

Preliminary feasibility, acceptability, and effectiveness of a pilot telehealth-based intensive outpatient program incorporating acceptance and commitment therapy for adolescents with obsessive compulsive disorder

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ABSTRACT

Pediatric obsessive compulsive disorder (OCD) is a significantly impairing disorder. Given the impact of pediatric OCD, it is important to consider how to best adapt treatments for OCD, particularly for more severe youth that may not respond to traditional outpatient formats. Understanding how to implement such treatments via telehealth can improve access to care and reduce treatment burden on families. The current study therefore evaluates preliminary feasibility, acceptability, and effectiveness of delivering a pilot intensive, group-based telehealth treatment combining acceptance-based skills with exposure and response prevention (ERP) for pediatric OCD. Participants ($N = 25$) received two to 3 h of individual, family, and/or group treatment per day, four days per week, for a total of 10 h of treatment per week. Following the intensive outpatient program (IOP), adolescents reported large decreases in OCD symptoms, and small to large decreases in anxiety and depression. Parents reported similar outcomes, with small to large improvements in the impact of OCD on their child, anxiety, and familial accommodation. This pilot study thereby presents promising results and adds to the growing evidence base of acceptance-based interventions for adolescents with OCD, anxiety, and other mental health concerns.

Obsessive compulsive disorder (OCD) occurs in approximately 1–4% of youth (e.g., Przeworski & Birnkrant, 2017; Zohar, 1999). Pediatric OCD is a debilitating disorder, often disrupting functioning and/or quality of life (Coluccia et al., 2017; Piacentini et al., 2003). Youth with OCD also report increased comorbid mental health concerns (Farrell et al., 2012; Peris et al., 2017). If left untreated, pediatric OCD can develop into a chronic condition and become more severe and difficult to treat in adulthood (Stengler et al., 2013). Thus, improving the understanding of how to best implement treatments for pediatric OCD is a pressing concern.

Exposure and response prevention (ERP) is currently considered the gold-standard treatment for OCD (Geller & March 2012). However, up to 61% of pediatric OCD cases do not respond optimally (Barrett et al., 2004; Freeman et al., 2008) and remission rates range from 49 to 53% (Öst et al., 2016). Given the significant impairment resulting from pediatric OCD, it remains important to consider how to modify traditional approaches to ERP for youth to improve treatment response. For

example, an intensive approach to treatment may be indicated for those youth who do not respond to traditional weekly outpatient therapy, or for those whose symptoms are severe enough to cause significant functional impairment. However, most research on pediatric OCD and ERP has occurred in outpatient settings (see Franklin et al., 2015).

Research on intensive treatment formats for pediatric OCD has been growing over the last two decades, yet remains incomplete (e.g., Guo et al., 2020; Lewin et al., 2005). Previously studied in-person intensive programs have ranged from eight to 15 h of OCD treatment per week for one to four weeks total (e.g., Guo et al., 2020; Petersen, Zurita Ona, Blythe, Möller, & Twohig et al., 2022b; Storch et al., 2009; Whiteside et al., 2014). Intensive programs for OCD can serve as a bridge between different levels of care, specifically as a step-up from weekly outpatient therapy, or as a step-down from partial hospitalization or residential programs. Furthermore, previous researchers have found that intensive programs for OCD offer additional enhancements that traditional outpatient therapy cannot (e.g., longer exposures, increased familial

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engagement; Lewin et al., 2005; Guo et al., 2020). Given the increasing number of intensive outpatient programs (IOPs) geared towards OCD, it is important to better understand how to improve the delivery of evidence-based, IOP treatment for pediatric OCD.

In particular, there has been almost no research examining the feasibility, acceptability, and effectiveness of delivering intensive ERP for pediatric OCD in a telehealth-format. There is currently one study that supports the use of intensive CBT via a telehealth format for youth with anxiety and/or OCD ($N = 130$; Gittins Stone et al., 2023). Overall, evidence is growing that outpatient ERP for pediatric OCD can be effectively delivered in a telehealth format (e.g., Comer et al., 2017; Wootton, 2016). However, it remains largely under-researched whether an intensive group-based program, rather than individual sessions, can be effectively delivered online. Internet-delivered care can help address several obstacles to receiving adequate care for OCD, including lack of trained providers in geographic locations and difficulty accessing appointments, particularly for those patients who require more frequent sessions based on symptom severity (Comer et al., 2017). In addition, as telehealth-delivered care becomes more widely implemented because of the COVID-19 pandemic (Madigan et al., 2021), it is even more critical to continue to evaluate the effectiveness of this delivery model.

Additionally, there has been growing research on enhancing ERP with complementary therapies such as acceptance and commitment therapy (ACT; e.g., Twohig et al., 2018). ACT aims to enhance psychological flexibility, or the ability to remain present and engaged with one's values in the face of different internal experiences (Ong & Eustis, 2021). Targeting psychological flexibility during adolescence may be especially beneficial, and ACT has been successfully used to treat OCD, anxiety disorders, and more in youth (see Petersen, Zurita Ona, & Twohig, 2022c). One case study of an IOP combining ACT and ERP for three adolescents with OCD found promising outcomes in OCD symptoms, psychological inflexibility, and distress (Petersen et al., 2022b). More broadly, there is nascent research on the benefits of incorporating ACT into IOPs for other adolescent mental health concerns (e.g., depression; Kemani et al., 2018). Thus, in the present pilot study, ACT was incorporated to add a developmentally appropriate adjunctive treatment to intensive ERP.

One specific model of ACT for youth, DNA-V, adapts the psychological flexibility framework of ACT using developmental theory and positive psychology to capture the specific needs of children and adolescents (Hayes & Ciarrochi, 2015). DNA-V uses three characters (Discoverer, Noticer, and Advisor) and values to teach ACT skills in a youth-friendly manner. Although DNA-V is a fairly new model, preliminary evidence supports the use of ACT and the DNA-V model to treat children and help parents across a range of mental health conditions and settings. For example, Petersen, Davis, Renshaw, Levin, & Twohig (2022a) used DNA-V in a school-based, group format to treatment adolescents with anxiety; participants who received DNA-V reported reduced anxiety and improved school attendance compared to a waitlist. As another example, the DNA-V model has been used as a community-based intervention in the United Kingdom for youth in the foster care system, resulting in improved educational achievement, employment, and interpersonal relationships (Burch et al., 2018; Gillard et al., 2020). However, no research exists on the use of DNA-V in conjunction with ERP for higher levels of care. DNA-V may provide the ideal method of implementing ACT in an intensive format, as it is already condensed and developed for youth specifically, making ACT concepts simpler and more easily understood for an intensive treatment format. Given that ACT is being increasingly incorporated into more intensive treatment programs and adapted for youth, it is important to evaluate the DNA-V model in an IOP setting for pediatric OCD, as it may provide a helpful addition to intensive pediatric OCD treatment while informing how to best incorporate ACT-based treatments into intensive programs for youth.

In addition to ERP and DNA-V components, the present protocol also included family therapy and dialectical behavior therapy (DBT)

components. Incorporating family members in the treatment of pediatric OCD is long established as an important factor impacting outcomes (Thompson-Hollands et al., 2014). Further, the involvement of family members in IOPs may be especially relevant given the concentrated dose of treatment (Guo et al., 2020). Lastly, DBT was incorporated because many adolescents with OCD presenting to intensive programs report co-occurring suicidal behavior and/or ideation, non-suicidal self-injury, and emotion dysregulation (e.g., Shoval et al., 2006). DBT has specialized effectiveness for these presenting problems in adolescents (Kothgassner et al., 2021), as well as consistency with ACT as another "third wave," acceptance-based treatment (Ruork et al., 2022). To make the program all-encompassing and provide intensive intervention, the components of DNA-V and ERP were integrated with DBT and family therapy.

In sum, the current pilot study evaluates preliminary feasibility, acceptability, and effectiveness of delivering an intensive, group-based telehealth treatment combining DNA-V and acceptance-based skills with ERP for pediatric OCD. We hypothesized that treatment outcomes would be in line with other IOP programs for OCD, and that patients and families would find the telehealth format acceptable. Overall, this pilot study aims to expand knowledge on how to best adapt and implement intensive treatment formats for youth struggling with OCD.

1. Methods

1.1. Participants

Participants ($N = 25$) were treatment-seeking adolescents with a primary diagnosis of OCD who participated in an intensive treatment program. Upon admission to the program, families were provided the optional research consent form to allow their clinical data collected as part of routine care to be analyzed for research purposes. Research participation was not required to participate in the program and did not impact treatment received or assessments administered as part of the treatment program. All services provided were billed to insurance.

To be included in the study, participants were between ages 12–18 years, currently in high school, with a current DSM-V diagnosis of OCD, as determined by a clinical interview and clinician-administered CYBOCS-II. Participants could have comorbid diagnoses, but OCD was required as the primary diagnosis. Participants were also required to have access to internet and a device at home to attend online treatment sessions. Adolescents were excluded from participation if they exhibited or endorsed any of the following: a diagnosis that would prevent them from participating in a group setting (e.g., schizophrenia, severe conduct disorder, substance abuse at an interfering level, significant developmental delays), imminent and serious suicidality requiring hospitalization that prevented program participation, a primary diagnosis other than OCD, or unwillingness to engage in treatment.

1.2. Study design

Interested participants who contacted the clinic completed an initial 20–30-min phone screen to assess OCD symptoms, functional impairment, patient motivation, and other pertinent information (e.g., comorbidities, suicidality, recent treatment history) to determine likely eligibility. Eligible patients were placed on the waitlist, and within a few weeks of the group start completed a set of screening questionnaires on RedCap, which included a consent form for parents and assent form for adolescents. Patients completed an intake approximately one to two weeks prior to their start date to further clarify OCD symptoms, identify treatment goals, and gather a more thorough patient history.

New patients joined the program at monthly intervals, which allowed for a hybrid rolling admission and closed cohort format. This format enabled patients to become more comfortable with each other, while simultaneously allowing a mixture of old and new participants and flexibility in treatment length. A maximum of four patients

participated in the group at a time. Patients committed to a minimum of four weeks, with the option to extend monthly if clinically indicated, up to 12 weeks total. Self-report and clinical interview measures were collected at pre-treatment, post-treatment, and monthly intervals in between, with the final group of each month dedicated to measurement collection. If participants were discharged at week four, they did not complete assessments at weeks eight or twelve—the same concept applies for those discharged at week eight. All treatment and study procedures were conducted remotely via HIPAA-compliant Zoom.

1.3. Treatment description

Treatment consisted of group therapy, individual therapy, family therapy, and multi-family group therapy. Patients received two to 3 h of treatment per day, four days per week, for a total of 10 h of treatment per week. Each treatment day consisted of 1 h of a skills group followed by 1 h of exposure and response prevention (ERP), led by a licensed psychologist with trainees (e.g., postdoctoral fellow, doctoral intern, and practicum students) co-leading each group. Thus, patients received 4 h of skills plus 4 h of ERP per week. Patients also received 1 h of individual

	Monday (Multifamily)	Tuesday (DBT)	Wednesday (DNA-V)	Thursday (Support)
Week 1 <i>Overview</i>	DNA-V overview Family ERP	Wise mind Model of emotions ERP	DNA-V overview Choice ERP	Introductions OCD story Program goals Group ERP
Week 2 <i>Values</i>	Values Family ERP	Accumulating positives Build mastery ERP	Values ERP	Impact of OCD Workability Group ERP
Week 3 <i>Noticer</i>	Perspective- taking Family ERP	Mindfulness of emotions What and How skills ERP	Emotions Noticer ERP	Family communication Parents Group ERP
Week 4 <i>Choice point</i>	Towards/away Choice point Family ERP	Opposite action ERP	Matrix ERP	Treatment difficulties Problem solving Graduation Group ERP
Week 5 <i>Defusion</i>	Advisor Defusion Control agenda Family ERP	TIPP ERP	Advisor Passengers on bus ERP	Navigating friends Sharing Group ERP
Week 6 <i>Discoverer</i>	Discoverer Willingness Family ERP	Willingness/willfulness Radical acceptance ERP	Discoverer Willingness Comfort zone ERP	Problem solving Discovery moves Group ERP
Week 7 <i>Self-as-context</i>	Values Family ERP	DEARMAN FAST ERP	Self-as-context ERP	Motivation Group ERP
Week 8 <i>Self-compassion</i>	Strengths Family ERP	Self-soothe Cope ahead ERP	Self-compassion Self-care ERP	Relapse prevention Graduation Group ERP

Fig. 1. COPE treatment outline.

therapy and 1 h of family therapy per week conducted by a licensed psychologist or postdoctoral fellow. In addition to the family therapy session, at least one parent was expected to attend the multifamily skills group and the ERP session on that same day.

Skills groups were delivered according to an 8-week protocol designed for the IOP. Each day consisted of a different skills group (e.g., Mondays - multifamily, Tuesdays - DBT, Wednesdays - DNA-V, Thursdays - support), and each week featured a different theme (e.g., week 1 - overview, week 2 - values, week 3 - noticer; see Fig. 1). For example, for week 3's "noticer" theme, the multifamily group featured an activity designed to enhance perspective-taking of family members' experiences with each other, the DBT group introduced the "wave skill" and mindfulness what and how skills, the DNA-V group taught emotion recognition using the "Aware-Name-Describe" acronym and used the "seaweed" experiential exercise to demonstrate allowing versus fighting emotions, and the support group addressed any group member struggles observed during the week.

Whenever possible, exposures during the week were done with a specific focus on practicing the skills learned. For example, following the DNA-V group during the "noticer" week patients were given the specific instruction to practice allowing versus fighting emotions that show up during their ERP. As another example, during the "values" week ERPs were even more explicitly linked to patient values, while during the "discoverer" week patients were instructed to approach their exposures from a place of willingness and curiosity.

1.3.1. DNA-V group

The DNA-V group was designed to teach a developmentally sensitive approach to ACT and ERP concepts, including practice with acceptance, mindfulness, willingness, values, defusion, choice points, and applications to treatment. Skills were primarily drawn from the DNA-V model (e.g., exploring different types of advisors to demonstrate why our minds evolved to be so sensitive and critical; acting out rigid vs. flexible seaweed to demonstrate allowing vs. fighting with emotions) and from traditional ACT and other complementary models (e.g., creating group and individual matrices, self-compassion exercises).

1.3.2. Multifamily group

Parents and adolescents attended the multifamily ACT-based group together. This group emphasized learning DNA-V and ACT concepts together, applying them to the family unit, and facilitating communication about the OCD experience both within and between families. Skills were taught and practiced in the full group, with breakout rooms utilized to complete corresponding family-based activities (e.g., create a graphic representation of family values) and facilitate family discussions (e.g., debrief sweet spot values activity as a family before sharing in the broader group, discuss a recent choice point moment, apply the DNA-V model to the family relationship).

1.3.3. DBT group

Given that many of the adolescents reported co-occurring emotion dysregulation, self-harm, and/or suicidal ideation (see *Results*), we also incorporated a dialectical behavior therapy (DBT) group to teach emotion regulation, distress tolerance, interpersonal effectiveness, and mindfulness skills in a manner consistent with ACT and ERP. The DBT group focused on applying skills to emotions more broadly (e.g., opposite action skill and riding the emotion wave for all emotions) and teaching related skills in different ways (e.g., DBT's radical acceptance and willingness vs. willfulness to accompany ACT's acceptance and willingness skills). DBT skills were described as a way to increase behavioral choice, rather than focusing on changing emotions, in order to align with an ACT approach to emotions. All skills were informed by [Dr. Rathus and Miller's DBT Skills Manual for Adolescents \(2014\)](#).

1.3.4. Support group

A weekly support group was included to facilitate greater peer

connection. Since the virtual format precluded the ability to connect informally in the waiting room and during breaks, as frequently occurs during in person groups, we considered this group to be integral to developing group cohesion in a virtual format. The support group allowed patients to reflect on OCD and the treatment process, gain peer support and peer modeling, and connect with peers who share similar experiences. Group members brought up topics or questions that they wanted peer support on, such as how to share their diagnosis with friends, difficulties with family members, trouble maintaining motivation, or questions designed to normalize their experience. They also used the time to connect more generally (e.g., sharing about hobbies and pets, advice on applying to college). Although group leaders had a more active presence early in the IOP, we found that group members were more open and engaged when leaders provided a few initial prompts and then turned off their video for the remainder of the group.

1.3.5. Group ERP

The final hour of each group day was devoted to ERP. ERPs were done as a larger group, or in small group or individual settings using breakout rooms, depending on the day of the week and needs of group members. The final 10 min of each ERP group was spent debriefing exposures together and sharing one takeaway from the day. On the multifamily day, parents and their children completed family exposures in breakout rooms. During DBT and DNA-V days, exposures were most frequently done in individual breakout rooms, but group members were paired up or assigned to small groups as clinically indicated (e.g., if two group members had similar presentations, they might be put together to practice exposures with extra peer support, e.g., sharing favorite religious songs with each other for scrupulosity themes, petting dogs together for pet contamination fears, practicing conversation-related exposures together). Exposures were framed as a way to reconnect with valued activities even in the presence of unwanted thoughts and feelings, while also practicing the day's skills. For example, extra attention was paid to noticing and gaining distance from thoughts during the "advisor" week, while patients focused on mindfulness of emotions and internal sensations during the "noticer" week and increasing self-compassion during difficult exposures during the "self-compassion" week.

The support group day featured group exposure games designed to infuse humor and playfulness into the exposures, and often facilitated defusion. Games were designed to reflect the needs of the group, be responsive to current events (e.g., Olympic-style exposures, such as speed reading, during the Olympics; creating a silly breakup letter to OCD and love letter to self for Valentine's Day) and encouraged participants to find ways to incorporate exposure into daily life (e.g., go outside and find one way to challenge OCD). Other examples of group exposures include writing OCD thoughts in the form of a junk email and trying to make it into the group leader's spam folder, creating OCD's Instagram account, making memes, Zoom background exposures, truth or dare, and creating group content such as word clouds, whiteboard collages, and group story writing.

2. Protocol overview

2.1. Week 1: overview

DNA-V Group. Patients were introduced to the DNA-V model and the concept of choosing to be oneself even when hard things show up. Elements that make a good group were brainstormed and linked to the DNA-V concepts. The "game of life" activity was used to demonstrate what it feels like to have no control and highlight the importance of choice even when it is hard. In this activity, patients were first asked to choose 4 numbers, then shown a checkerboard image with 63 marked squares containing different life events (e.g., travel, cheat others, happiness, college university, live alone, happy old age) and told that these squares represent their destiny. They were then instructed to

choose whichever 4 squares they wanted to be their destiny, and were led in a discussion on how this compared, with the conclusion that:

Choosing is hard, thoughtful choosing is even harder, but learning to consider what we care about and value is worth it. This group will help you learn how to be you and to make choices when stuff gets hard or in the way.

Multifamily Group. The initial group focused on introducing the DNA-V model through the “walk of life” exercise adapted for telehealth. The letters DNA-V were each displayed via the whiteboard feature, and group members discussed the potential meaning behind each letter. Each aspect of the DNA-V model was briefly explained, then families were instructed to share in breakout rooms their experience with each.

DBT Group. The first week introduced the concept of wise mind and provided psychoeducation about emotions. Group leaders introduced the goals of increasing emotion understanding, normalizing emotions, and communicating the important role that emotions play when held lightly.

2.2. Week 2: values

DNA-V Group. After learning about the distinction between values and goals, patients completed a virtual values card sort. Patients also completed the “Trip to Mars” activity, in which they collaboratively brainstormed how they would spend their last day on earth, as well as creating lists of who and what they would bring to a one-way trip to Mars. Lastly, values “success scenarios” were discussed to demonstrate that success is about the process and not the outcome.

Multifamily Group. To introduce values, families were prompted with the following eyes closed mindfulness exercise:

Imagine that you are at your graduation celebration (or your child's graduation party, if you are a parent). Take a moment to really picture the party—where is it? Who is invited? What kinds of food are there? Now picture the person you came to group with today, holding a microphone, about to speak to the crowded room. Take a moment to imagine what you would most like to hear from that family member.

Afterwards, families created a visual portrayal of their family values, including what makes their family unique and special, using art supplies from their homes, their phones/computers, or other available tools. Families each shared their work with the group.

DBT Group. As an adjunct to values, patients were guided through how to accumulate positive experiences in the short-term, using a pleasant activities list as an aid. They also identified ways to accumulate positive experiences in the long-term to build a life worth living by taking steps towards a values-based goal and building mastery.

2.3. Week 3: noticer

DNA-V Group. The following metaphor was introduced to explain the workability of listening to versus avoiding one's noticer:

Have you ever gotten those annoying random texts on your phone? What can you do if you don't want to get those messages? Maybe block or mute the number? Smash your phone? Strategies like these might work in the short-term, but usually make things worse in the long-term - the message isn't the problem, trying to get rid of the message is. Similarly, most of us haven't learned how to listen to our feelings and their message. We instead try to block it or shut it off.

The A-N-D acronym (aware-name-describe) was then taught experientially, asking participants to imagine 1) a pleasant memory and then 2) an unpleasant memory, prompting them to notice their breath and what they are feeling emotionally and physically (aware), identify the sensations in their body (name), and use nonjudgmental language to label the emotion (describe). Patients were then invited to sway their body and pretend to be seaweed that flows with the waves on both calm

and rough days, followed by seaweed that fights against the waves. This activity was intended to demonstrate how allowing emotions can be easier and more effective than avoidance.

Multifamily Group. To increase perspective-taking and understanding within the family, the DNA-V model was applied to family relationships. Family members took turns describing each other's DNA-V and how these processes appeared within their familial interactions. Family members were then prompted to discuss and share potential Discoverer moves to try to build value in the relationship (e.g., by trying a new activity together or responding to the family member in a new way).

DBT Group. Patients were shown a surfing video on YouTube as an introduction to the wave skill, which teaches how to be mindful of emotions and ride the emotion wave. The “What” (observe, describe, and participate) and “How” (nonjudgmentalness, staying focused, and doing what works) skills of the DBT mindfulness module were introduced, defined, and practiced using videos and activities (e.g., patients practiced nonjudgmentally describing a photo of a hairless cat).

2.4. Week 4: choice point

DNA-V Group. The ACT matrix (Polk & Schoendorff, 2014) was introduced via examples from each group member and connected to the DNA-V model. Patients then used the matrix individually to identify their unwanted internal experiences, things they do to change or avoid these experiences, their values, and actions to take towards their values. The goal of this session was to help patients realize that, instead of getting caught up in unworkable strategies, they can instead choose valued actions even when unwanted internal experiences show up.

Multifamily Group. The Choice Point was introduced to families. Families were asked to independently walk through a recent choice point moment and identify each family member's role in it. During this exercise, families were prompted to identify their towards and away moves and the “balloons” (i.e., internal experiences) along for the ride. Families were also asked to consider upcoming choice points and brainstorm towards versus away moves.

DBT Group. Opposite action was introduced using discussion and role plays to highlight behavioral choice when an emotion shows up. For example, teens were instructed to act out a scenario in which their friend takes them to a carnival but they feel depressed, and then act out the opposite action move, with the other group members guessing the emotion. An emphasis was placed on the importance of responding “all the way” as a method to increase behavioral choice, rather than changing emotions.

2.5. Week 5: defusion

DNA-V Group. The evolutionary role of the advisor was introduced through an activity. Patients imagined they were tribal warriors who may have seen a lion. They then role played what would happen if they had a silent, obedient, mellow, or critical advisor. Next, patients anonymously shared their critical advisor thoughts on the Zoom whiteboard to demonstrate that we all have similar critical advisors and to facilitate a discussion on whether thoughts themselves are a problem or if believing them without questioning is. Lastly, the passengers on the bus metaphor was introduced either through a role play activity, video, or an interactive choose your own adventure video where patients voted at each choice point (e.g., UCD CBS Lab, 2021).

Multifamily Group. The “Max the dog” story was used to demonstrate the role of language in our experiences:

One day, Max the dog was accidentally left outside all day in the rain while his owners were at work. When they returned home and let him in, what do you think he did and felt? How might you feel? The difference between us and Max is language – with language, we're able to imagine the future and remember the past and react to both like they're in the

present. And that can be more powerful than the actual present of food and warmth that the dog notices.

The advisor poem was used to help families imagine their own internal advisor:

Read this to yourself. Read it silently.
Don't move your lips. Don't make a sound.
Listen to yourself. Listen without hearing anything.
What a wonderfully weird thing, huh?

NOW MAKE THIS PART LOUD!
SCREAM IT IN YOUR MIND!
DROWN EVERYTHING OUT.

Now hear a whisper. A tiny whisper.

Now, read this next line with your best crotchety-old-man voice:
"Hello there, sonny. Does your town have a post office?"

Awesome! Who was that? Whose voice was that?
Certainly not yours.

How do you do that? How?
Must be magic

Each participant created a visual representation of their advisor in breakout rooms. Families were prompted to discuss how their advisors interact with each other, as well as share how their advisors might compare.

DBT Group. TIPP skills were introduced as a way to increase behavioral choice in moments when high arousal might otherwise lead to problematic behaviors or interfere with valued action. Patients were taught that the goal of TIPP is to create the space needed to choose how to respond when big emotions show up, rather than to control or avoid strong emotions.

2.6. Week 6: discoverer

DNA-V Group. To introduce the discoverer, we played a video of a baby learning how to walk and discussed the role of the discoverer in facilitating trial and error learning, as well as why the discoverer is important. To practice getting into the discoverer space and noticing how the advisor behaves when trying something new, patients were asked to predict what pictures the group leader was going to show on their screen and to notice what their mind says, how it feels, and whether their advisor was correct. The distinction between the comfort zone and discovery zone was highlighted and the importance of moving into the discovery zone to grow one's comfort zone was discussed.

Multifamily Group. The concept of willingness was introduced, and then families played the willingness wheel game. Families took turns spinning a virtual wheel personalized by group leaders. Participants answered prompts related to different DNA-V concepts (e.g., what is your advisor saying right now, what are 3 green things you see, what do you like to do with your family) depending on what the spinner landed on. For discovery activities, families practiced bringing in willingness to complete uncomfortable tasks in public, such as rapping in front of other group members, singing the ABCs backwards, and drawing with their foot. Families then created their own DNA-V wheels, with an emphasis on discovery activities they can practice together during the week.

DBT Group. Radical acceptance and the concept of willingness/willfulness were taught as an alternative way of practicing acceptance in OCD treatment. Acceptance of uncertainty and other links to experiences with OCD were discussed. Patients discussed how these concepts related to previous skills (i.e., those from DNA-V or individual care) and how they might use them during exposures.

2.7. Week 7: values and self-as-context

DNA-V Group. Several metaphors and activities were used to teach self-as-context depending on the group's needs. Patients were guided through an activity in which they responded to a series of "I am" and "I am not" prompts, then cut out the words they wrote and practiced putting different variations into a cup to demonstrate that the cup's shape doesn't change no matter what words are placed in it, and similarly just because one has a thought doesn't mean they are the thought or that it defines them.

Multifamily Group. Families were guided through the eyes closed "sweet spot exercise":

Take a moment to imagine a sweet spot memory from your family. A sweet spot means that the moment is complete and precious, and that you did not need something more or less to make the moment perfect. It is simply sweet as is—it is just right. Pick a moment from your memories with your family, maybe even with the person who is here with you today. Try to picture it as if you are really there—what do you see? Do you smell anything? What do you feel? Consider the qualities and aspects of this moment that made it so meaningful.

Afterwards, they shared within their individual family and subsequently in the broader group. They then brainstormed ways to move towards the values identified in the memory.

Families were also guided through the "coin exercise" in which they identified a family-related value on one side of a sheet of paper and wrote out the difficult thoughts and feelings that might show up when they take action towards that value on the other side. They were instructed:

What if it's the case that our values and our suffering are like two sides of the same coin? We feel pain and vulnerability because we care, and when we move away from the suffering, we also often move away from our values. Rather than moving away from the things that are painful or uncomfortable, can we learn to notice that discomfort, because that's where you'll find your values – can you carry this coin with you, both sides?

DBT Group. DEARMAN was taught as a skill to maintain relationships and reduce conflict while getting what you want and need to maintain your own self-respect and values. Patients practiced the DEARMAN skill together using an example from a group member before creating individual DEARMANs to practice during the week.

2.8. Week 8: self-compassion

DNA-V Group. Patients were guided through a self-compassion writing activity (Neff & Germer, 2022). They were instructed to write for 5 min about something that makes them feel bad about themselves, then to write for another 5 min from the perspective of an imaginary friend with unlimited compassion. They were then introduced to the DNA-V six ways to well-being: connecting with others, giving to others and having a positive influence, being active, embracing the moment, challenging ourselves, and learning, and caring for ourselves (Hayes & Ciarrochi, 2015). Patients collaboratively brainstormed different ways to act in line with these six ways and their values during the next week.

Multifamily Group. The strengths sorting exercise was adapted for families and the virtual format using a PDF of cards with strengths on them. Family members first "sorted" the top 5 strengths they see in each other, and then identified their top 5 family strengths. Subsequent discussion was focused on how these family strengths can be used to support treatment of OCD.

DBT Group. Self-soothe with the six senses was introduced as a skill for coping with big emotions and part of daily self-care, especially in the service of being mindful and kind to ourselves. Patients brainstormed self-soothe activities and practiced in session by sharing different sensory items they planned on using. Cope ahead was also taught as a

preparatory strategy for difficult situations, particularly as group members prepare to graduate.

2.9. Measures

In the present study, there were two “waves” of participants. The first wave ($n = 12$) and second wave ($n = 13$) each completed different measures, as described below.

2.9.1. Demographics

All adolescents were asked to report their age, gender, race, and sexuality. Parents from the second wave ($n = 13$) were also asked questions about their child’s current and past self-harm desire, self-harm behaviors, and suicide attempts.

2.9.2. Primary outcomes

Children’s Yale-Brown Obsessive Compulsive Scale-II (CYBOCS-II; Storch et al., 2019). The CYBOCS-II is a clinician-administered measure of pediatric OCD symptom severity based on the YBOCS, a clinical interview for OCD symptom severity in adults. The CYBOCS-II is composed of a general OCD symptom checklist, followed by 14 items about obsession and compulsion frequency and severity rated on a five-point Likert scale (0 = *None*, 5 = *Extreme*). Scores on the CYBOCS-II are based on ten of the severity items and range from 0 to 50, with higher scores indicating greater severity. The CYBOCS-II has established good validity and reliability in previous research (Storch et al., 2019) and the current study ($\alpha = 0.81$). All participants in the study completed the CYBOCS-II, which was administered by a licensed psychologist or postdoctoral fellow.

Children’s Obsessive Compulsive Inventory – Revised (OCI-CV-R; Abramovitch et al., 2022). The OCI-CV-R is an 18-item questionnaire of pediatric OCD symptom severity. Participants were asked to rate each item on a three-point Likert scale (0 = *Never*, 2 = *Always*). Higher scores indicate greater severity, with scores ranging from 0 to 36. In the present sample, the reliability of the OCI was good ($\alpha = 0.87$). Only the second wave participants completed the OCI-CV-R.

Children’s Florida Obsessive Compulsive Inventory (CFOCI; Storch et al., 2009). The CFOCI is another self-report of pediatric OCD severity. The CFOCI is comprised of two parts: a 17-item symptom checklist covering common obsessions and compulsions, followed by a five-item symptom severity rating scale. The symptom severity rating scale assesses the time occupied, distress, avoidance, interference, and degree of control the adolescent experienced with their OCD. Each item is rated on a four-point Likert scale ranging from none to extreme. Based on past research, the CFOCI has good validity and acceptable consistency (Storch et al., 2009). In the present sample, the reliability was acceptable ($\alpha = 0.70$). Only the first wave participants completed the CFOCI.

Child OCD Impact Scale (COIS; Piacentini et al., 2007). The COIS measures the impact of OCD on a child’s functioning from both the parent and child perspectives (i.e., a parent and child version). Both the parent and child rate how much OCD has interfered (0 = *Not at all*, 3 = *Very much*) in a variety of domains of life (e.g., school or socializing). The COIS parent and child-reports have good internal consistency and validity in past samples (Piacentini & Jaffer, 1999). In the current sample, the reliability was excellent for both parent and child reports ($\alpha_s = 0.94$). Only the second wave participants completed the COIS.

2.9.3. Secondary outcomes

Screen for Child Anxiety and Related Disorders (SCARED; Birmaher et al., 1999). The SCARED is a self-report for symptoms of anxiety disorders. The parent report and child report both have 41 items that are rated on a four-point Likert scale (0 = *Not true or hardly ever true*, 3 = *Very true or often true*). A score of 25 or higher indicates the possible presence of clinically significant anxiety. The SCARED is considered a reliable and valid measure in past research (Birmaher et al., 1999) and achieved good consistency in the current sample (parent $\alpha = 0.88$ and

child $\alpha = 0.95$). Only the second wave participants completed the SCARED.

Center for Epidemiologic Studies Depression Scale for Children (CES-DC; Phillips et al., 2006). The CES-DC is a 20-item self-report questionnaire of depressive symptoms. Participants rank each item on a four-point Likert scale (0 = *Rarely or none of the time*, 3 = *Most or all of the time*). The CES-DC is considered a reliable and valid measure with youth (Phillips et al., 2006). In the present sample, the reliability was excellent ($\alpha = 0.93$). Only second wave participants completed the CES-DC.

Familial Accommodation Scale for OCD – Self-Report (FAS; Pinto et al., 2013). The FAS is a measure of familial accommodation behaviors and symptom interference. The first nine items ask about parental participation in symptoms (e.g., modifying routines or behaviors for the child’s anxiety) and the remaining four items are about potential distress or consequences experienced by the parent as a result of accommodation. All items are ranked on a five-point Likert scale (0 = *Never*, 4 = *Daily*). The FAS has good validity in previous research and good reliability in the current sample ($\alpha = 0.89$). Only the parents of the second wave participants completed the FAS.

Client Satisfaction Questionnaire (CSQ; Larsen et al., 1979). The CSQ is an 8-item questionnaire of client satisfaction. In the present study, the eight items were adapted to better suit the population and treatment protocol (e.g., changing wording to reflect telehealth format). Each item is rated on a 4-point Likert scale, with lower scores indicating greater dissatisfaction and higher scores indicating more satisfaction. Scores on the CSQ can range from 1 to 32. The CSQ was completed by both adolescent and parents in the second wave of participants.

Qualitative Feedback. Both parents and adolescents from the second wave of participants were asked a series of seven brief, open-ended questions for qualitative feedback on the acceptability of the program. The questions asked participants how their overall experience was, which parts of the program were most and least helpful, as well as offered an opportunity to provide any suggestions for feedback and/or improvement.

2.10. Data analysis

All data analysis took place in R with RStudio (R Core Team, 2021) with the following packages: *effsize* (Torchiano & Torchiano, 2020), *dplyr* (Mailund, 2019), *janitor* (Firke, 2020), *furniture* (Barrett & Brignone, 2017), *stringr* (Wickham & Wickham, 2019), *lmerTest* (Kuznetsova et al., 2017), *lme4* (Bates et al., 2009), *ggplot2* (Wickham et al., 2016), and *cowplot* (Wilke et al., 2019). Descriptive statistics, including means and standard deviations, were calculated for demographic and psychological variables, as appropriate. All participants were included with an intention-to-treat model. When possible, the first and second waves of participants were combined.

Nested multilevel models (MLM) using maximum likelihood criterion were utilized to evaluate change over time. A series of nested models were created and compared to find the best fit for the data. For each outcome variable, the following models were created and compared: a null model containing only random intercepts for each participant, a model with a fixed effect for time (i.e., assessment point) in addition to random intercepts, and a model with a fixed effect for stay length and time. The best-fitting model was determined by using likelihood ratio tests (at $p < .05$) for each subsequent model (i.e., the best-fitting model from the comparison between null and time-only was then compared to the model containing stay length and time).

Lastly, effect sizes using Hedges’ g were calculated to estimate the size of within-group change across timepoints. The following benchmarks were used: 0.2 for a small effect, 0.5 for a medium, and 0.8 for a large.

3. Results

The sample was largely White (68%), heterosexual (60%) and cis-gender girls (56%). The average age was 15.70 ($SD = 1.83$). Two past suicide attempts were reported by parents and approximately 33.3% of the second wave of parents reported past self-harm behaviors and 46.7% reported past desire to self-harm in their child. Approximately 13.3% reported current desire to self-harm with 6.7% engaged in active self-harm behaviors. Seven participants completed the program after four weeks, 13 completed after eight weeks, and five completed after 12 weeks. As previously noted, participants did not complete measures after their discharge point. On average, 37.3% of expected responses (i. e., due to participant incompleteness rather than different waves or discharge) at baseline were missing across measures, 46.9% of responses for week four, 28.2% of responses for week eight, and 25% of responses for week 12. Full demographics can be found in Table 1. All means and standard deviations for all measures can be found in Table 2.

3.1. Adolescent outcomes

Estimated marginal means and 95% confidence intervals from best-fitting MLMs for adolescent outcomes can be found in Table 3. All figures of best-fitting MLMs for the adolescent outcomes can be found in Fig. 2.

3.1.1. CYBOCS-II

The best-fitting model for the CYBOCS-II had a significant effect of time ($p < .05$). Within-group effect sizes indicated medium to large decreases from pre-treatment to 4 weeks (Hedges' $g = 0.77$), 8 weeks (Hedges' $g = 1.66$), and 12 weeks (Hedges' $g = 1.28$).

3.1.2. OCI-CV-R

The best-fitting model for the OCI-CV-R had a significant effect of time ($p < .05$). Within-group effect sizes indicated a small decrease from pre-treatment to 4 weeks (Hedges' $g = 0.39$) and large decreases from pre-treatment to 8 (Hedges' $g = 0.80$) and 12 weeks (Hedges' $g = 0.85$).

3.1.3. CFOCI

The best-fitting model for the CFOCI had a significant effect of time ($p < .05$). Within-group effect sizes indicated large decreases from pre-treatment to 4 weeks (Hedges' $g = 1.18$) and 8 weeks (Hedges' $g = 2.36$). There were not sufficient responses to calculate effect size at 12 weeks.

3.1.4. COIS-R-child

The best-fitting model for the COIS-R-child report was the null model and did not include an effect of time. However, within-group

Table 1
Demographics from the adolescent participants.

	Full sample (N = 25)
Age, M (SD)	15.70 (1.83)
Gender, n (%)	
Male	9 (36.0)
Female	14 (56.0)
Trans/Non-binary	2 (8.0)
Race, n (%)	
White	17 (68.0)
Black/African-American	1 (3.7)
Asian/Asian-American	4 (14.8)
Mixed race	2 (7.4)
Other	1 (3.7)
Sexual orientation, n (%)	
Heterosexual/straight	15 (60.0)
Gay/lesbian	1 (3.7)
Asexual	2 (7.4)
Pansexual	2 (7.4)
Not reported	5 (18.5)

Table 2

Means and standard deviations across timepoints for all measures.

	Week 0	Week 4	Week 8	Week 12
CYBOCS-II ^d	32.6 (6.7)	25.9 (11.0)	21.2 (6.6)	23.0 (9.8)
OCI-CV-R ^c	16.1 (7.0)	13.4 (6.3)	11.0 (5.1)	9.5 (7.5)
CFOCI ^b	14.3 (1.9)	10.2 (4.1)	9.6 (1.9)	- ^a
COIS-Parent Report ^c	41.4 (23.5)	9.0 (NA)	34.5 (23.3)	- ^a
COIS-Child Report ^c	42.8 (22.6)	21.0 (14.1)	39.8 (26.0)	38.3 (20.5)
SCARED-Child Report ^c	41.7 (15.4)	32.7 (16.1)	33.7 (18.2)	22.8 (13.6)
SCARED-Parent Report ^c	27.3 (11.0)	22.8 (11.6)	20.2 (11.3)	1.0 (1.4)
CES-DC ^c	37.0 (13.3)	29.2 (18.1)	30.9 (14.9)	30.0 (17.1)
FAS ^c	22.8 (15.1)	15.2 (14.4)	12.4 (10.6)	2.0 (1.4)

Note. CYBOCS-II = Children's Yale-Brown Obsessive Compulsive Scale - II, CFOCI = Children's Florida Obsessive Compulsive Inventory, OCI-CV-R = Children's Obsessive Compulsive Inventory - Revised, COIS = Children's OCD Impact Scale - Child report, SCARED = Screen for Child Anxiety and Related Disorders, CES-DC = Center for Epidemiologic Studies Depression Scale for Children, FAS = Familial Accommodation Scale for OCD self-report.

^a Not enough participants available to calculate.

^b Only the first wave of participants included.

^c Only the second wave of participants included.

^d Both waves of participants included.

effect sizes indicated large decreases from pre-treatment to 4 weeks (Hedges' $g = 0.90$) and negligible small decreases from pre-treatment to 8 weeks (Hedges' $g = 0.12$) and 12 weeks (Hedges' $g = 0.18$).

3.1.5. SCARED - child report

The best-fitting model for the SCARED - child report had a significant effect of time ($p < .05$). Within-group effect sizes indicated small to medium decreases from pre-treatment to 4 weeks (Hedges' $g = 0.53$) and 8 weeks (Hedges' $g = 0.45$) and a large decrease from pre-treatment to 12 weeks (Hedges' $g = 1.17$).

3.1.6. CES-DC

The best-fitting model for the CES-DC was the null model and did not include an effect of time. Within-group effect sizes indicated small, bordering on medium decreases, from pre-treatment to 4 weeks (Hedges' $g = 0.46$), 8 weeks (Hedges' $g = 0.41$), and 12 weeks (Hedges' $g = 0.44$).

3.2. Parent outcomes

Estimated marginal means and 95% confidence intervals from best-fitting MLMs for parent outcomes can be found in Table 4. The graphs of the best-fitting MLMs for the parent outcomes can be found in Fig. 3.

3.2.1. COIS-R - parent report

The best-fitting model for the COIS-R parent report had a significant effect of time ($p < .05$). However, within-group effect sizes were not able to be calculated for pre-treatment to 4 weeks or 12 weeks due to insufficient data. However, a small decrease was found from pre-treatment to 8 weeks (Hedges' $g = 0.25$).

3.2.2. SCARED - parent report

The best-fitting model for the SCARED - parent report had a significant effect of time ($p < .05$). Within-group effect sizes indicated small decreases from pre-treatment to 4 weeks (Hedges' $g = 0.37$) and from pre-treatment to 8 weeks (Hedges' $g = 0.45$) and a large decrease from pre-treatment to 12 weeks (Hedges' $g = 1.31$).

3.2.3. FAS

The best-fitting model for the FAS had a significant effect of time ($p < .05$). Within-group effect sizes indicated small decreases from pre-treatment to 4 weeks (Hedges' $g = 0.48$), medium decrease from pre-treatment to 8 weeks (Hedges' $g = 0.72$), and large decrease from pre-treatment to 12 weeks (Hedges' $g = 1.31$).

Table 3

Estimated marginal means and 95% confidence intervals from best-fitting MLMs for adolescent outcomes.

	CYBOCS-II	CFOCI	OCI-CV-R	COIS	SCARED	CES-DC
Intercept	31.94 [28.79; 35.09] ^a	12.91 [11.06; 14.76] ^a	15.53 [11.69; 19.37] ^a	38.09 [25.68; 50.50] ^a	37.19 [26.50; 47.88] ^a	33.79 [25.17; 42.40] ^a
Week	-1.33 [-1.61; -1.05] ^a	-0.46 [-0.73; -0.19] ^a	-0.37 [-0.62; -0.12] ^a		-0.59 [-0.99; -0.20] ^a	
BIC	404.39	173.94	161.16	148.48	164.48	187.47
Number of observations	60	32	27	17	23	25
Number of participants	24	13	11	10	9	10

Note. CYBOCS = Children’s Yale-Brown Obsessive Compulsive Scale – II, CFOCI = Children’s Florida Obsessive Compulsive Inventory, OCI-CV-R = Children’s Obsessive Compulsive Inventory, COIS = Children’s OCD Impact Scale – Child report, SCARED = Screen for Child Anxiety and Related Disorders – Child Report, CES-DC = Center for Epidemiologic Studies Depression Scale for Children.

^a 0 outside the confidence interval.

3.3. Acceptability

3.3.1. CSQ

Adolescents. On average, adolescent participants who completed the CSQ ($n = 10$) reported an average score of 29.4 (SD = 2.41). Item

averages ranged from 3.4 to 3.9 (SDs ranging from 0.32 to 0.71). These aggregate scores indicate very high satisfaction as a whole.

Parents. The eight parents who completed the CSQ reported an average score of 30.5 (SD = 2.27), demonstrating high parental satisfaction overall. Item averages ranged from 3.5 to 4.0 (SDs ranging

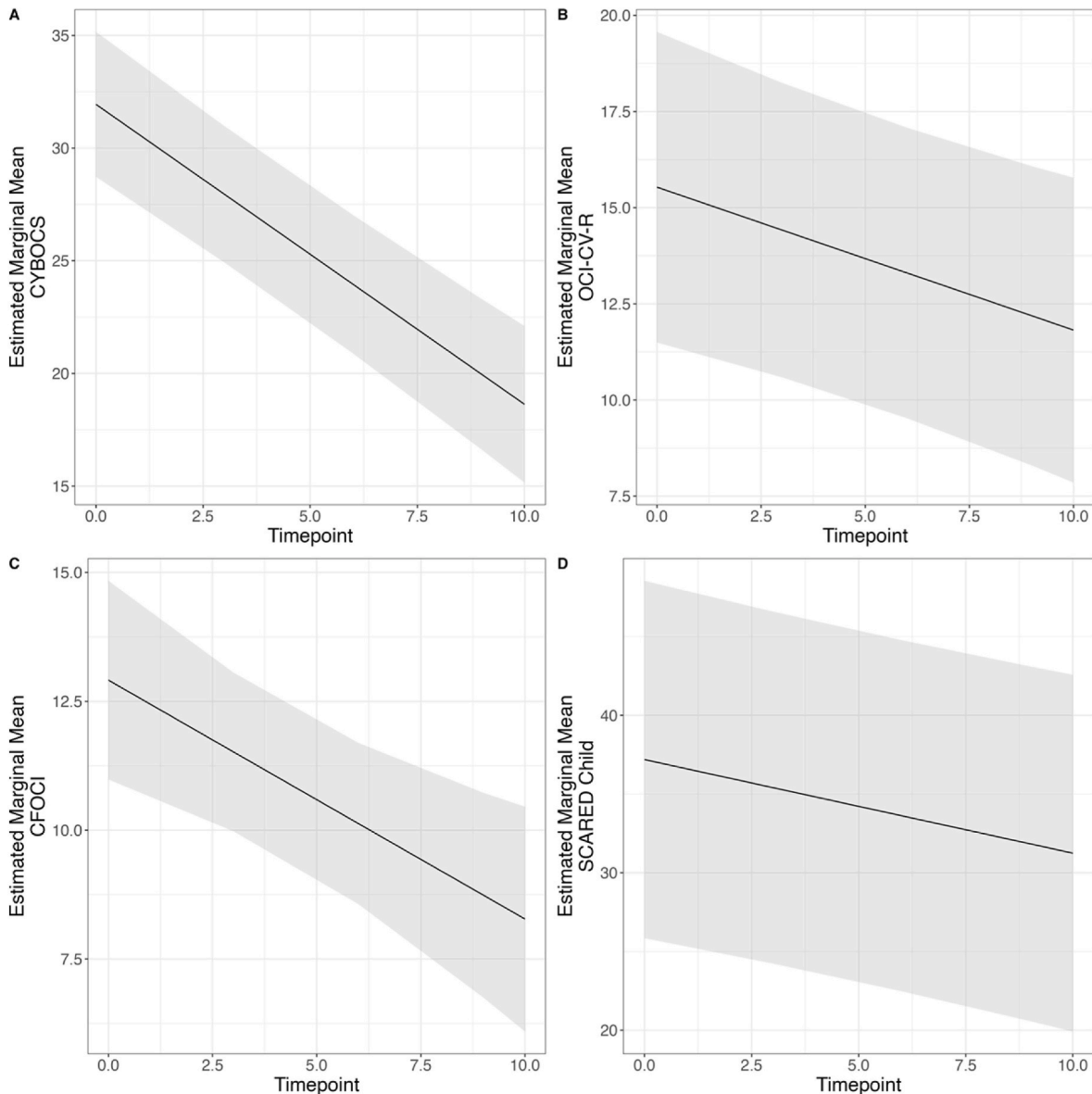


Fig. 2. Estimated marginal means and standard error ribbons from best-fitting model for adolescent outcomes at $p < .05$.

Table 4
Estimated marginal means and 95% confidence intervals from best-fitting MLMs for caretaker outcomes.

	COIS	SCARED	FAS
Intercept	40.38 [23.28; 57.48] ^a	25.54 [18.65; 32.43] ^a	21.67 [13.06; 30.28] ^a
Week	-2.20 [-2.49; -1.91]*	-1.18 [-1.69; -0.68]*	-2.01 [-3.11; -0.91] ^a
BIC	62.72	136.14	166.80
Log Likelihood	-27.20	-62.18	-77.31
Number of Observations	8	19	21
Number of participants	6	11	11

Note. COIS = Children’s OCD Impact Scale – Parent report, SCARED = Screen for Child Anxiety and Related Disorders – Parent Report, FAS = Familial Accommodation Scale for OCD – Self Report.

^a Null hypothesis value outside the confidence interval.

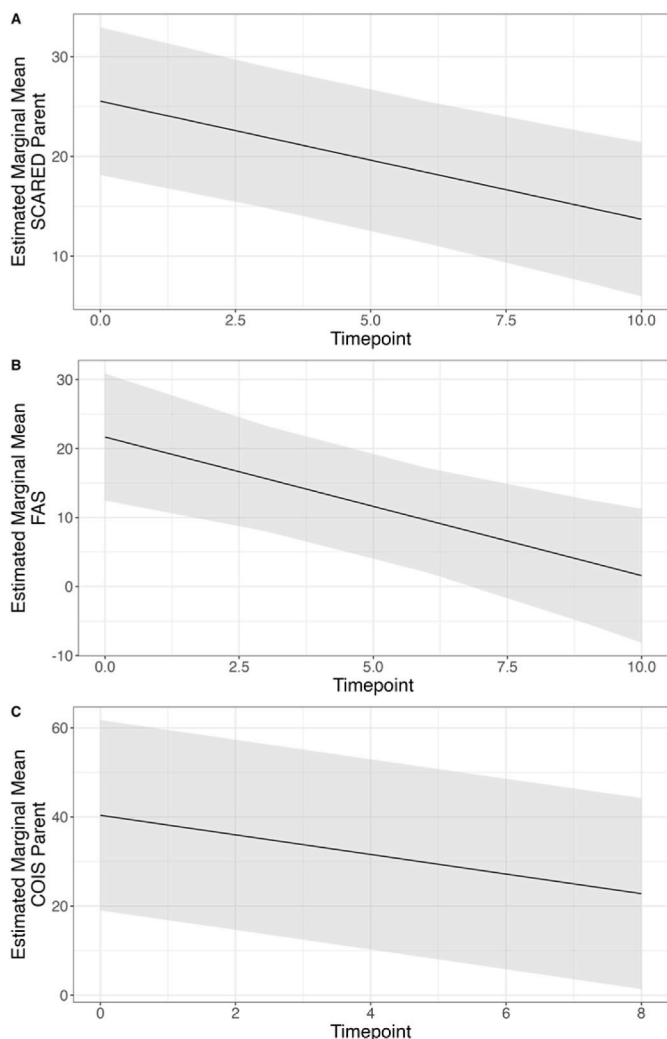


Fig. 3. Estimated marginal means and standard error ribbons from best-fitting model for caretaker outcomes at $p < .05$.

between 0 and 0.53), which also indicated very high satisfaction on average.

3.3.2. Qualitative feedback

Parents overwhelmingly highlighted the program as helpful and informative for their child and the family unit. More specifically, parents

highlighted the parent involvement (“learning how to best support my child when he is experiencing distress, because then I can hopefully help him even when our therapist is not there”), ERP (“learning and practicing ERP”), and group format (“the group program allows families to learn from each other and kids to learn from their peers”) as most helpful. They also noted that the telehealth aspect of the program was very useful, making the program more accessible to attend (“it would have been nearly impossible for us to participate in person and it worked via Zoom very well”) and increasing the ecological validity of ERPs (“being able to practice at home is helpful”). Areas for improvement included more scheduling options and considering an in-person meet-up or graduation, and increasing support for after the program (e.g., offering an ongoing maintenance group). Overall, parents described the program as very beneficial and positive (e.g., “transformative for our family”, “IOP has pulled us out of a very dark and hopeless place and made us optimistic and hopeful again”).

Adolescents also described the program as beneficial and educational in their qualitative feedback. Similar to their parents, adolescents emphasized the utility of exposures and ERP, as well as the family therapy (e.g., involving and educating parents) and acceptance-based skills—many adolescents named specific acceptance-based skills as the most helpful component. Several adolescent participants also emphasized the supportive environment and friendships made via the IOP as particularly useful (e.g., “ability to talk to peers who I share similar struggles with”). Multiple participants described the IOP as a significant and meaningful experience for them (e.g., “[helped] me save my life”, “It was a very valuable and precious experience on my journey to full OCD recovery”). For improvement, adolescents suggested adding more time to get to know one another and to adapt to the environment before, during, and after the IOP (e.g., more breaks, adding a support group after the IOP to maintain connection).

On a final note, we observed that patients attended the overwhelming majority sessions, with occasional misses related to special incidences (e.g., family trip, graduation). Therapists in the program noted that they had fewer misses/cancellations than in typical outpatient therapy. The virtual format also allowed patients to attend even if they had initially forgotten or were not feeling well. Although formal attendance data was not collected, positive attendance points towards broad acceptability.

4. Discussion

The present pilot study is the first to examine the preliminary effectiveness and acceptability of an acceptance-based, group telehealth IOP for adolescents with OCD. With both adolescent and parent outcomes, this study presents many important results that may aid in how to best implement intensive treatment formats for adolescent OCD and related problems.

4.1. Adolescent outcomes

Adolescents in the present study completed several different measures of OCD symptom severity. Broadly speaking, adolescents reported large decreases in OCD severity over time. More specifically, adolescents reported large decreases in the CYBOCS-II and CFOCI, and small to large decreases in the impact of OCD symptoms on their life (i.e., the COIS). These results are comparable to previous research on IOPs for adolescent OCD, which find strong symptom decreases over time for both acceptance-based (Petersen et al., 2022b) and ERP-focused treatment formats (Storch et al., 2007; Whiteside et al., 2014). More specifically, the large effect size in OCD symptom decreases, as measured by the CYBOCS-II, is in line with Whiteside et al. (2014) and Storch et al. (2007) large effect sizes for OCD symptom severity (as measured by the CYBOCS) after treatment. Whiteside and colleagues also found similar changes in the COIS—medium change from pre-treatment to follow-up, as compared to the large change from pre-treatment to four

weeks in the present study. The consistency of these findings with past research points towards the possible utility of telehealth formats for IOPs. This is particularly noteworthy given that almost all previous research on adolescent OCD IOPs have been in-person despite promise for outpatient telehealth formats (Comer et al., 2017; Wootton, 2016).

Looking to other outcomes, adolescents also reported decreases in anxiety and depression. More specifically, adolescents reported small to large decreases in anxiety across timepoints. This finding was expected, as anxiety symptoms have decreased alongside OCD symptoms in previous intensive research with adolescents using a similar time frame (Petersen et al., 2022b; Storch et al., 2007). Effect sizes from previous research on pediatric OCD similarly report medium to large changes in anxiety following intensive treatment (Storch et al., 2007; Whiteside et al., 2014). Adolescents also reported small to medium changes in depressive symptoms across timepoints. The improvements in depression are broadly consistent with the current available literature on depression as a secondary outcome in OCD IOPs, which also indicate small to medium effect sizes for changes in depression (Petersen et al., 2022b; Storch et al., 2007; Whiteside et al., 2014). However, the effect sizes for depression were not as large as those for anxiety. Because the program was focused on OCD and anxiety-related concerns, it is possible that adolescents thereby experienced less gains without an explicit focus on depression. In past research, adolescents who have received ACT or acceptance-based interventions for anxiety or related concerns have not reported significant changes in depression (e.g., Petersen et al., 2022a). This discrepancy could be because adolescents may lack the cognitive abilities to broadly generalize treatment skills from one concern to another, even in a transdiagnostic treatment approach, or that changes in depressive symptoms might follow changes in anxiety and therefore are not immediately evident at post-treatment; however, this is conjecture that calls for further research. Alternatively, it may be that the telehealth component acted as a small barrier for the behavioral activation that often accompanies treatment (e.g., leaving the house, interacting in a new setting). Future research should examine how to best implement treatment so that the skills are transferrable across mental health concerns, both for those receiving treatment and for global efficiency of treatment implementation (e.g., cost effectiveness, developmental appropriateness of the intervention).

4.2. Parent outcomes

Parents generally reported medium to large decreases for their adolescents' symptoms that were consistent with the adolescent report. First, parents reported small improvements in the impact of OCD symptoms on their child's life (i.e., the COIS). However, there was a good portion of missing data for this questionnaire, so these findings should be taken with caution. The decrease in OCD symptom impact is consistent with past research using the COIS, but with smaller effects—previous intensive research has found medium to large effect sizes in the parent COIS (Storch et al., 2007; Whiteside et al., 2014). Furthermore, the improvement in life impact aligns well with what we would expect to see when utilizing ACT-based interventions, which target the patient's engagement in their life and values. Additionally, it is especially important that a telehealth-based intervention was able to improve symptom impact on the adolescent's life, suggesting that telehealth IOPs are equally capable of influencing an adolescent's daily life and symptom gains.

Parents also reported small to large improvements in their child's anxiety over the course of treatment. Again, these findings are consistent with the adolescent symptom report and with the large effect sizes from previous parent report of adolescent anxiety following intensive treatment (Whiteside et al., 2014). Because parent and child reports are often dissonant (e.g., Cosi et al., 2010), especially when using the SCARED, these findings show the promise of the intervention's effects, as both parties were seemingly in agreement. However, we were not able to assess for clinically significant change in the SCARED due to the large

amount of missing data. Thus, we are unable to discern if these changes were clinically impactful based on the current statistical standards (Caporino et al., 2017).

Lastly, parents reported small to large improvements in familial accommodation over time. Because parents were directly involved in therapy in multiple ways, this outcome was expected and consistent with standards emphasizing the importance of involving family in the treatment of pediatric OCD (e.g., Geller & March 2012). The increased access to parents allowed by telehealth may have facilitated communication between therapist, child, and parents, subsequently bolstering outcomes. Familial accommodation has not yet been examined as a potential outcome of acceptance-based interventions for adolescent OCD, so this is a novel finding. However, it is consistent with the previous research on ERP and related CBT interventions for adolescent OCD, aligning with previously reported large effect sizes (e.g., Storch et al., 2007; Whiteside et al., 2014).

4.3. Limitations

While this study presents a novel telehealth and acceptance-based IOP for youth with OCD, there are several important limitations to address. First, the study is naturalistic and not controlled. Ideally, future research would utilize more controlled formats with comparison interventions to gain a true sense of how the intervention might perform under ideal conditions (e.g., equal treatment length for all participants, comparison to a non-acceptance-based condition). Dismantling studies may also be beneficial to gain a better understand of which components may be the active ingredient of treatment to improve precision of treatment delivery. This study also did not use independent evaluators to assess for OCD symptom change—future research would benefit from masked, clinician-rated symptom assessment. Second, the sample is fairly small with significant missing data (25–46.9% missing on average across timepoints). There is also some inconsistent measurement due to changes in study design after the first wave of participants (e.g., using different OCD symptom questionnaires). Additionally, a larger and less homogenous sample will be necessary for future research to best understand how this IOP format may function for youth with OCD from more diverse backgrounds (e.g., cultural adaptations for different family formats and/or traditions). Future studies may also formally track attendance to components of therapy to better understand acceptability and active ingredients of treatment. Lastly, this study currently only looks at pre-to post-treatment ratings. Because adolescence is a period of intense change and development, following adolescent outcomes for several months after the intervention would be beneficial for understanding how effective an intervention truly is and what the long-term impact might be. This is especially important for an IOP, as we are hoping to best understand how this treatment format can set up adolescents to return to daily life and standards of care (e.g., weekly treatment sessions).

4.4. Clinical implications and lessons learned

Both parents and adolescents reported extremely high satisfaction with the program based on the total and individual item scores of the CSQ. From qualitative feedback, it was clear that adolescents and parents both found the program meaningful and beneficial for the adolescent and their family as a unit. These results are consistent with previous studies assessing acceptability of ACT as an intervention for adolescents (e.g., Petersen et al., 2022a; Petersen et al., 2022c). This study, to our knowledge, is the first to assess satisfaction with a telehealth, ACT-based intervention for adolescent OCD; these high ratings thereby demonstrate significant promise for this intervention format.

With the promising outcomes and acceptability ratings in mind, there are exciting preliminary clinical implications. First, this pilot study suggests that it is possible to effectively deliver an IOP program with diverse programming (e.g., multifamily, family, individual, group) using

telehealth for adolescents with more severe clinical presentations. This finding has important implications for increasing access to care, particularly for rural populations—this is of special relevance given that the program was located in the southern United States, an area with significant rural populations in need of care. This study also supports the effective integration of ERP, ACT, and DBT for OCD and comorbid concerns in adolescents. While further research is needed, the integration of therapeutic skills across modalities points towards the promise of process-based and transdiagnostic therapies, a growing area of work in youth of many presenting problems.

When creating and implementing this pilot telehealth IOP, there are several important lessons to consider. First, effectively utilizing Zoom and using its unique features and benefits to enhance treatment delivery was a priority within the IOP. As described in the sample protocol, we relied on diverse modes of treatment delivery, including videos, images, games, breakout rooms, and collaborative Whiteboard use. Future telehealth programs should focus on increasing participation and attentiveness via experiential and engaging exercises. While this is important when working with youth generally, it is even more important via telehealth. Second, on an administrative level, there was some difficulty with identifying assessments that met the needs of all participants—it may be important for future telehealth IOPs to cast a wide net with initial measurements to avoid having multiple waves of participant data such as in the present study. Lastly, the support group was an extremely important element for fostering community and bonding amongst the adolescents and is highly recommended for any telehealth program.

5. Conclusion

In sum, this pilot study presents promising preliminary results for an acceptance-based, telehealth intensive group program for adolescents with OCD. Adolescents and parents reported small to large symptom decreases in OCD and other, related outcomes (e.g., anxiety, familial accommodation). This study adds to the growing evidence base of acceptance-based interventions for adolescents with OCD, anxiety, and other mental health concerns (Petersen et al., 2022a; Petersen et al., 2022c). This is also the first study to examine the effectiveness of DNA-V, a developmentally adapted form of ACT, with youth in higher levels of care. While more controlled research is needed, these naturalistic findings highlight the promise of utilizing telehealth and “third wave” formats of cognitive behavioral therapies for adolescents with OCD.

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Declaration of competing interest

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