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Internet-delivered cognitive behavioural therapy for young children with obsessive–compulsive disorder: development and initial evaluation of the BIP OCD Junior programme

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Background

Internet-delivered cognitive behavioural therapy (ICBT) is a promising approach for increasing access to evidence-based treatments.

Aims

To develop and evaluate the feasibility and preliminary efficacy of an ICBT programme for young children with obsessive–compulsive disorder (OCD), named BIP OCD Junior.

Method

Eleven children aged 7–11 years were enrolled in a 12-week open trial of parent- and therapist-guided ICBT for OCD. The primary outcome measure was the Children's Yale–Brown Obsessive–Compulsive Scale (CY-BOCS).

Results

There was a significant improvement in OCD symptoms post-treatment, with a large within-group effect size on the CY-BOCS (Cohen's $d = 1.86$, 95% CI 0.83 to 2.86). Results were maintained at 3-month follow-up. Both children and parents rated the treatment as credible and were highly satisfied with the intervention.

Conclusions

BIP OCD Junior is a feasible and credible treatment option for young children with OCD. Randomised controlled trials are needed to further establish its efficacy and cost-effectiveness relative to gold standard face-to-face CBT.

Declaration of interest

None.

Keywords

Cognitive behavioural therapy; obsessive-compulsive disorder; internet-delivered therapy; child; early onset.

Background

Obsessive-compulsive disorder (OCD) is a relatively common psychiatric disorder characterised by obsessions and compulsions.[1] OCD often causes distress and impairment in academic, social and family functioning,[2] and increases the risk of suicide.[3] About 70% of OCD patients had a childhood onset,[4] and the disorder often persists if left untreated.[5]

International guidelines recommend cognitive behavioural therapy (CBT) as the first-line intervention for paediatric OCD.[6] CBT for paediatric OCD has been evaluated in more than 25 trials, consistently showing overall large effect sizes (within-group $g = 2.43$) and high response rates.[7] For young children with OCD (ages ranging from three to eight years), three randomised trials have indicated that family-based CBT is superior to relaxation training[8,9] and treatment as usual,[10] with moderate to large within-group effect sizes ($g = 0.53$–1.80). One recent trial showed that family interventions also have a positive effect for older children and adolescents.[11] One important feature in these adapted protocols is the strong focus on parent behaviours, such as increasing positive reinforcement contingencies and reducing family accommodation and criticism.

Unfortunately, the availability of CBT is limited and the majority of patients do not have access to this evidence-based treatment.[12] Barriers to accessing CBT include geographical and psychosocial factors,[13] as well as stigma.[14] One study found that the delay between symptom onset and receiving treatment was as long as 3.7 years for children and adolescents.[15] This is especially problematic in light of the suspected positive relationship between symptom duration and treatment response, i.e. the longer the paediatric patient has OCD symptoms, the less chance of them responding to CBT.[16] Even when patients are offered some form of CBT in non-specialist settings, the vast majority receive suboptimal CBT, for example, with insufficient emphasis on exposure and response prevention techniques.[17]

Internet-delivered CBT

One way to increase the availability of CBT for paediatric OCD is to use technology-based approaches, such as video-conferencing,[18,19] telephone CBT,[20] and Internet-delivered CBT (ICBT).[21–23] Video-conferencing and telephone CBT provide an opportunity for non-office-based real-time sessions with a therapist, where the content and duration of the sessions are approximately the same as in traditional face-to-face CBT. ICBT has the same content as regular face-to-face CBT, but the material provided resembles an online self-help book. The treatment is usually supported by an online therapist, who asynchronously responds to messages and reviews homework assignments via an integrated email system within the ICBT online platform.[24] In ICBT, the amount of therapist support is only a fraction of that in traditional face-to-face CBT, resulting in considerable cost savings.[25,26] Therapist-supported ICBT has shown promising results in children and adolescents with a range of psychiatric problems,[27] but there have been few studies compared with the adult field.[25]

Our research group has previously developed and evaluated an ICBT programme for adolescents (aged 12–17) called BIP

(*Barninternetprojektet* in Swedish) OCD. BIP OCD includes 12 chapters for adolescents and five chapters for their parents, who support their children throughout the treatment. Results from one open pilot trial ($N = 21$) and a subsequent waitlist-controlled randomised trial (RCT; $N = 67$) showed that BIP OCD was efficacious in reducing OCD symptoms.[21,22] In the RCT, the therapist support time was on average 17.5 min per patient per week, suggesting that it could be a cost-effective intervention for adolescents with OCD.[26]

Aims

One important research gap in the literature is whether this form of ICBT may also be suitable for younger children with OCD. The aim of this study, therefore, was to adapt BIP OCD to suit the developmental needs of younger children aged 7–11 with OCD, and to evaluate its feasibility, acceptability and preliminary efficacy in an open trial.

Method

Trial design

The present study used an open trial design. It was approved by the Regional Ethical Review Board in Stockholm, Sweden (Dnr 2015/470-31) and registered at ClinicalTrials.gov (NCT02663167).

Participants

Participants were eligible for inclusion if they had a primary DSM-5 diagnosis of OCD,[1] had a total score ≥16 on the Children's Yale–Brown Obsessive–Compulsive Scale (CY-BOCS),[28] were between 7 and 11 years old, had the ability to understand Swedish, had daily access to the internet and had a parent that could co-participate in the treatment. Participants on psychotropic medication were allowed in the study as long as they had been on a stable dose during the 6 weeks prior to baseline assessment. Exclusion criteria were: (a) a diagnosis of a comorbid autism spectrum disorder, psychosis, bipolar disorder, severe eating disorder, organic brain disorder, or intellectual disability; (b) acute suicidal ideation; (c) CBT for OCD (including exposure with response prevention) within the past 12 months; or (d) ongoing psychological treatment for OCD or another anxiety disorder.

The study took place at a clinical research unit within the Child and Adolescent Mental Health Services (CAMHS) in Stockholm, Sweden.

Measures

Diagnosis of OCD was made according to DSM-5 criteria[1] using the Mini-International Neuropsychiatric Interview for children (MINI-KID).[29] As part of the pre-assessment, the parents also answered questions about autistic symptoms in their children using the Autism Spectrum Quotient (AQ-10).[30]

Clinician-rated measures were assessed pre-treatment, post-treatment and at 3-month follow-up by a clinical psychologist at the clinic. The participants also completed online child- and parent-rated questionnaires at these times.

The primary outcome was the CY-BOCS,[28] which is a semi-structured clinician-rated measurement that is used to assess symptom severity in paediatric OCD. The CY-BOCS has shown good to excellent interrater reliability and a high internal consistency.[28] The internal consistency in the current sample was good ($\alpha = 0.74$). The clinicians in the study were trained in CY-BOCS. All the interviews were audiotaped and a third of them ($N = 11$) were re-rated by another clinician to assess the reliability. The intraclass coefficient was 0.99, $P < 0.001$, which is excellent according to statistical guidelines.[31]

Secondary clinician-rated outcome measures of global functioning included the Children's Global Assessment Scale (CGAS),[32] the Clinical Global Impression – Severity (CGI-S) and the Clinical Global Impression – Improvement (CGI-I).[33] OCD symptom severity was assessed weekly via the child-rated Obsessive–Compulsive Inventory – Child Version (OCI-CV)[34] and the parent-rated Children's Obsessional Compulsive Inventory Revised – Parent Version (ChOCI-R-P).[35] Family accommodation was measured via the Family Accommodation Scale – Self Rated (FAS-SR)[36] answered by the parents, and impairment of functioning due to OCD was assessed using the Education, Work, and Social Adjustment Scale – Child and Parent Version (EWSAS-C/P), an adaptation of the Work and Social Adjustment Scale.[37] Depressive symptoms were measured with both the child-rated Child Depression Inventory – Short Version (CDI-S)[38] and the parent-rated version of the Mood and Feeling Questionnaire (MFQ).[39] Internal consistency for secondary outcome measures in the present sample were as follows: OCI-CV, $\alpha = 0.82$; ChOCI-R-P, $\alpha = 0.87$; FAS-SR, $\alpha = 0.67$; EWSAS-C, $\alpha = 0.61$; EWSAS-P, $\alpha = 0.74$; CDI-S, $\alpha = 0.77$; and MFQ, $\alpha = 0.90$. All child- and parent-rated measures were administered online.

Qualitative questions about treatment credibility were administered at week 3, and qualitative questions about treatment satisfaction were administered post-treatment to both children and parents. Assessments of adverse events were made using the Safety Monitoring Uniform Report Form (SMURF)[40] mid-treatment (by telephone) and post-treatment (at the clinician visit).

Procedure

Information about the study was advertised on the clinic webpage (www.bup.se/bip) and in a newspaper in Stockholm, Sweden. Participants could either self-refer to the study using an online application or be referred by a CAMHS clinician.

An initial telephone interview was conducted with a parent to discuss eligibility. If considered suitable, the child and their parent(s) were given an appointment with a clinical psychologist at the clinic. The aim of the clinician visit was to (a) verify the OCD diagnosis; (b) assess OCD symptom severity; (c) assess comorbid psychiatric disorders; (d) provide information about the study; and (e) decide on inclusion or exclusion. Written informed consent was signed prior to inclusion. The treatment started within 1 week after inclusion.

After 12 weeks of treatment, post-treatment measures were administered, including clinician-rated measures at the clinic and self- and parent-rated online measures. The same procedure was repeated at 3-month follow-up. For practical reasons (inability to come to the clinic), one of the 11 follow-up assessments was done by telephone (which has been shown in previous studies to be a reliable assessment method[41]).

Intervention

BIP OCD Junior is delivered through a secure internet platform specifically developed for delivering ICBT treatments to children and adolescents with psychiatric and behavioural difficulties (www.barninternetprojektet.se). The platform was designed to have an age-appropriate appearance and consists of texts, films, illustrations and exercises that make the programme interactive.

In BIP OCD Junior, the child and the parent have 12 different chapters each, which are offered consecutively and delivered through separate login accounts. Following recommendations from established guidelines,[6] the intervention consists of psychoeducation, exposure with response prevention and relapse prevention chapters. The main difference compared with the original adolescent version of BIP OCD[21,22] is the greater emphasis on parental support, by increasing the number of parent-dedicated chapters and involving parents more throughout the treatment. The

parents are encouraged to work ahead with the treatment in order to be prepared and to help the child with their corresponding chapter afterwards. The content of the chapters is specifically designed for the parents and the children. The parents receive detailed psychoeducation and information on strategies to help coach their child during exposure tasks, whereas the children receive a more general and 'hands on' explanation of OCD and how to treat it, with less text, more illustrations and age-appropriate language. An overview of the chapters and example screenshots from the intervention are presented in the Supplementary material, available at https://doi.org/10.1192/bjo.2018.10.

Throughout the treatment, the family has asynchronous contact with a licensed clinical psychologist with experience in treating OCD. The psychologist responds to email messages in the encrypted platform within 24 h (weekdays), contacts the participant if there has not been any activity in the internet platform for 3 or 4 days, and calls the family if needed (e.g. for further clarification of the treatment content or in case of adverse events).

Sample size

We used the lower margin of the confidence interval of the effect size in previous BIP OCD trials for adolescents as a conservative proxy of anticipated effects in this study. The power calculation to determine the sample size was originally based on the results from the pilot study.[22] Given 95% power and two-sided 5% alpha, the power calculation (based on paired *t*-tests and an effect size of $d = 1.5$) showed that eight participants would be required to find the estimated effect. This number was later increased to $N = 16$, owing to the lower effect size ($d = 1.00$) in the RCT,[21] allowing for drop-out and covering possible data attrition.

Statistical methods

Mixed-effects models with a fixed effect of time and random effects of individuals were used to test changes in continuous outcome measures. Alpha (two-tailed) was set at $P < 0.05$ for all analyses. Within-group effect sizes were estimated with Cohen's *d*.[42] We used the recent expert consensus criteria to define treatment response (≥35% decrease on the CY-BOCS plus a CGI-I rating of 1 or 2) and remission (a score of ≤12 on the CY-BOCS plus a CGI-S rating of 1 or 2).[43]

All statistical analyses were carried out using STATA version 14.1 (StataCorp LP).

Results

Sample characteristics and study flow

Participants were 11 children recruited from all over Sweden between February 2016 and April 2016. Since no participants dropped out, the recruitment stopped before reaching $N = 16$, based on the original power analysis. Table 1 shows the demographic and clinical characteristics of the sample.

Figure 1 shows the study flow. There was no data loss post-treatment or at 3-month follow-up on any of the outcome measures. One participant adjusted medication for attention-deficit hyperactivity disorder (ADHD) during the course of the trial.

Primary outcomes

Treatment outcomes and effect sizes for all outcome measures are presented in Table 2. There was a significant decrease in clinician-rated OCD symptom severity from pre- to post-treatment ($B = -10.91$, $Z = -5.92$, $P < 0.001$, 95% CI −14.52 to −7.30), corresponding to a within-group effect size of $d = 1.86$, 95% CI 0.83 to 2.86.

Table 1 Demographic and clinical characteristics of the sample ($N = 11$)

Characteristic	
Age, M (s.d.), min–max	9.5 (1.0), 8–11
Age at OCD onset, M (s.d.), min–max	6.2 (2.6), 3–10
Distance to clinic (km), M (s.d.), min–max	176.8 (237.7), 4–610
AQ-10, M (s.d.), min–max	3.2 (1.9), 1–6
Gender, *N* (%)	
Female (63.6)	7
Male (36.4)	4
Main contact person, *N* (%)	
Mother (81.8)	9
Father (18.2)	2
Child living with, *N* (%)	
Both parents (72.7)	8
Alternating (18.2)	2
Mother (9.1)	1
Country of birth of child, *N* (%)	
Sweden (100)	11
Education of mother, *N* (%)	
Secondary school (18.2)	2
College/university (72.7)	8
Doctoral degree (9.1)	1
Education of father, *N* (%)	
Secondary school (27.3)	3
College/university (72.7)	8
Current psychotropic medication, *N* (%)	
None (100)	11
Previous psychological treatment, *N* (%)	
None (63.6)	7
CBT (36.4)	4
Unspecified (18.2)	2
Comorbidity, *N* (%)	
None (36.4)	4
One diagnosis (45.4)	5
Three diagnoses (18.2)	2
Specific phobia (36.4)	4
Separation anxiety (18.2)	2
Generalised anxiety disorder (9.1)	1
Current depressive episode (9.1)	1
Tics (18.2)	2
ADHD (9.1)	1

OCD, obsessive–compulsive disorder; AQ-10, Autism Spectrum Quotient; CBT, cognitive–behavioural therapy; ADHD, attention-deficit hyperactivity disorder.

Symptom improvement was maintained during follow-up, with a non-significant trend towards further improvement between post-treatment and 3-month follow-up ($B = -2.09$, $Z = -1.14$, $P = 0.256$, 95% CI −5.70 to 1.52; see Fig. 2).

Secondary outcomes

There were significant effects on the weekly measures of child-rated ($B = -0.75$, $Z = -11.05$, $P < 0.001$, 95% CI −0.88 to −0.61) and parent-rated ($B = -1.24$, $Z = -12.88$, $P < 0.001$, 95% CI −1.43 to −1.05) OCD symptom severity (Fig. 2). There were significant improvements on the other secondary outcome measures, except for child-rated depressive symptoms. The largest effect was observed on family accommodation ($d = 2.67$). All results were maintained at 3-month follow-up.

Treatment response and remission

At post-treatment, eight participants (72.7%, 95% CI 35.4 to 92.8) were classed as responders and five participants (45.5%, 95% CI 16.8 to 77.4) were classed as being in remission. The proportion of responders was the same at 3-month follow-up, whereas the number of participants being in remission had increased to seven (63.6%, 95% CI 28.8 to 88.3) during the follow-up period.

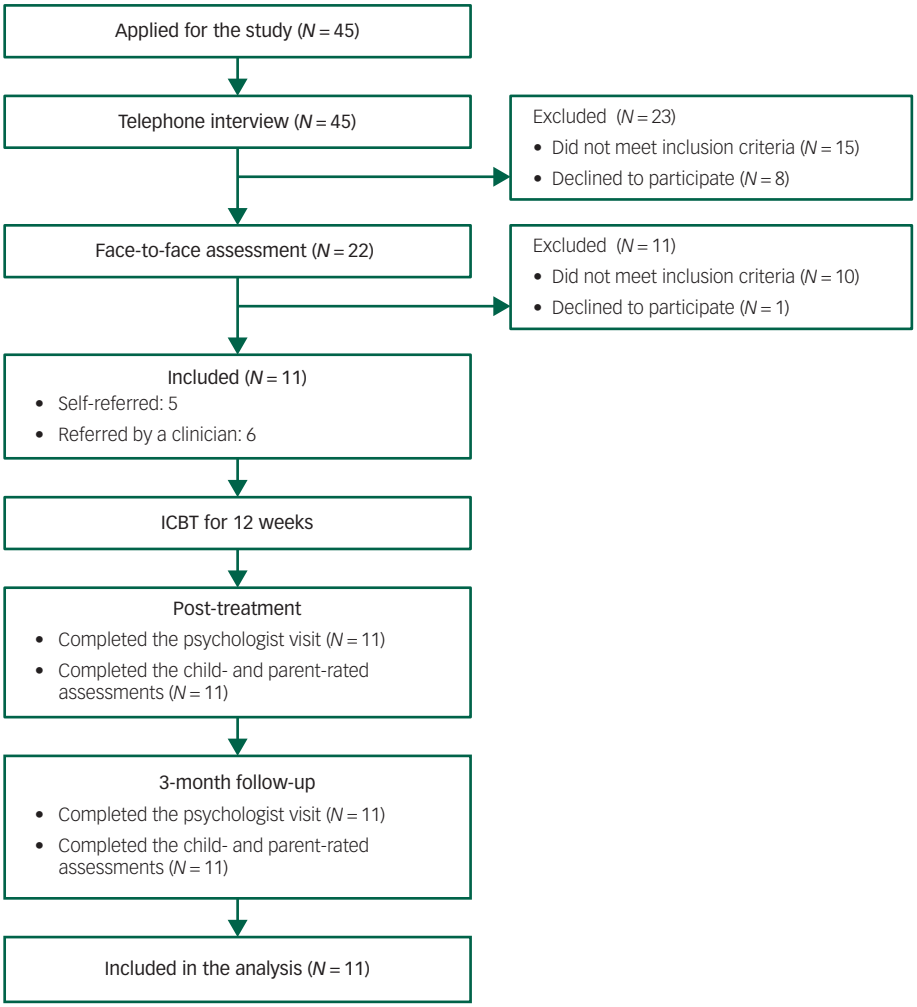

Fig. 1 Study flow.

Table 2 Primary and secondary outcome measures

Measure	Unadjusted mean (s.d.)						Effect size (Cohen's *d* 95% CI)					
	Pre-treatment		Post-treatment		3-month follow-up		Pre–post		Post to 3-month follow-up		Pre to 3-month follow-up	
Clinician-rated measures												
CY-BOCS	21.18	(3.46)	10.27**	(7.52)	8.18	(6.48)	1.86	0.83 to 2.86	0.30	−0.55 to 1.13	2.50	1.35 to 3.62
CGAS	53.18	(7.69)	62.45*	(11.92)	66.91	(14.13)	−0.92	−1.80 to −0.03	−0.34	−1.18 to 0.51	−1.21	−2.11 to 0.28
CGI-S	4.09	(0.70)	2.55**	(1.29)	2.18	(1.17)	1.49	0.52 to 2.42	0.30	−0.55 to 1.13	1.98	0.93 to 3.00
CGI-I			2.18	(1.17)	1.82	(0.87)			0.35	−0.49 to 1.19		
Child-rated measures												
OCI-CV	17.27	(6.10)	7.00**	(6.32)	6.82	(5.56)	1.65	0.66 to 2.62	0.03	−0.81 to 0.87	1.79	0.77 to 2.78
CDI-S	3.00	(2.76)	2.09	(2.30)	2.64	(4.15)	0.36	−0.49 to 1.20	−0.16	−1.00 to 0.68	0.10	−0.73 to 0.94
EWSAS-C	11.64	(6.48)	6.27*	(7.77)	5.36	(6.71)	0.75	−0.13 to 1.61	0.13	−0.71 to 0.96	0.95	0.05 to 1.83
Parent-rated measures												
ChOCI-R-P	27.09	(3.62)	10.64**	(10.18)	11.18	(9.20)	2.15	1.07 to 3.20	−0.06	−0.89 to 0.78	2.28	1.17 to 3.35
FAS-SR	18.64	(6.64)	4.36**	(3.61)	4.18	(4.75)	2.67	1.48 to 3.83	0.04	−0.79 to 0.88	2.50	1.35 to 3.62
MFQ	8.36	(6.44)	5.00*	(4.02)	5.55	(6.80)	0.63	−0.24 to 1.48	−0.10	−0.93 to 0.74	0.43	−0.43 to 1.27
EWSAS-P	14.73	(7.86)	5.82**	(7.03)	5.64	(6.12)	1.19	0.27 to 2.10	0.03	−0.81 to 0.86	1.29	0.35 to 2.20

CY-BOCS, Children's Yale-Brown Obsessive Compulsive Scale; CGAS, Children's Global Assessment Scale; CGI-S, Clinical Global Impression – Severity; CGI-I, Clinical Global Impression – Improvement; OCI-CV, Obsessive–Compulsive Inventory – Child Version; CDI-S, Child Depression Inventory – Short Version; EWSAS-C, Education, Work, and Social Adjustment Scale – Child Version; ChOCI-R-P, Children's Obsessional Compulsive Inventory Revised – Parent Version; FAS-SR, Family Accommodation Scale – Self Rated; MFQ, Mood and Feeling Questionnaire; EWSAS-P, Education, Work, and Social Adjustment Scale – Parent Version.
* $P < 0.01$.
** $P < 0.001$.

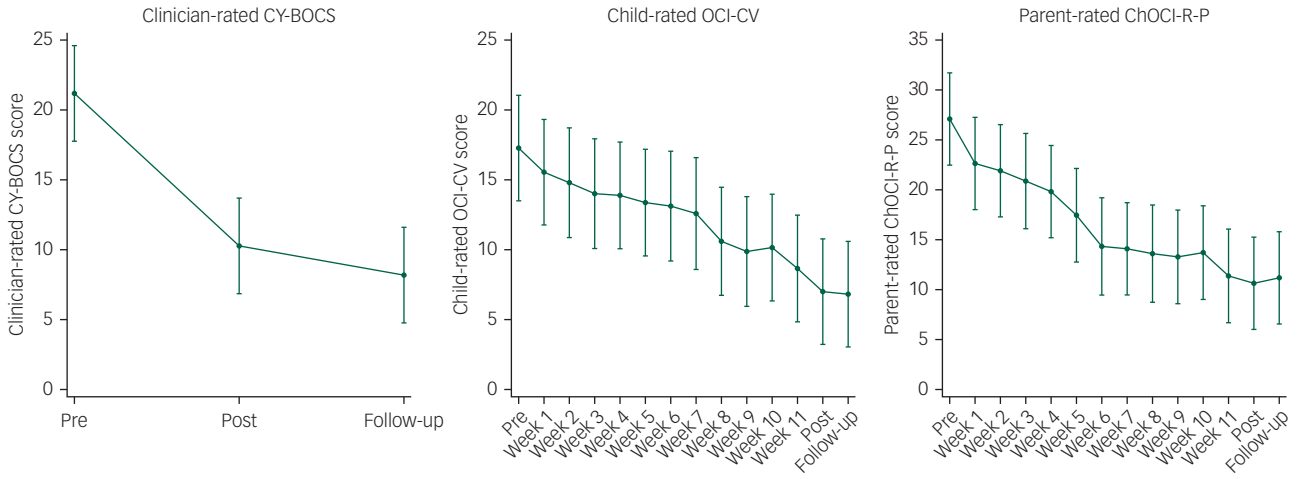

Fig. 2 Clinician-, child- and parent-rated measures of OCD symptom severity. Follow-up was at 3 months.

Treatment completion and clinician support

Both the parents and the children completed on average 11 chapters out of 12 (s.d. = 1.8–2.0). The average clinician time per participant was 264.3 min (s.d. = 63.4) in total, which is on average 22.0 min per week per participant. This included online correspondence with the children and parents as well as telephone calls. A *post hoc* analysis showed that the therapists spent more time communicating with the parents ($M = 172.3$, s.d. = 39.1) than with the children ($M = 92$, s.d. = 35.0), $t(10) = 6.91$, $P < 0.001$.

Treatment credibility and satisfaction

Overall, the children and parents rated the treatment as being highly credible. To the question 'How much do you expect you/your child will improve with this treatment?' (from 1 = not at all improved to 5 = very much improved), the children answered on average 4.4 (s. d. = 0.5) and the parents 4.4 (s.d. = 0.7). At post-treatment, children rated the item 'In general, what did you think of the Internet treatment?' (from 1 = 'very bad' to 5 = 'very good') on average 4.4 (s.d. = 0.7) and the parents 4.8 (s.d. = 0.4). To the question 'Would you recommend this treatment to a friend who also has OCD/a friend who has a child that also has OCD?' (from 1 = 'no, not at all' to 5 = 'yes, absolutely'), both the children and the parents rated on average 4.8 (s.d. = 0.4).

Adverse events

No serious adverse events were reported at mid- or post-treatment. Three parents reported mild adverse events. One reported increased family conflicts during the first weeks of exposure, and another reported increased OCD-related symptoms owing to increased awareness from the parent. The third reported increased sensitivity to smells, headache, irritability and sleep problems, as well as reduced appetite, which occurred at the same time as changes in ADHD medication during the treatment.

Discussion

The aim of this study was to adapt an existing ICBT programme for adolescents with OCD to suit the developmental needs of younger patients aged 7–11, and to evaluate its feasibility, acceptability and preliminary efficacy in a pilot study.

Both children and parents felt that the intervention was credible and reported high levels of satisfaction post-treatment. Together with the low attrition, these results indicated that BIP OCD Junior is an acceptable and feasible intervention for the targeted age group. In addition, the results showed large reductions in clinician-rated OCD symptoms post-treatment. Similar improvements were observed on child- and parent-rated measurements of OCD symptoms, general functioning and family accommodation. On measurements of depressive symptoms, there was a significant improvement on the parent-rated but not the child-rated questionnaire, probably owing to the low baseline scores. The results were maintained at 3-month follow-up. The effect sizes are comparable to those of the BIP OCD RCT[21] and to what would be expected in both face-to-face treatment for paediatric OCD[7] and treatments specifically tailored to very young children.[8–10]

The results from this open trial are promising, as ICBT has considerable potential to increase the availability of evidence-based treatment for the young OCD population, especially for those who do not have access to treatment owing to geographical distance and those who experience shame and resistance to seeking treatment because of other psychosocial factors.[13,14] Thus, this internet-delivered intervention has promise as a low-threshold alternative and provides an opportunity for children to receive early intervention before the OCD symptoms become more persistent and difficult to treat.[16] From the larger societal perspective, this could potentially reduce the long-term need for child- and adolescent psychiatric services, thereby freeing resources for the more difficult cases.

One important observation in this study is that the remission rates increased between post-treatment (45.5%) and the 3-month follow-up (63.6%), a phenomenon which is not usually seen in face-to-face trials.[7] This delayed treatment response has been consistently shown in previous ICBT trials for adolescent OCD[21,22] and childhood anxiety disorders,[44] and could be an indication that the primary endpoint for ICBT in paediatric populations should to be delayed to 3 months after the end of the treatment in order to provide a more reliable estimate of the treatment effect.

The therapist time in the trial was about one-third of what is expected in face-to-face treatment, and similar to other ICBT trials for adolescent OCD.[21,22] An interesting aspect of ICBT is that, although it is often called a 'low-intensity' intervention, the treatment is often quite intensive in the sense that patients get a

response from the therapist within 24 h. Thus, owing to its internet format, the programme has a unique potential to provide families with fast feedback, coaching and problem-solving on a daily basis, despite the low overall use of therapist resources.

Post hoc findings showed that the therapists spent significantly more time communicating with the parents than with the children. Our clinical impression was that parental involvement is an important factor for successful treatment with BIP OCD Junior. Even though the literature on childhood anxiety suggests that there is no clear additional effect of parental involvement in CBT,[45] there are at least four treatment studies showing positive results on interventions that specifically target parental behaviours in paediatric OCD.[8–11] In addition, there are treatment protocols that only involve parents, with the main aim to reduce family accommodation.[46] Thus, this study replicates and extends the previous literature on family interventions in the treatment of young children with OCD. Our clinical impression is that parents play an important part in ICBT for paediatric OCD and that their role should receive special attention. The use of parental strategies such as positive reinforcement, reducing criticism and focusing on family processes such as accommodating behaviours, as well as problem-solving techniques, might have contributed to the efficacy of and adherence to the treatment. To our knowledge, no study has specifically investigated the role of parental involvement in ICBT, indicating that more research on this particular topic is warranted. One idea for future research would be to use a time-lagged design and closely assess the change in parental behaviours during ICBT for paediatric OCD, and correlate this with outcome. Another important step would be to conduct a dismantling study and randomise patients to BIP OCD with or without parental strategies components, as has been done previously in traditional CBT for OCD.[11]

The main limitations in this study were the absence of a control condition and the use of unblinded assessors. However, self- and parent-reported measures showed similar results to the clinician ratings. Moreover, given the persistent nature of OCD, it is unlikely that the large effect sizes obtained in this study could be entirely explained by spontaneous fluctuations.[16] Two of the secondary outcome measures, FAS-SR[36] and EWSAS-C/P,[37] have only been validated in adult populations and should therefore be interpreted cautiously, although their internal consistency in the current sample was acceptable to good. Another limitation is the limited sample size and the characteristics of participants, which affect the generalisability of the findings. More specifically, the sample in this study had a slightly lower baseline CY-BOCS score than has been found in face-to-face trials for very young children.[8,10] Future research should therefore investigate for which patients ICBT works optimally, and focus on investigating whether ICBT is a viable option only for individuals with moderate symptom severity or whether it also could be an effective intervention for OCD patients at the more complex end of the symptom severity spectrum. One interesting aspect would be to implement ICBT in a stepped care model.[47] However, research on stepped care, in both OCD and other mental health conditions, has been lagging significantly behind. Thus, this remains to be investigated in large-scale randomised trials.

In summary, this is to our knowledge the first study investigating the feasibility, acceptability and preliminary efficacy of a developmentally tailored parent- and therapist-guided ICBT intervention for young children with OCD. The results replicate and extend previous findings on ICBT for adolescents with OCD, and suggest that this may also be a feasible and effective treatment for young children. The therapist time to treat each participant was about a third of what would be expected in a face-to-face treatment, indicating that this could be a potentially cost-effective treatment. A next step would be to establish the relative efficacy and cost-effectiveness of this treatment compared with face-to-face CBT.

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Supplementary material

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