ledley, D. R., Lewin, A. B., Murphy, T. K., Johns, N. B., Goodman, W. K., & Geffken, G. R. (2006). Peer victimization in children with obsessive-compulsive disorder: relations with symptoms of psychopathology. *Journal of Clinical Child and Adolescent Psychology*, *35*(3), 446–455. http://dx.doi.org/10.1207/s15374424jccp3503_10
Storch, E. A., Lehmkuhl, H. D., Ricketts, E., Geffken, G. R., Marien, W., & Murphy, T. K. (2010). An open trial of intensive family based cognitive-behavioral therapy in youth with obsessive-compulsive disorder who are medication partial responders or nonresponders. *Journal of Clinical Child and Adolescent Psychology*, *39*(2), 260–268. http://dx.doi.org/10.1080/15374410903532676
Storch, E. A., Lewin, A. B., De Nadai, A. S., & Murphy, T. K. (2010). Defining treatment response and remission in obsessive-compulsive disorder: a signal detection analysis of the children's Yale-Brown obsessive compulsive scale. *Journal of the American Academy of Child and Adolescent Psychiatry*, *49*(7), 708–717. http://dx.doi.org/10.1016/j.jaac.2010.04.005
Storch, E. A., Murphy, T. K., Adkins, J. W., Lewin, A. B., Geffken, G. R., Johns, N. B., . . . & Goodman, W. K. (2006). The Children's Yale-brown Obsessive-Compulsive Scale: psychometric properties of child- and parent-report formats. *Journal of Anxiety Disorders*, *20*(8), 1055–1070. http://dx.doi.org/10.1016/j.janxdis.2006.01.006
Task Force on Promotion and Dissemination. (1995). Training in and dissemination of empirically validated treatments: report and recommendations. *The Clinical Psychologist*, *48*(1), 3–23.
Tate, R. L., Perdices, M., Rosenkoetter, U., Shadish, W., Vohra, S., Barlow, D. H., . . . & Wilson, B. (2016). The single-case reporting guideline In behavioural interventions (SCRIBE) 2016 statement. *Archives of Scientific Psychology*, *4*(1), 1–9. http://dx.doi.org/10.1037/arc0000026
Taylor, S. (1998). Assessment of obsessive-compulsive disorder. In: R. Swinson, & M. Antony (Eds.), *Obsessive-compulsive disorder: theory, research, and treatment* (pp. 229–257). New York: Guilford.
The Pediatric OCD Treatment Study (POTS) Team. (2004). Cognitive-behavior therapy, sertraline, and their combination for children and adolescents with obsessive-compulsive disorder. *Journal of the American Medical Association*, *292*(16), 1969–1976.
Toro, J., Cervera, M., Osejo, E., & Salamero, M. (1992). Obsessive-compulsive disorder in childhood and adolescence: a clinical study. *Journal of Child Psychology and Psychiatry*, *33*(6), 1025–1037. http://dx.doi.org/10.1111/j.1469-7610.1992. tb00923.x
Turner, C., Heyman, I., Futh, A., & Lovell, K. (2009). A pilot study of telephone cognitive-behavioural therapy for obsessive-compulsive disorder in young people. *Behavioural and Cognitive Psychotherapy*, *37*(04), 469–474.
Valderhaug, R., & Ivarsson, T. (2005). Functional impairment in clinical samples of Norwegian and Swedish children and adolescents with obsessive-compulsive disorder. *European Child & Adolescent Psychiatry*, *14*(3), 164–173. http://dx.doi.org/10.1007/s00787-005-0456-9
Varni, J. W., & Burwinkle, T. (2006). The PedsQLTM as a patient-reported outcome in children and adolescents with attention-deficit/hyperactivity disorder: a population-based study. *Health and Quality of Life Outcomes*, *4*(1), 26.
Varni, J. W., & Limbers, C. A. (2009). The Pediatric Quality of Life Inventory: measuring pediatric health-related quality of life from the perspective of children and their parents. *Pediatric Clincs of North America*, *56*(4), 843–863. http://dx.doi.org/10.1016/j.pcl.2009.05.016
Varni, J. W., Seid, M., & Kurtin, P. S. (2001). PedsQL(TM) 4.0: reliability and validity of the Pediatric Quality of Life Inventory(TM) Version 4.0 generic core scales in healthy and patient populations. *Medical Care*, *39*(8), 800–812.
Waters, A. M., Farrell, L. J., Zimmer-Gembeck, M., Milliner, E. L., Tiralongo, E., Donovan, C. L., . . . & Ollendick, T. H. (2014). Augmenting one session treatment of children's specific phobias with attention training towards positive stimuli. *Behaviour Research and Therapy*, *62*, 107–119.
Weidle, B., Jozefiak, T., Ivarsson, T., & Thomsen, P. H. (2014). Quality of life in children with OCD with and without comorbidity. *Health and Quality of Life Outcomes*, *12*(1), 1–12. http://dx.doi.org/10.1186/s12955-014-0152-x
Whiteside, S. P., & Jacobsen, A. B. (2010). An uncontrolled examination of a 5-day intensive treatment for pediatric OCD. *Behavior Therapy*, *41*(3), 414–422. http://dx.doi.org/10.1016/j.beth.2009.11.003
Whiteside, S. P., Brown, A. M., & Abramowitz, J. S. (2008). Five-day intensive treatment for adolescent OCD: A case series. *Journal of Anxiety Disorders*, *22*(3), 495–504. http://dx.doi.org/10.1016/j.janxdis.2007.05.001
Whiteside, S. P., McKay, D., De Nadai, A. S., Tiede, M. S., Ale, C. M., & Storch, E. A. (2014). A baseline controlled examination of a 5-day intensive treatment for pediatric obsessive-compulsive disorder. *Psychiatry Research*, *220*(1), 441–446. http://dx.doi.org/10.1016/j.psychres.2014.07.006
Young, B. J., Ollendick, T. H., & Whiteside, S. P. (2014). Changing maladaptive behaviors, part 1: exposure and response prevention. In: E. S. Sburlati, H. J. Lyneham, C. A. Schniering, & R. M. Rapee (Eds.), *Evidence-based CBT for anxiety and depression in children and adolescents: a competencies based approach* (pp. 194–207). West Sussex: John Wiley and Sons, Ltd.
Yucelen, A. G., Rodopman-Arman, A., Topcuoglu, V., Yazgan, M. Y., & Fisek, G. (2006). Interrater reliability and clinical efficacy of Children's Yale-Brown Obsessive-Compulsive Scale in an outpatient setting. *Comprehensive Psychiatry*, *47*(1), 48–53. http://dx.doi.org/10.1016/j.comppsych.2005.04.005
Zohar, A. H. (1999). The epidemiology of obsessive-compulsive disorder in children and adolescents. *Child and Adolescent Psychiatric Clinics of North America*, *8*(3), 445–460.