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Still Struggling: Characteristics of Youth With OCD Who are Partial Responders to Medication Treatment

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Abstract

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The primary aim of this paper is to examine the characteristics of a large sample of youth with OCD who are partial responders (i.e., still have clinically significant symptoms) to serotonin reuptake inhibitor (SRI) medication. The sample will be described with regard to: demographics, treatment history, OCD symptoms/severity, family history and parental psychopathology, comorbidity, and global and family functioning. The sample includes 124 youth with OCD ranging in age from 7 to 17 with a primary diagnosis of OCD and a partial response to an SRI medication. The youth are a predominantly older (age 12 and over), Caucasian, middle to upper income group who had received significant past treatment. Key findings include moderate to severe OCD symptoms, high ratings of global impairment, and significant comorbidity, despite partial response to an adequate medication trial. Considerations regarding generalizability of the sample and limitations of the study are discussed.

Keywords

Pediatric obsessive compulsive disorder (OCD); Serotonin reuptake inhibitor (SRI); Partial responder; Phenomenology

Introduction

Obsessive Compulsive Disorder (OCD) is a chronic and debilitating psychiatric disorder in childhood, affecting as many as 2–3% of children and adolescents [1–6]. The onset of this disorder in childhood is a significant predictor of adult morbidity [7]. Thus, effectively treating OCD in young people may improve functioning and reduce lifelong morbidity, resulting in significant public health benefit.

There is good evidence to suggest that the best choice for initial treatment for OCD in youth is cognitive behavioral treatment (CBT) alone or in combination with a serotonin reuptake inhibitor (SRI) [8–10]. However, despite expert recommendations to start with CBT or CBT plus an SRI, pharmacotherapy with an SRI alone is a widely used initial treatment for OCD in patients of all ages [11, 12]. Notably, most OCD patients who receive SRI pharmacotherapy evidence a partial response, with clinically significant residual symptoms [8]. From a public health standpoint, this group of partial responders represents a population of youth with a significant treatment need who have often been overlooked.

The primary goal of this paper is to describe the characteristics of this sizeable and previously overlooked subgroup of treatment-seeking youth with OCD including: demographic variables, medication and therapy history, OCD symptoms and severity, family history and current parental psychopathology, comorbidity, and global and family functioning. The current sample was drawn from the Pediatric OCD Treatment Study II (POTS II). POTS II was an NIMH-funded trial that examined the efficacy of two different CBT augmentation strategies (full CBT or brief CBT) for youth who were partial responders to an optimal dosage of a SRI as compared to medication treatment alone [13, 14].

This study provides a unique opportunity to understand further the phenomenology of treatment-seeking youth with OCD who are partial responders to medication. It is important to note that this sample is not one of non–responders to medication treatment. The youth in this study must have demonstrated some medication response, yet despite this response remained clinically symptomatic. Also, the participants and families in this study were seeking additional treatment for their OCD. This is in contrast to a broader sample of partial responders, many of whom do not seek additional treatment. The results presented here will allow for an examination of the extent to which this sample bears resemblance to youth with OCD seen in both clinical practice as well as in other large research trials. In better

characterizing these youth, we hope to shed light on what types of augmentation strategies may be most fruitful for a full resolution of OCD symptoms.

Method

Participants

The study sample includes 124 youth between the ages of 7–17 with a primary Diagnostic and Statistical Manual of Mental Disorders- 4th Edition (DSM-IV) diagnosis of OCD at study entry. Participants were recruited from three collaborating academic sites: The University of Pennsylvania (n = 41; 33.1% of sample), Duke University (n = 35; 28.2%), and Brown University (n = 48; 38.7%). Participant recruitment took place between 2004 and 2009. The study was approved by the respective Institutional Review Boards at each institution.

In the spirit of effectiveness research, the sampling frame was designed to recruit a broadly representative sample of youth with OCD seeking augmentation of SRI partial response, while still including key efficacy elements (e.g., randomization, specified inclusion criteria) to ensure internal validity. The specific goal was to recruit patients who had received their SRI treatment from psychiatrists in community settings resulting in a sample that was highly representative of the population of patients who still have significant OCD symptoms despite having already received the most commonly recommended pharmacotherapy for pediatric OCD.

Inclusion and Exclusion Criteria—Participants entered the study through a three-gate entry procedure designed to ensure that they had stable, pervasive primary OCD symptoms at the start of treatment. Gate A (or the first timepoint) is a semi-scripted telephone screening procedure that elicits preliminary inclusion/exclusion information and provides information about the study to the caller. Gate B, conducted in two separate visits (B1 and B2), involved determination of "caseness." Gate B1 included formal presentation of the informed consent agreement, an evaluation of OCD symptomatology, and a clinical interview by a child and adolescent psychiatrist to determine whether the child was an appropriate candidate. Gate B2 included a diagnostic interview and a site team meeting at which all available data was reviewed to establish caseness and suitability for study entry. After completing Gate B assessments, those who already met criteria for partial response (based upon definition below) moved to Gate C for a baseline evaluation with an Independent Evaluator (IE) (all of whom were psychologists with PhD degrees) as well as all parent and child report questionnaires (see Table 1).

Inclusion criteria were: ages 7–17 at time of consent, primary DSM-IV diagnosis of OCD, partial responder to optimized SRI trial, total Child Yale Brown Obsessive Compulsive Scale (CYBOCS) score of 16 or greater (a threshold entry score below which subjects would be excluded in most OCD treatment protocols), and appropriateness for outpatient treatment. Exclusion criteria were: other primary psychiatric disorder, suicidal ideation with intent, Pervasive Developmental Disorder (PDD), Thought Disorder, Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptoccal Infection (PANDAS),[1] mental retardation, concurrent treatment with psychotropic medication, concurrent psychotherapy, previous failed trials of CBT for OCD, and pregnancy.

[1]Current research diagnostic criteria for PANDAS require at least 2 prospectively documented episodes of exacerbations in OCD symptomatology associated with streptococcal infection. To protect against confounding by PANDAS, participants who met research diagnostic criteria for PANDAS and/or who were on an ongoing antibiotic regimen for treatment (or prophylaxis) of OCD, tic symptoms or rheumatic fever were excluded. Once randomized, subjects with group A β-hemolytic streptococcal (GABHS) infections were cared for by their primary care physician as appropriate for the management of GABHS.

To increase generalizability beyond the study, some concurrent treatments were allowed as follows. Concomitant psychotropic medications were allowed as needed for treatment of common comorbidities (for example, ADHD, tics, other anxiety disorders, and sleep problems) following cross-site review by the study psychiatrists. Patients currently receiving supportive psychotherapy, either in individual or family format, also were allowed to continue as long as the following conditions were met: (1) The patient had been in this treatment for 4 months or more; (2) The supportive treatment was at a stable frequency not to exceed once per week; and (3) The treatment did not include cognitive-behavioral therapy for OCD. Prior exposure to CBT treatment was not an exclusion criterion except if the child had received an adequate dose of CBT (defined as at least 10 sessions of CBT that included use of a symptom hierarchy and therapist-assisted exposure/ response prevention).

Identification of Partial Responders—To ensure maximum generalizability, eligible SRI medications were determined by expert recommendations and standard treatment of OCD in the community. Citalopram, escita-lopram, fluoxetine, fluvoxamine, paroxetine, paroxetine-CR, and sertraline were included as eligible SRI medications both because of their common use in treatment of OCD in children and research evidence supporting their efficacy in reducing OCD symptoms [15–19]. Although not typically first-line medication treatments of OCD, clomipramine, venlafaxine, and venlafaxine-XR are prescribed after a patient fails a trial of an SSRI [20–23]. Because this study targeted partial responders of medication who may have been partial responders to multiple medication trials, these medications were also included as allowed SRI medications.

Partial response was defined as: (1) at least 3 weeks of stable OCD symptoms at the maximum recommended SRI dose, (2) adverse side effects as a result of a dosage increase, or (3) a flat dose–response curve for one dose increment above the minimum expected starting dose. A flat dose response curve occurs when an increase in dose produces no additional improvement. In practice, this means that if the next dose increase does not result in a better outcome, the patient had reached maximum medical benefit for that intervention.

Because most patients who respond to a SRI do so at a mean dose considerably lower than the maximum, an aggressive forced titration strategy to raise the dose to the “maximum tolerated therapeutic dose” *independent* of response status was deemed unwarranted clinically, as it could impose an undue experimental and adverse event burden on patients. On the other hand, the possibility of suboptimal dosing could not be discounted since some patients do respond when the dose is raised to the maximum. To balance these imperatives and to minimize unnecessary delay in implementing augmenting treatment, a “within subject” definition of “adequate dose” that includes both dose–response and time-response considerations was implemented.

Patients who had specific circumstances that precluded use of the above medication optimization paradigm received review by a committee of study psychiatrists to determine whether the patient should be considered effectively optimized. This included situations in which the patient had adverse events on another SRI medication and/or parent or physician reluctance or refusal to raise the SRI dose. Such waivers were documented and coded for later consideration in data analysis. It is worth noting that this study was initiated just subsequent to the FDA’s issuance of the “black box” warning for SRI medication and concern of adverse effects at increasingly higher doses of medication increased among parents, pediatricians, and psychiatrists.

Assessment Measures

The baseline evaluation included ratings and assessments by the clinical psychologist and/ or psychiatrist, IE, and self- and parent-report measures (See also Table 1).

Caseness and Comorbidity—Anxiety Disorders Interview Schedule for Children (ADIS-C/P; [24]). The ADIS-C/P is a psychometrically sound, structured diagnostic interview designed to assess DSM-IV childhood anxiety disorders and related mood and behavior disorders [25]. Yale Global Tic Severity Scale (YGTSS, [26]). The YGTSS is a psychometrically sound, semi-structured clinician-administered scale designed to assess for the presence/absence of both motor and vocal tics across five related domains (i.e., number, frequency, intensity, complexity, and interference). Scores range from 0 to 50 for Tics and 0–50 for Overall Interference with higher scores indicating more and/or worse symptoms. Children's Depression Inventory (CDI, [27]). The CDI is a self-report measure of depressive symptomatology. Reliability and concurrent validity are adequate [27]. T scores greater than 65 indicate clinically significant symptoms. Multidimensional Anxiety Scale for Children (MASC, [28, 29]). The MASC is a self-report measure of anxiety symptoms. The MASC has excellent test–retest reliability, internal consistency, and validity and broad-based normative data are available [28, 29]. T scores greater than 65 indicate clinically significant symptoms. Conners' Parent Rating Scale-Revised—Long Version (CPRS-R-L, [30, 31]). The CPRS-R-L is a parent-report measure of attention-deficit/hyperactivity disorder and related problem behaviors. It has excellent test–retest reliability and internal consistency, and normative data are derived from a sample of over 8,000 cases [30, 31]. T scores greater than 60 indicate clinically elevated symptoms.

OCD Treatment History/Demographics/Family Psychopathology—Conners-March Developmental Questionnaire (CMDQ, [32]) was used to inventory age, sex, race; weight and height; SES; verbal, and performance IQ; medical history; treatment history; and obstetrical history. Brief Symptom Inventory (BSI, [33]). The Brief Symptom Inventory (BSI) is a psychometrically sound self-report measure of psychological symptoms for adults. The measure yields global severity scores indicating the total number of symptoms and severity of the distress, as well as nine primary symptom subscales. T Scores greater than 65 indicate clinically significant symptoms.

OCD Symptoms and Severity—Child Yale Brown Obsessive Compulsive Scale (CY-BOCS, [34]). The CY-BOCS is a psychometrically sound 10-item clinician-administered instrument assessing OCD obsessions (scores ranging from 0 to 20), compulsions (scores ranging from 0 to 20), and total (scores ranging from 0 to 40) symptom severity in youth. Scoring is as follows: 0–7 (Subclinical), 8–15 (Mild), 16–23 (Moderate), 24–31 (Extreme). Clinical Global Impression (CGI, [35]). The CGI is used to assess overall clinical improvement based on symptoms observed and impairment reported (7 point scale ranging from 1 (very much improved) to 7 (very much worse)). The clinician rated scale has been used successfully in patients with OCD [36, 37]. NIMH Global OCD Scale (NIMH-OCD, [38]). This is a clinician rated index of illness severity. Each scale is a single-item composite rating ranging from 1 (normal) to 15 (very severe) with good inter-rater reliability. Child OC Impact Scale (COIS-C, COIS-P, [6]). The COIS has child self-report and parent-report versions in which the informant rates the impact that OCD symptoms have on children's psychosocial functioning. Both versions have one total score and three subscales: home, school, and social. Higher scores indicated more OCD-related functional impairment. The COIS has excellent internal consistency and preliminary evidence suggests the measure has adequate concurrent validity [6]. The Total T score is reported here and is normed against a sample of outpatient youth with OCD. Scores in the normal range (T = 50) suggest symptoms comparable to this outpatient sample [39].

Global and Family Functioning—Children's Global Assessment Scale (CGAS, [40]. This rating, based on the Global Assessment of Functioning, rates children on a scale of 1–100 on their functional impairment and distress level. It has been demonstrated to have good

psychometric qualities [41]. Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q; [42]). The PQ-LES-Q is a youth self report that includes 15 items addressing satisfaction with current life. Each item can be scored from 1 (very poor) to 5 (very good). The PQ-LES-Q total score is the sum of the individual scores (possible range 15–75). This instrument has been found to have excellent internal consistency and to be sensitive to change during treatment. Higher scores indicate better quality of life. Family Assessment Measure III—General Scale (FAM-III, [43–45]). The FAM-III is modeled after the Process Model of Family Functioning [46]. The General Scale includes 50 statements about general family relationships and interactions. The scale includes seven subscales and two response-style subscales (Social Desirability and Defensiveness). T-scores were computed for each of the seven clinical subscales and then were averaged to generate an Overall Rating T-score [43] where scores of greater than 65 indicate clinically significant symptoms.

Quality Assurance

To ensure consistent administration of the study interviews and rating scales, the IE was required to audiotape each interview conducted at every study time point. Audiotapes were randomly selected on a monthly basis and reviewed on a cross-site IE reliability call to ensure consistent, standardized administration of the IE battery. A total of 9.6% of the total sample of IE sessions during the acute phase were selected. Additionally, videotapes of the B2 gate assessment from 20% of the sample were randomly selected and reviewed for diagnostic reliability on the ADIS-C/P.

Data Analysis

Descriptive statistics are used to summarize the sample characteristics. Frequencies and percentages are presented for categorical data, whereas the mean, SD, median, and range are used to summarize the continuous variables. In most instances, descriptive statistics are based on $N = 124$, but in the event of missing data, n is the number of cases with data recorded.

Results

Recruitment and Screening

The flow of participants is shown in Fig. 1. Some participants were excluded at a Gate for more than one reason, thus there are more reasons for exclusion than excluded participants at each gate. In total, of the 607 participants screened at Gate A, 124, or 20.4%, were randomized into the study. Primary reasons for study exclusion included: other primary diagnosis, medication not optimized, and not interested in research/did not want to wait for CBT. Primary referral sources across the three sites were: pediatricians, community psychologists and psychiatrists, and clinic websites/local advertising.

Demographic Characteristics

The demographic composition of the sample is as follows: 46.8% male and 53.2% female and 93.5% White, 3.2% Black/African American, 1.6% Hispanic/Latino, 1.6% Asian, 0.8% American Indian or Alaska Native. The mean age was 13.1 (SD = 2.8) years with the majority of the sample (68%) ages 12 or older ($Z_{UN} = 3.86$, $p < .01$). The majority of the participants (79.3%) lived with both biological parents. The majority of parents also had a college degree or higher (61.8% of fathers; 57.7% of mothers) and reported family income greater than $60,000 (70.1%). With regard to pregnancy and birth complications, very few parents reported severe emotional distress (5.1%) or substance use during pregnancy (7.7%).

However, almost one-third of the deliveries were noted to have some type of birth complication (28.8%) and many of the participants were born prematurely (18.8%).

Medication Status/Treatment History

As described earlier, all patients entered the study on a stable dose of an SRI. Table 2 shows the percentage of youth in the sample on each of the accepted SRI medications as well as the mean dose recommended for study entry and the mean dose for study participants. With regard to medication optimization, 21.4% of the sample entered at the maximum dose, 22.2% had a flat dose response curve, and 31.6% of the participants had a dose reduction due to side effects. The remaining 24.8% of youth entered on a "waiver" (i.e., patient had side effects on other SRIs, patient's parents or doctor refused higher dose). Of these waivers (which were not mutually exclusive), 13.3% (n = 16) of patient's parents refused a higher dose of medication, 8.3% (n = 10) of patient's doctor refused a higher dose, 5.6% (n = 7) had side effects on other SRIs, and 1.6% (n = 2) had some other reason for a waiver. It is worth noting that of the 16 participants whose parent(s) refused a higher dose, in four of these cases, the patient's physician also refused to move to a higher dose.

Patients had been taking their SRI for an average of 74.9 (SD 73.2; range 9–403) weeks prior to study entry. The minimum amount of time on the SRI needed to enter the study was 9 weeks, but 34 participants (27.4% of sample) had been taking their SRI for more than 2 years. For 51% of the sample, the medication they were taking at study entry was their first trial of an SRI. However, many participants had one or more past SRI trials. Twenty-nine percent of the sample had tried one other SRI in the past, 8.9% had tried two others in the past, 6.5% had tried three, 2.4% four, and 1.6% had tried five other SRIs prior to study entry.

To make the findings more generalizable, participants were permitted to continue stable doses of some other medications used to treat comorbid conditions[2] (See Table 3). Although 10 sessions or more of OCD-specific CBT including exposure and response prevention (EX/RP) was an exclusion criterion for the study, 63.7% of the patients reported receiving some type of psychotherapy in the past. Of these patients, 24.7% reported having received some form of CBT (although not necessarily specific to OCD).

OCD Symptoms and Severity

By design, all participants met criteria for a primary diagnosis of OCD. The duration of illness ranged from less than a year to 14 years, with a median duration of 5 years. Average age of onset of OCD symptoms as reported by parents on the CMDQ was 7.33 years (SD 3.52) with a range of less than 1–16 years[3].

The mean CYBOCS score was 26.3 (SD 5.1) indicating severe OCD symptoms. The CGI-S indicated that a large portion (67.7%) of the sample fell in the "markedly," "severely," or "most extremely" ill range of the scale. The mean NIMH Global OCD score was 9.6 (SD: 1.8) which describes OCD interference as falling between "significant" and "crippling. In terms of the impact of OCD symptoms on child functioning based on COIS, both child and parent report suggest interference in functioning (COIS-P T = 53.2; COIS-C T = 49.5; see Table 5). This result is comparable to an outpatient sample of youth with OCD [39].

[2]The category of ADHD meds included stimulants and Atomoxetine. Use of other antidepressants included trazodone, imipramine, and mirazapine. Anticonvulsants included carbamazepine, tigabine, topiramate, oxcarbazepine, divalproex sodium, and pimozide. Examples of other permitted medications not mentioned above were for asthma (e.g., abuterol, fluticasone), allergies (e.g., cetirizine, loratadine) or sleep (e.g., eszopiclone, zolpidem).

[3]It is important to clarify that this was based solely on parent report. We did not utilize a clinician administered interview to assess age of onset of first OCD symptoms.

Psychiatric Comorbidity

Sixty percent of the sample had one or more comorbid diagnosis with the highest rates for Social Phobia and ADHD, followed by Tic Disorders (see Table 4). In all participants with a comorbid diagnosis, OCD was determined to be the primary illness and the other disorder(s) considered secondary. If the secondary condition required immediate attention, the child was not allowed to participate in the study. In general, comorbid internalizing disorders (44.4% of sample) were more common than externalizing disorders (21.8% of sample).

Self- and parent- report measures were also used to assess comorbidity. Notably, youth self-report of both anxiety and depression were in the non-clinical range (MASC Total T = 50.1; CDI Total T = 52.1). In contrast, the parent reported CPRS was clinically elevated for many subscales (CPRS Global Index T Score = 64.8, Cognitive Problems T Score = 62.7, Perfectionism T Score = 67.8, ADHD Index T Score = 65.1 and DSM-IV Inattentive T Score = 64.1).

Global and Family Functioning

Both clinician-rated and self-report measures were used to assess global functioning. The mean score on the CGAS was 52.7 (SD = 10.2). With regard to self reported quality of life on the PQ-LES-Q, youth reported that their quality of life was “fair” (mean of 51.3 (SD = 9.4). Parent report on the FAM-III suggested significant impairment across multiple domains (FAM Overall T = 76) (see Table 5).

Family History/Parental Psychopathology

As seen in Table 5, 40.2% of the sample had a family history (1st or 2nd degree relative) with OCD, 36.8% a family history of other anxiety disorders, 13.7% a family history of a Tic Disorder diagnosis, and 47% a family history of a depressive disorder. Parent psychopathology, on average, was non clinical levels across all subscales of the BSI.

Discussion

The data presented in this report detail the characteristics of a large sample of youth with primary OCD who were partial responders to an adequate trial of an SRI. In addition to providing a unique opportunity to further understand the phenomenology of OCD in partial responders, these study results allow the following questions to be posed: (1) to what extent do the participants bear resemblance to youth with OCD seen in clinical practice? and (2) what is the generalizability of this sample to other large samples of youth with OCD?

In many ways, the characteristics of the sample are not surprising given the fact that they entered the study as partial responders to prior medication treatment. Participants tended to be adolescents (ages 12 and over), predominantly Caucasian and middle- to upper-income, and were receiving SRI doses consistent with the expert consensus recommendations. This reflects their status as a group of youth with adequate access to mental health services that had already received a significant amount of past treatment, yet remained symptomatic.

The gender breakdown of the sample deserves attention in that it was fairly evenly divided between males (46.8%) and females (53.2%). The pediatric OCD literature is somewhat split on the issue of gender. Many studies of treatment seeking patients have found a similarly even representation of males and females (e.g., [8, 47, 48]) while others have reported that males and females may be affected by OCD at a ratio of 3:2 prior to age 18 (e.g., [49, 50]). One way this sample is different is that they are partial responders. Therefore, it is also possible that the more even gender split could be attributable to differential response to medication or the fact that the sample was primarily in the older end of the study age range.

Those studies that have found more even gender splits have also been treatment trials rather than epidemiological studies. However, it is also possible that those studies that have found a higher male to female ratio have been skewed by high rates of comorbid externalizing disorders which also tend to be more prevalent in males [51, 52].

Baseline OCD levels for the sample (mean CYBOCS = 26.3) suggested severe symptoms even after having reported a partial response to an adequate medication trial. The pharmacotherapy literature indicates that a six point drop on the CYBOCS can be expected after treatment with commonly used SRI medications [53, 54]. However, it is unclear where this sample fits in reference to a "typical" responder sample. It is indeed possible that the current sample may have been especially severe prior to the initiation of their SRI trial prior to study entry and therefore experienced a typical (i.e., 6 point) drop in their CYBOCS score and continued to have serious OCD symptoms. Alternatively, this partial responder sample may have had only a small response to SRI medication (including multiple trials of SRIs) and that is what makes them different from more typical youth with OCD who receive greater benefit from an initial medication trial (or what makes this community medicated sample different from youth in a more controlled medication trial). Most likely this sample represents a wide variety of youth ranging from those who had a very minimal medication response to their SRI to those who are extremely ill and for whom even a significant medication response would still leave them with severe OCD symptoms.

The sample had notably high ratings of OCD-related global impairment (CGI-S and NIMH-OCD Scale). Comorbidity was common which is particularly notable given the presumed effects of SRIs on comorbid symptoms and disorders, particularly internalizing disorders. Comorbid externalizing diagnoses on the ADIS-C/P were found in one-third of the sample while parent-reported externalizing behavior problems on the CPRS were, on average, elevated and in the clinical range. One reason for this might be that any behavior problems that were tied into OCD and/or better accounted for by OCD were not given separate externalizing diagnoses by the study evaluator, whereas parents may not have made this same distinction.

Finally, family functioning was quite impaired in this sample, although in contrast, parent self-report of mental health symptoms was in the non-clinical range. Based on our own work with these families, this finding may be an under report, as many parents disclosed a mental health history on the CMDQ and in talking with their child's therapists.

Comparison to Other Large OCD Studies

The idea of comparing the baseline characteristics of this partial responder sample to other large OCD treatment studies is appealing and important from the standpoint of establishing the generalizability of this sample to existing large ($N > 40$) samples of youth with OCD. However, such comparisons must be considered carefully. Although we certainly can compare the average severity scores from other large and equally rigorous trials, this may be akin to comparing apples and oranges. The current sample is unique not simply because of their severity, but because it is very different to have moderate to severe OCD symptoms after months if not years of medication treatment than to have the same level of symptoms at one's first contact with a treatment provider. The state of mind for patients and families looking to add another treatment to an underperforming treatment is likely very different than a treatment naïve patient and family initiating a first trial of combined treatment. The naturalistic and wide ranging duration of prior treatment clearly makes this group particularly unique.

In sum, the current sample appears to be fairly representative of the partial responders to SRI medication that one would encounter in clinical practice. The severity of the OCD

symptoms, number of comorbid diagnoses, and associated disability despite optimized medication treatment clearly underscore the need for augmentative treatment in this population. The comparison to other studies is somewhat complicated and one must take into account their partial responder status when considering such comparisons. These youth are both similar and different from other large samples of youth with OCD; we see some similarity in terms of OC symptoms, yet this sample is more severe with regard to more global measures of illness severity.

Study Limitations

The naturalistic and wide ranging duration of prior treatments as well as the number of allowable concurrent medications meant that the study sampling frame emphasized external rather than internal validity. This more flexible approach was intentional, and constitutes a limitation from the standpoint of efficacy research and a strength from the standpoint of effectiveness research. Another significant limitation is the lack of detailed historical information about past treatment response. Although we considered controlling the medication optimization phase of the study (i.e., starting with treatment naïve youth and controlling their medication trial and optimization period), such a design would have been cost prohibitive and would have severely limited the sample from a generalizability standpoint. The fact that approximately 13% of the sample was on a dose of an SRI that their parent(s) or physician refused to increase may also be viewed as a potential limitation. However, we again see this design choice as helpful in recruiting a maximally general-izable sample that included participants who get “stuck” with continued OCD for a variety of reasons despite having had a medication trial. Such parental (as well as physician) anxiety about increasing to maximum doses is a common clinical scenario in the era of the “black box” warning regarding SRI treatment.

A final limitation to the generalizability of our findings pertains directly to the sample’s lack of racial/ethnic diversity. This trend towards low enrollment of ethnic and racial minorities is unfortunately consistent with the extant OCD literature across the developmental spectrum, and persists despite similar prevalence rates reported across different minority groups in multiple, large epidemiological studies [55]. These difficulties were anticipated, and yet despite substantial efforts to improve the recruitment of minority youth including working with minority recruitment consultants, partnering with community agencies and stakeholders, and recruitment at primarily African American and Latino churches, health fairs, and pediatric practices, the sample still fell considerably short in this regard. In addition to problems with the relatively low base rate of OCD as compared to other psychopathology in these community settings, there are also issues of differential barriers for help-seeking (particularly for anxiety) [55], access to evidenced based treatments, particularly psychopharmacological treatment, among disadvantaged youth [55–57], and potential misdiagnosis of minority treatment seekers [58, 59].

Summary

The results presented in this report provide a detailed picture of youth with pediatric OCD who have already demonstrated partial response to SRI medication yet remain symptomatic. The sample is a predominantly older (age 12 and over), Caucasian, and middle to upper income group who had received significant past treatment and entered the study on an adequate dose of SRI medication. Despite psychopharmacological intervention, the youth in this sample had moderate to severe OCD symptoms, high ratings of global impairment, and significant psychiatric comorbidity. The best augmentation strategies for this population of patients with OCD remain a significant clinical and empirical question. By characterizing these youth in such detail, we are poised to consider the next phase of research to better understand and treat this sizable subgroup of youth with OCD.

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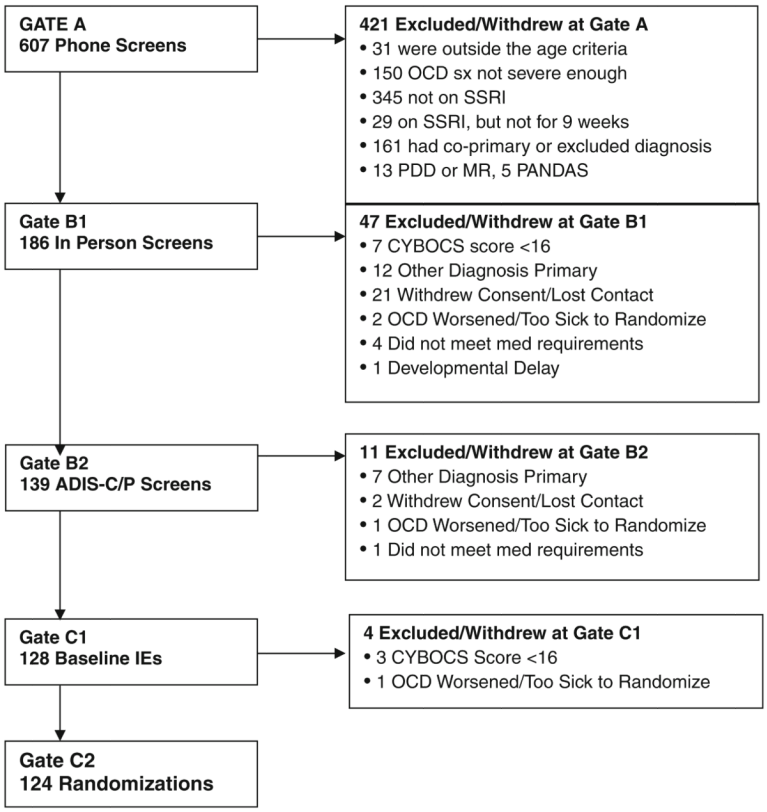

Fig. 1.
Flow of participants through the screening gates

Table 1

Baseline assessment measures

Assessment	Abbreviation	Reference	Construct measured
Clinician administered measures			
Anxiety Disorders Interview Schedule for Children	ADIS-C/P	[24]	Comorbidities
Yale Global Tic Severity Scale	YGTSS	[26]	Tic severity
Child Yale Brown Obsessive Compulsive Scale	CY-BOCS	[34]	OCD severity
Clinical Global Impression	CGI	[35]	Overall impairment
NIMH Global OCD Scale	NIMH-OCD	[38]	Illness severity
Children's Global Assessment Scale	CGAS	[40]	Global impairment
Self report questionnaires—child about self			
Children's Depression Inventory	CDI	[27]	Depressive symptoms
Child Obsessive Compulsive Impact Scale	COIS–C	[6]	Functional impairment
Multidimensional Anxiety Scale for Children	MASC	[28]	Anxiety symptoms
Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire	PQ-LES-Q	[42]	Quality of life
Self-report questionnaires—parent about child			
Conners' Parent Rating Scale—Revised— Long Version	CPRS-R-L	[31]	Child's psychopathology
Child Obsessive Compulsive Impact Scale	COIS–P	[6]	Functional impairment
Conners-March Developmental Questionnaire	CMDQ	[32]	Demographic and developmental information
Self-report questionnaires—parent about self/family			
Brief Symptom Inventory	BSI	[33]	Parental psychopathology
Family Assessment Measure III—General Scale	FAM-III	[43]	Family functioning

Table 2

Serotonin reuptake inhibitor (SRI) medications taken by study participants

Drug	Number of participants	Percent of sample	Mean recommended dose*	Mean actual dose (SD)
Sertraline	40	32.3	125	109.1 (9.2)
Fluoxetine	35	28.2	40	36.4 (2.7)
Fluvoxamine	22	17.7	175	148.3 (17.4)
Citalopram**	13	10.5	40	38.1 (6.3)
Paroxetine	7	5.6	30	34.6 (5.5)
Clomipramine	3	2.4	150	91.7 (8.3)
Escitalopram**	3	2.4	20	18.3 (7.3)
Venalfaxine**	1	0.8	100	100.0

*Mean dose derived from registration trials, expert recommendation and the study team's clinical experience

**Not included in expert consensus guidelines

Table 3

Percentage of patients who entered the study on stable doses of one or more of the allowed concurrent medications

Medication	Number of participants	Percent of sample
ADHD meds	17	13.7
Other antidepressants	3	2.4
Anticonvulsants	4	3.2
Allergy medications	11	8.9
Asthma medications	7	5.6
Other permitted medications	23	18.5

Table 4

Percent of comorbid diagnoses in sample

Diagnosis	Percent of sample
Social phobia	21.8
ADHD any type	21.8
Tic disorder any type	15.3
GAD	14.5
Specific phobia any type	12.1
Separation anxiety	8.9
MDD	6.5
Dysthymia	3.2
Enuresis	3.2
ODD	1.6
PTSD	1.6
Panic disorder w/or w/o agoraphobia	1.6

Table 5

Sample characteristics

Demographics	Mean (SD)
Age of	Years
Child	13.01 (2.76)
Child's gender	Percent
Male	46.8
Female	53.2
Chid's ethnicity	Percent
Not hisp/latino	98.4
Hispanic/latino	1.6
Child's race	Percent
White	93.5
Black/Afr. amer.	3.23
Asian	1.61
American Indian/Alaska native	0.81
Native Hawaiian/Pacific islander	0
Multiple races	0.81%
Family environment	Percent
Living with	
Both bio parents	79.3
One bio parent	17.2
Adoptive parents/other	3.4
Annual family income	Percent
$30,000 and under	6.2
$30,001–$60,000	23.7
$60,001–$100,000	38.6
Over $100,000	31.5
Father's education	Percent
Some college or below	38.2
College degree or above	61.8
Mother's education	Percent
Some college or below	42.3
College degree or above	57.7
School and social functioning	
Parents report that child	Percent
Has no friends	5.9
Has few friends	50.8
Loses friends	8.5
Has trouble making new friends	28.0
	Mean (SD)
Mean number of school problems reported OCD severity	5.2 (4.2)

Demographics	**Mean (SD)**
Clinician ratings	Mean (SD)
Baseline CY-BOCS	26.3 (5.0)
CGI	4.9 (0.9)
NIMH-OCD	9.6 (1.8)
Family mental health history	%
OCD	40.2
Other anxiety	36.8
Any tic disorder	13.7
Depression	47.0
Comorbid disorders	%
Any comorbid disorder	59.7
Externalizing disorders	21.8
Internalizing disorders	44.4
Any other anxiety disorder	41.1
Any tic disorder	15.3
Any ADHD diagnosis	21.8
ODD or conduct disorder	1.6
Any depressive disorder	8.9
Child about self measures	
CDI	T score (SD)
Total T score	52.1 (11.2)
MASC	T score (SD)
Total T score	50.1 (12.7)
COIS—C	score (SD)
Total T score	49.5 (10.2)
Parent about child/family measures	
COIS—P	T score (SD)
Total T score	53.2 (12.6)
CPRSL	T score (SD)
Conners global index T score	64.8(14.4)
FAM	T score (SD)
Overall rating	75.8(7.5)
Parent about self	
BSI	T score (SD)
BSI global T score	39.5(6.7)