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Juvenile-Onset OCD: Clinical Features in Children, Adolescents and Adults

Maria C. Mancebo, Ph.D.[a,b], **Abbe M. Garcia, Ph.D.**[b,c], **Anthony Pinto, Ph.D.**[a,b], **Jennifer B. Freeman, Ph.D.**[b,c], **Amy Przeworski, Ph.D.**[b,c], **Robert Stout, Ph.D.**[b], **Joshua S. Kane, M.D.**[b], **Jane L. Eisen, M.D.**[b], and **Steven A. Rasmussen, M.D.**[a,b]

[a]Butler Hospital, Providence, RI

[b]Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University Providence, RI

[c]Bradley/Hasbro Research Center, Providence, RI

Abstract

Objective—To examine clinical correlates of juvenile-onset OCD across the lifespan.

Method—Intake data collected from 257 consecutive participants with a juvenile-onset of OCD (20 children, 44 adolescents, and 193 adults) in a naturalistic study of the clinical course of OCD were examined. Participants and parents of juvenile participants completed a structured diagnostic interview, rater-administered severity measures, and self-report questionnaires.

Results—Children and adolescents (i.e. juveniles) shared similar features with the exception of age at onset and OCD symptom expression. Clinically meaningful differences between juvenile and adult participants were also found. Compared to adults, juveniles were more likely to be male, recall an earlier age at OCD onset, and have different lifetime comorbidity patterns.

Conclusion—Juvenile-onset OCD symptom expression is remarkably similar across the lifespan. However, findings also suggest clinically meaningful differences between juveniles and adults. Future work using a prospective design will improve our understanding of course patterns of juvenile-onset OCD.

Significant Outcomes—•Children were less likely than either adolescent or adults to report aggressive obsessions and mental rituals.

•Males were overrepresented in the juvenile sample but gender was equally distributed in the adult sample

•Compared to lifetime comorbidity patterns of adults, juveniles showed elevated rates of ADHD and lower rates of mood, substance use and eating disorders

Limitations—•The cross-sectional design with retrospective recall regarding course prior to study entry limits conclusions about the course of OCD.

•The adult sample is limited to adults whose symptoms persisted into adulthood and therefore results cannot be generalized to all individuals with a juvenile-onset.

Corresponding author: Maria C. Mancebo, Ph.D., Butler Hospital, 345 Blackstone Blvd., Providence, RI 02906, USA; tel: 401-455-6216; fax: 401-455-6442; e-mail: Maria_Mancebo@brown.edu..

This work was performed at Butler Hospital and the Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, RI

•The small number of very young children (under age 10) may have limited power to detect differences among children and adolescents.

Keywords

Obsessive-compulsive disorder; age of onset; children; adults; phenomenology

Introduction

Obsessive Compulsive Disorder (OCD) is a relatively common psychiatric disorder affecting children and adults, that can be both debilitating and highly comorbid with other Axis I disorders (1). There is an established literature examining the characteristics and phenomenology of OCD in adults, and a growing number of studies examining this disorder in children and adolescents(2,3). However, few studies have directly compared clinical features across these age groups.

The impact of a juvenile-onset (age 18 or younger) of OCD symptoms is of particular interest to clinicians and researchers. Several findings suggest that juvenile-onset OCD is a meaningful subtype of the disorder with distinct clinical characteristics, patterns of comorbidity, familiality, and course (4,5). Unlike adult samples, juvenile samples are associated with high rates of comorbid disruptive, tic, and developmental disorders (6-9). Retrospective studies of adults with OCD have also found higher rates of tic disorders among those reporting a juvenile-onset than those reporting an adult-onset of OCD symptoms (10-12). Findings from family studies indicate that juvenile-onset OCD is associated with much greater familial risk than adult-onset OCD (4,13).

Gender distributions differ depending on sampling methods. Epidemiologic studies report equal gender distributions in adolescent and adult samples (1,3,14). Clinical samples tend to show an equal gender distribution in adults and elevated proportions of males to females (61% to 69% male) in juvenile samples (6,9,15,16). However, whether the male preponderance among juveniles is clinically significant given the sample sizes remains unclear. Regarding gender differences in age at onset, some retrospective studies of adults have found that males report an earlier age at onset than females (17-19) but others studies have failed to replicate this finding (11,20,21).

Methodological limitations and differences across studies may contribute to these discrepant findings. First, retrospective recall of age-at-onset is less reliable and precise over time (22). Thus, some adults may be better at recalling early symptoms than others. Second, individuals with juvenile-onset OCD in treatment as adults may represent a more chronic sample. Prevalence rates are similar across juvenile and adult epidemiologic samples yet the mean age at onset of adult epidemiological samples ranges from 20 to 25 (23) indicating that adult-onset symptoms are also common. If most individuals with juvenile-onset OCD experienced a chronic course, one would hypothesize that adult epidemiologic samples would show higher prevalence rates as new (adult-onset) cases appear. Findings from a meta-analytic review of treatment studies also suggests that juveniles experience more remissions over long-term follow-up than previous estimates (24). Third, phenomenology of juveniles with OCD has largely been assessed in children and adolescent who have participated in medication trials or small samples (6,25) which limits the generalizability to those seeking treatment in clinical settings.

A direct comparison of symptoms reported by juveniles and adults with a juvenile-onset may help us to better understand the expression of OCD symptoms across the lifespan. For example, which symptoms are consistent across the lifespan and which symptoms are more

likely to develop with age? To our knowledge, only three studies have directly compared juvenile and adult OCD samples. Two of these were limited to small juvenile samples (<40 participants) (26,27). In the third study, Geller and colleagues (2001) compared a large sample of 46 child and 55 adolescent outpatients to published data derived from 560 adult outpatients at a different site (16). Results indicated that children and adolescents shared similar features that were different from those found in adults. The juvenile samples had significantly more males and showed a higher frequency of poor insight, as well as more obsessions and compulsions overall when compared to adults. Distinct developmental differences in comorbid disorders and types of OCD symptoms also emerged. Children had higher lifetime rates of Tourette's and Separation Anxiety Disorder than adolescents or adults. Adults had higher rates of substance use and eating disorders, which were rare in children and adolescents. Regarding symptom subtypes, adolescents had higher rates of sexual and religious obsessions than children, while children and adolescents had more aggressive/catastrophic obsessions and hoarding symptoms compared to adults. A limitation of this study is that adult data were ascertained at a separate site using different recruitment methods and methodology. Thus, differences found between characteristics of juvenile and adult participants may have been influenced by site differences (e.g. referral sources, treatments available) and measurement error (e.g. differences in rater training and reliability).

The Brown Longitudinal Obsessive Compulsive Disorder Study (BLOCS) provides a unique opportunity to investigate OCD across the lifespan. This ongoing project was designed to prospectively study the patterns of course and outcome of OCD in individuals whose primary reason for seeking treatment was OCD. In a previous paper, we described the clinical features of the adult participants and compared adults with juvenile- and adult-onset OCD (20).

Aims of the Study

The aims of the present study are to extend our work by: i) describing the intake characteristics of the 64 juvenile participants (20 children and 44 adolescents) and ii) comparing current OCD symptoms and select lifetime correlates of juvenile participants (n=64) to a subgroup of adults who also reported juvenile-onset OCD (n=193).

Material and Methods

Participants

Participants were enrolled in an ongoing, naturalistic follow-up study of OCD and were recruited between June 2001 and December 2005. Inclusion criteria were: 1) a primary DSM-IV diagnosis of OCD defined as the disorder that participants considered their biggest problem overall across their lifetime; 2) age at least 6 years; 3) treatment-seeking within the past five years; and 4) the participant (and parents of juvenile participants) was willing and able to sign written consent or assent. The only exclusion criterion was the presence of organic mental disorders and mental retardation at intake. Participants were recruited from several clinical settings located in Rhode Island and Southeastern Massachusetts, including consecutive admissions to an outpatient OCD specialty clinic, inpatient admissions to a private psychiatric hospital and several large outpatient sites that were identified as the main treatment sites for individuals with anxiety disorders.

The current report focused on intake characteristics of 64 juveniles with a primary diagnosis of OCD: 20 children (ages 6-12) and 44 adolescents (ages 13-18). A detailed description of the full adult sample was previously published.(20) As a comparison group, we selected a

subgroup of the adult sample (n=193) who reported a juvenile-onset of OCD (ages 19-75, *M*=38.1, *SD*=12.8).

Procedures

The study was approved by the institutional review boards at Brown University and Butler Hospital. All adult participants provided written, informed consent prior to enrollment. Child and adolescent participants provided written assent and a parent completed written consent procedures before enrollment. The Schedule for Affective Disorders and Schizophrenia for School-Age (K-SADS-PL)(28) was administered by a Ph.D. level interviewer with expertise in child/adolescent assessments. All other assessments were conducted by interviewers who had at least a bachelor's degree and completed a rigorous training protocol including didactic seminars (on DSM-IV diagnoses and each of the study instruments), viewing and rating sample tapes, rating several live mock participants, observing and coding actual interviews conducted by a senior rater. More detailed information regarding interviewer training and interrater reliability procedures can be found elsewhere (20).

Assessments consisted of a semi-structured clinical interview, rater-administered measures, and self-report questionnaires. For children, the parent was interviewed first followed by the child. For adolescent participants, the adolescent was interviewed first followed by the parent. At the end of the interview, the rater met with both the participant and the parent and attempted to clarify discrepancies. Raters then prepared a narrative summary report describing psychiatric symptoms and DSM-IV diagnoses and presented each case at weekly research staff meetings. Discrepancies between parent and child report were resolved by expert consensus ratings at these meetings (J.L.E and M.C.M). Prior to data entry, interview data were reviewed by senior staff members for clinical and clerical accuracy.

Measures

A semi-structured rater administered questionnaire was used to collect detailed information on demographic and clinical features of OCD as well as treatment history (29). Socioeconomic status (SES) was estimated using the Hollingshead Occupation Index (30). The Hollingshead Occupational Index scores range from 1 (higher executives/professionals/ business managers) to 7 (homemaker/student), with higher scores indicating a lower household SES.

Structured diagnostic interviews were used to obtain Axis I diagnoses. The K-SADS-PL was used for children ages 6-12. The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-P)(31) was used to assess adolescents and adults. Family history of OCD in first-degree relatives (probable or definite diagnoses) was obtained by asking participants if any of their relatives have/had similar problems and by rephrasing the SCID questions for OCD.

Current OCD symptoms were assessed using the child version of the Yale-Brown Obsessive Compulsive Scale (CY-BOCS) for child/adolescent participants and the original version (Y-BOCS) for adult participants. Both are rater-administered, semi-structured interviews comprised of a checklist of various types of OCD symptoms and a 10-items severity scale. (32-34) The CY-BOCS was slightly modified to include developmentally-appropriate probes and has demonstrated psychometric properties equivalent to those of the original adult version.(34) The CY-BOCS and Y-BOCS severity scales have essentially the same items and anchors. The checklist items are also the same with the exception of a compulsion category (rituals involving other persons) found on the CY-BOCS but not on the Y-BOCS.

Insight into OCD symptoms was assessed in adolescent and adult participants using the Brown Assessment of Beliefs Scale (BABS), (35) a 6-item scale yielding scores from 0

(excellent insight) to 24 (delusional). Insight into OCD for children was not assessed as there are no reliable and valid measures for this age group.

Depression severity was assessed using the Children's Depression Inventory (CDI) (36) for children and the Modified Hamilton Rating Scale for Depression (MHRSD)(37) for adolescents and adults. Overall level of psychopathology and functioning during the worst week of the past month was measured using the Children's Global Assessment Scale (CGAS)(38) for children and adolescents and the Global Assessment of Functioning (GAF) (39) scale for adults. The CGAS and GAF yield global ratings of 0 to 100 with similar anchor points. Lower scores indicate greater severity and impairment in functioning (39).

Data Analysis

Juvenile-onset OCD was defined as the onset of DSM-IV OCD at age 18 or younger. This definition was selected in order to stay consistent with previous studies of adults with a juvenile-onset (18,26) and because 18 is considered to be a threshold for strong familial aggregation of OCD (4,13). Means, standard deviations, percentages, and frequencies were calculated to describe demographic and clinical characteristics of the child and adolescent samples. We compared characteristics of the three age groups in two stages. First, we compared child (n=20) and adolescent (n=44) participants on study variables and found the two groups to have similar demographic or clinical characteristics. Second, we combined children and adolescents into a juvenile group and compared the characteristics of the 64 juvenile participants to the 193 adult participants, with the exception of a priori hypotheses regarding differences in OCD symptom subtypes across the three samples. We decided not to further stratify the adult sample for several reasons: a) there is no empirical basis to suggest that duration of OCD or chronological age of adults affects symptom expression, b) only 3% of adults were older than 60, and limiting the size of the adult sample could reduce the overall power of the study to detect differences among the groups of primary interest. Analyses of OCD severity included only the 184 participants (49 juveniles and 135 adults) who met current (past week) DSM-IV criteria for OCD. OCD symptom categories were analyzed based on *a priori* categories of the Y-BOCS. The *a priori* categories of the YBOCS and CY-BOCS checklist were adjusted according to a method tested by Pinto and colleagues (40,41). Specifically, aggressive obsession items regarding responsibility for harm or fear of a catastrophic event were treated as a separate category, because these symptoms appear phenomenologically distinct from items targeting fear of aggressive impulses (e.g., “I have violent or horrific images in my mind”) and did not correlate with the other aggressive obsessions in two prior item-level factor analyses of adults with OCD (42,43).

Group differences were explored using χ^2 statistics for categorical variables and Fisher's exact test when expected frequencies were small (less than 5 per cell). Analyses of variance (ANOVAs) were used for continuous variables. Pair-wise χ^2 and Tukey's post hoc tests were used to identify significant differences among the three age groups. All analyses were two-tailed. Multiple comparisons across variables were used which may increase the risk of a Type I error across analyses. Therefore, we decided a priori to use a partial α correction with $P < .01$ to determine statistical significance. Although Bonferroni corrections are commonly used to control for Type I error, we elected not to use them with these small group sizes as they are argued to be overly conservative (44).

Results

Sample Characteristics

Participants were predominantly Caucasian (95%, n=244) and almost half were male (49%, n=127). Most child/adolescent participants were living with both biological parents and came from families where both parents were employed. Household socioeconomic status, estimated by averaging the Hollingshead Occupational Index for both parents, ranged from 1 (higher executives/professionals) to 7 (homemaker/student), with a mean of 2.70 (*SD* = 1.3). At time of interview, 40% of adult participants were married and 57% were employed. Most adults were well-educated: 57% had completed a college degree. Lifetime Hollingshead Occupational Indices for adults ranged from 1 to 7, with a mean of 3.4 (*SD*= 2.1). Demographic and clinical characteristics of the juvenile samples are described in Table 1. Children and adolescents shared similar features with the exception of age of onset variables. As expected, children were younger at onset of DSM-IV OCD and had a shorter duration of OCD. Boys and girls did not significantly differ in age of minor OCD symptoms, age at OCD onset or latency to treatment.

Retrospective course of OCD was similar for both age groups. Seventy percent (n=45) of juveniles reported a continuous course of OCD (no periods of partial or full remission), 28% (n=18) reported a waxing and waning course (periods of at least 3 months duration of only subclinical symptoms), and 1 participant reported a deteriorating course (unable to function in most areas of his/her life despite receiving treatment). No juveniles were rated as having an episodic course (full remission for 3 months or more).

Rates of lifetime Axis I comorbidity were high for both children and adolescents (70% of children and 84% of adolescents) and differences were not statistically significant. Similarly, half of children and half of adolescents met current (past month) criteria for at least one other Axis I disorder. There were also no significant differences in comorbidity rates of specific disorders between the two age groups.

Both children and adolescents reported a short latency to treatment. More than 2/3 of the juvenile sample had received at least one SRI trial and 42% (n=27) had received at least 12 sessions of CBT prior to study entry. Children were less likely than adolescents to have received SRIs but did not significantly differ in CBT treatment history.

At the time of assessment, 23% of juveniles (n=15) were in remission (no longer met full DSM-IV criteria for OCD). There were no significant differences between remission rates of children (40%, n=8) and adolescents (16%, n=7). When analyses were limited to the 49 juveniles who were currently in episode for OCD, no significant age differences in symptom severity measures were found. OCD symptom severity, as indicated by mean scores on the CY-BOCS indicated moderate symptoms. Mean total scores on the Children's Depression Inventory (6.0±3.9) and the Modified Hamilton Rating Scale for Depression (4.2±5.4) indicated mild depressive symptoms. Therefore, children and adolescents were combined into one juvenile group for the remaining exploratory analyses, with the exception of apriori hypotheses regarding OCD symptom subtypes.

Juvenile OCD versus Adults with Juvenile-Onset OCD

Significantly more juveniles than adults were male (67% vs 44% respectively, $X^2_{(1)}=10.77$, p=.001). When the gender distributions of each group were examined separately, there was a significant male preponderance among juveniles (67% boys vs 33% girls, $X^2_{(1)}=7.56$, p=.006) but gender distribution was not significantly disproportionate among adults (44% men vs 56% women; $X^2_{(1)}=3.24$, p=.072). Other than age at assessment, there were no significant differences in demographic variables between juvenile and adult participants.

Juveniles and adults were similar in regard to family history of OCD. More than a third of the sample (38% of juveniles and 37% of adults) reported that at least one first-degree relative had probable or definite OCD symptoms: 24% described a parent with OCD and 16% described at least one sibling with OCD.

Juvenile participants recalled minor OCD symptoms at a significantly younger age than adults (*M*=6.6±3.4 years vs. 8.8±3.2 respectively; $F_{(1,238)}$=19.92, p <.001). Juveniles were also younger than adults at onset of DSM-IV OCD (*M*=9.3±3.6 years vs *M*=12.4±3.7years; F(1,255)=33.14, p <.001). There were no significant age differences in retrospective reports of course or rapidity of onset. On average, juveniles received initial treatment for OCD 1.5 years (*SD*=2.1) after onset of symptoms and the mean age at time of initial treatment was 10.8 years (SD=3.3). In contrast, adults received initial treatment for OCD in adulthood (Mean age=27.1±2.1 years and reported significantly longer latency to treatment than juveniles (*M*=14.6±11.8 years, $F_{(1,255)}$=78.40, p<.001).

Lifetime Axis I comorbidity patterns are listed in Table 2. Rates of uncomplicated OCD were similar across age groups. There were no between-group differences in prevalence of tic or anxiety disorders. Significantly more juveniles than adults met lifetime criteria for ADHD. Lifetime rates of mood, substance use, and eating disorders were significantly higher for adults than juveniles.

Current OCD symptom severity (past week) was similar for the 49 juveniles and 164 adults who met full criteria for OCD at time of assessment. Mean CY-BOCS/YBOCS scores for juveniles and adults (20.5±8.5 vs 21.1±8.2) were remarkably similar and indicated moderate OCD symptoms. Insight into OCD symptoms, assessed in adolescents and adults using the BABS total score, was also similar. Adolescents' total scores ranged from excellent (0) to poor (16) with a mean of 7.7±4.0 (good insight). Similarly, adult total scores ranged from excellent (0) to delusional (21) with a mean of 6.1±4.7 (good insight). Half the sample (52% of juveniles and 60% of adults) met DSM-IV criteria for at least one other concurrent Axis I disorder. Mean CGAS scores for juveniles (55.2±14.8) and mean GAF scores for adults (51.1±12.4) reflected moderate-to-severe levels of psychopathology and impaired psychosocial functioning.

OCD Symptom Subtypes in Children, Adolescents and Adults

Type of current obsessions and compulsions reported by children, adolescents, and adults are listed in Table 3. Almost all participants (90%) reported multiple obsessions and compulsions. There was a trend towards children reporting fewer obsession categories than adolescents or adults. The specific types of obsessions and compulsions reported by all three age groups were remarkably similar. Across all three age groups, the most common obsessions were overresponsibility for harm/catastrophic thoughts, contamination and symmetry obsessions. Checking, repeating routine activities (e.g. going in and out of a door), ordering/arranging objects were the most common compulsions across age groups.

Adolescents were more likely than children to report aggressive obsessions but they did not differ significantly from adults. Contrary to our hypotheses, there were no significant age differences in reports of incompleteness or hoarding symptoms. One-quarter (n=60) of the entire sample reported incompleteness symptoms and one-third (n=85) reported hoarding obsessions/compulsions.

Adults were more likely than children or adolescents to report “miscellaneous” obsessions (lucky/unlucky numbers, fear of losing things) but the reverse was true for “miscellaneous” compulsions. As expected, mental rituals were less common in children than adolescents or adults. Tic-like compulsions were similar across age groups. Other common types of

compulsions included a need to tell/ask/confess, excessive game rituals and rituals involving others (e.g. asking family members to partake in rituals).

Discussion

This study is the first to examine current symptoms and lifetime correlates of juvenile-onset OCD in one large well-characterized sample of children, adolescents, and adults with a primary diagnosis of OCD. Unlike previous studies, we limited our adult sample to individuals who reported juvenile-onset OCD, used comparable developmentally-appropriate assessment measures, and recruited participants from diverse treatment settings. Our results largely support and extend findings reported by Geller and colleagues (16), indicating that phenomenology of juvenile-onset OCD is remarkably similar across the lifespan. Regardless of age at presentation, individuals report multiple types of obsessions and compulsions with similar themes. The most common obsessions include responsibility for harm/catastrophic thoughts, contamination obsessions, and symmetry obsessions. The most common compulsions include checking, repeating, and ordering/arranging rituals. More than one-third of children and half of adolescents/adults also reported cleaning/ washing rituals.

Clinical features previously associated with juvenile-onset OCD were consistent across age groups. In the overall sample, 37% had a family history of OCD and patterns of comorbidity were similar across age groups. One-fifth of the sample met lifetime criteria for a tic disorder and half had a concurrent anxiety disorder. In regards to ADHD, more juveniles than adults reported threshold symptoms of ADHD. It is possible that recall bias or cohort effects contributed to lower rates of ADHD among adults. Diagnosing ADHD in adults is controversial as DSM-IV criteria has not been validated in adults and does not include developmentally appropriate symptoms (45). An alternative explanation may be that differences in rates of ADHD may represent differences in perceptions of parents of juveniles and adults participants who may be less likely to perceive impulsive/hyperactive or inattentive symptoms as excessive or pathological.

Consistent with previous reports,(6,9,15,16) males were significantly overrepresented in the juvenile sample but not in the adult sample. Our finding that gender was not associated with age-at-onset of OCD is consistent with at least two reports from juvenile clinical samples (6,46) but contradicts other reports that boys are more likely to have a younger age at OCD onset (6,9).

Children and adolescents shared similar clinical features with the exception of age-at-onset. We expected that children and adolescents would show developmental differences in OCD symptom expression. We found a trend towards fewer obsession categories among children than adolescents or adults. However, whether these findings generalize to very young children with OCD remains unclear. Piaget's formal operational stage of cognitive development, theoretically when abstract thinking develops, usually begins between the ages of 11 through 15 (47). Half of our child sample was between the ages of 11 and 12 and only two participants were younger than 9. More research with younger children is needed as this has been an understudied population (48).

Adolescents were more likely than children to endorse aggressive obsessions and mental rituals. However, unlike previous studies, we did not find elevated rates of religious or sexual obsessions among adolescents. One-quarter of our adolescents reported sexual and/or religious obsessions which is consistent with rates reported by other clinical studies using the CY-BOCS (6,15,49) but lower than the 33% to 41% of adolescents who endorsed these obsessions in two other clinical samples (16,27). Similar reports of incompleteness

symptoms among children, adolescents, and adults suggest that these symptoms may persist into adulthood and are not simply related to an inability to verbalize obsessions. However, the cross-sectional design does not permit conclusions regarding stability of the symptoms over time and prospective data are needed.

Hoarding symptoms were also remarkably similar across the lifespan. One-third of the overall sample reported hoarding symptoms which is consistent with other clinical samples of juvenile and adult OCD (49,50). Types of possessions were also similar. For example, our youngest participant (age 6) felt the need to save any paper that he came across (doodles, drawings, wrappers) and often hid them under his bed so his parents would not throw them away. Older children saved used stickers, school papers, clothing and toy boxes, consistent with reports of adolescents and adults. We failed to replicate findings reported by Geller (16) in which juvenile participants endorsed higher rates of hoarding symptoms. One reason for this may be the low rates of hoarding (18%) among the adult OCD comparison sample used in this study (3).

Age at OCD onset was defined as the age at which OCD symptoms began to cause clinically significant distress or impairment. We did not define onset by age at which minor OCD symptoms were first experienced because of the high prevalence of subclinical OCD symptoms in the general population that do not develop into clinical symptoms. Further, the mean age of minor OCD symptoms in the overall adult sample was 12.36±8.2 years indicating that most adults experienced minor OCD symptoms before the age of 18 (20). Thus, the In a previous report of our adult sample (20), we found that adults with a juvenile-onset of OCD were younger at time of assessment than adult-onset OCD and were more likely to have a first-degree relative with a probable diagnosis of OCD. Adults with juvenile-onset OCD also reported higher rates of (current) aggressive and religious obsessions as well as repeating and miscellaneous compulsions. However, in our overall adult sample, juvenile-onset OCD was associated with higher rates of panic disorder, eating disorders, and Obsessive Compulsive Personality Disorder than adult-onset OCD. As juveniles have not yet had time to develop these disorders, it is unclear whether these comorbidities are associated with persistence of OCD symptoms into adulthood. The fact that we found more similarities than differences between juveniles and adults with juvenile-onset OCD supports the hypothesis that juvenile-onset OCD is a subtype of the disorder.

Results should be interpreted within the context of the study limitations. The cross-sectional design with retrospective recall regarding course prior to study entry limits conclusions about the course of OCD. Duration of OCD was obviously longer for adults than juveniles and retrospective reports may have been affected by recall bias (e.g. earlier onset of minor OCD symptoms). Although, we made an effort to minimize recall bias by comparing only *current* OCD symptoms, recall of onset (especially minor OCD symptoms) and past comorbid diagnoses may have been unreliable. Nonetheless, we found more similarities than differences between reports of adults and juveniles. Further, the adult sample is limited to adults whose symptoms persisted into adulthood and therefore results cannot be generalized to all individuals with a juvenile-onset. Studies of adults have supported the hypothesis that OCD is a chronic lifelong disorder but juvenile studies have found a high percentage of patients with an episodic course. We are currently collecting prospective data that will allow us to determine whether certain children have an episodic course or recover completely and what predictors are associated with these distinct course patters. Also, fewer children than adolescents or adults had received SRI treatments which may have impacted severity ratings. Finally, the small number of children may have limited power to detect differences among children and adolescents. Future research examining phenomenology of very young children and/or the impact of a prepubertal onset is needed.

Strengths of our study include a well-characterized sample of individuals, assessed at a single site under the same protocol, and whose primary reason for seeking clinical treatment was OCD. We believe that our data, although cross-sectional, has clinical significance and important research implications. When OCD symptoms persist into adulthood, symptom patterns appear similar across the lifespan but some symptoms may change or develop over time. Aggressive obsessions were similar in adolescents and adults but less frequently reported in children. Very few children, a third of adolescents and 42% of adults reported mental rituals suggesting that these compulsions may develop as individuals get older. Finally, retrospective reports of course suggest that an episodic course is rare. Future work, using a prospective design, will clarify the course patters of juvenile-onset OCD.

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Table 1

Demographic and Clinical Characteristics of Child and Adolescent Participants (N = 64)

	Children (n=20)	Adolescents (n=44)	Statistic		
Characteristic	**N (%)**	**N (%)**	**X^2**	**df**	**P**
Sex, male	13 (65.0)	30 (68.2)	.802	1	.802
Race/ethnicity, White/non-Hispanic	17 (85.0)	40 (90.9)	*	*	.668
Sudden onset of OCD	5 (25.0)	2 (4.5)	*	*	.026
	Mean (SD)	**Mean (SD)**	**F-value**	**df**	**P**
Age at assessment	10.2 (1.8)	15.4 (1.6)	129.64	62	<.001[a]
Age first experienced minor symptoms, yrs	5.1 (2.4)	7.3 (3.6)	6.35	58[b]	.015
Age of onset of OCD, yrs	7.3 (2.7)	10.3 (3.6)	11.06	62	.001[a]
Duration of illness, yrs	3.0 (2.3)	5.2 (3.2)	7.50	62	.008[a]
Treatment History:			**Statistic**	**df**	**P**
Age first received treatment, yrs, Mn (SD)	8.7 (2.0)	11.7 (3.4)	13.21	62	.001[a]
Years between onset and initial treatment, Mn (SD)	1.5 (2.1)	1.5 (2.1)	0.00	62	.968
Received at least one SRI trial, n (%)	9 (45.0)	35 (79.5)	7.64	1	.006[a]
Number of SRI trials, Mn (SD)	0.7 (0.9)	1.8 (1.5)	9.40	62	.003[a]
Received CBT, n (%)	11 (55.0)	31 (70.5)	1.46	1	.228
Received 12 CBT sessions or more, n (%)	8 (40.0)	19 (43.2)	0.57	1	.811
Current symptom severity (possible range): [c]	**Mean (SD)**	**Mean (SD)**	**F-value**	**df**	**P**
CY-BOCS (0-40)	21.8 (4.0)	24.5 (6.8)	1.809	47	.185
CY-BOCS obsessions (0-20)	10.9 (2.2)	12.0 (3.8)	0.796	47	.377
CY-BOCS compulsions (0-20)	10.8 (2.6)	12.6 (3.3)	2.807	47	.100
MASC (0-117)	48.2 (15.8)	48.3 (18.0)	0.000	47	.987
CGAS (0-100)	52.5 (7.3)	49.3 (13.0)	0.641	47	.427
Children's Depression Inventory (0-54)	6.0 (3.9)	n/a	---	---	---
Modified HAM-D (0-72)	n/a	4.2 (5.4)	---	---	---

Note. C-YBOCS = Children's Yale-Brown Obsessive Compulsive Scale; MASC = Multidimensional Anxiety Scale for Children; CGAS= Children's Global Assessment Scale; GAF=Global Assessment of Functioning; ns=not significant

[*] fisher's exact test

[a] Significance between children and adolescents ($p < .01$).

[b] 4 participants and their parents could not recall minor symptoms.

[c] Analyses of current symptom severity measures were restricted to participants currently in episode (n=49).

Table 2

Lifetime Comorbidity Patterns of Juvenile and Adult Participants (N=257)

DSM-IV Diagnosis	Juvenile (n=64)	Adults (n=193)			
	N (%)	N (%)	X^2	Df	P
OCD only	13 (20.3)	20 (10.4)	4.25	1	.039
Any Mood Disorder[a]	27 (42.2)	138 (71.5)	17.97	1	<.001
Major Depression	26 (40.6)	127 (65.8)	12.65	1	<.001
Psychotic Disorder[b]	2 (3.1)	6 (3.1)	*		1.00
Any Anxiety Disorder[a]	32 (50.0)	115 (59.6)	1.80	1	.179
Panic Disorder	2 (3.2)	41 (21.2)	11.10	1	.001
Social Phobia	11 (17.2)	59 (30.6)	4.34	1	.037
Separation Anxiety Disorder	15 (23.4)	24 (12.8)	4.09	1	.043
Any Substance Use Disorder[a]	0 (0.0)	53 (27.5)	12.6	1	.001
Any Eating Disorder[a]	1 (1.6)	26 (13.5)	7.25	1	.007
Any Somatoform Disorder	3 (4.7)	22 (11.4)	2.47	1	.116
Any Tic Disorder[b] (DSM-IIIR or IV)	19 (29.7)	34 (17.6)	4.28	1	.039
Any Impulse Control Disorder[c]	13 (20.3)	42 (21.8)	0.06	1	.806
Attention Deficit Hyperactivity Disorder	16 (25.0)	18 (9.6)	9.73	1	.002

[a]The total is less than the sum of the individual disorders because some subjects had more than one disorder in a given category.

[b]Includes Psychosis NOS for 2 adolescents and 4 adults.

[b]Includes Tourette Disorder (DSM-IV), Tourette Disorder (DSM-III-R), Chronic Motor or Vocal Tic Disorder (DSM-IV), Chronic Motor or Vocal Tic Disorder (DSM-III-R), Transient Tic Disorder (DSM-IV), Transient Tic Disorder (DSM-III-R), and Tic Disorder NOS.

[c]Includes Nail Biting, Skin Picking, Trichotillomania, Pathological Gambling, Pyromania, and Kleptomania

Table 3

Frequency of Current Obsessions or Compulsions

	Children (n=20)	Adolescents (n=44)	Adults (n=193)		
Number of symptom categories (possible range):	**M(SD)**	**M(SD)**	**M(SD)**	**$F_{(2,254)}$**	**P**
Obsessions (0-9)	2.3 (1.7)	3.6 (1.7)	4.0 (1.9)	3.39	.035
Compulsions (0-8)	3.6 (1.5)	3.5 (1.4)	3.7 (1.8)	0.59	.554
Obsessions	**N (%)**	**N (%)**	**N (%)**	**$\chi^{2}_{(2)}$**	**P**
Aggressive	3 (15.0)	21 (47.7)	98 (50.8)	9.30	.010[a,c]
Overresponsibility for Harm/Catastrophic thoughts	9 (45.0)	26 (59.1)	117 (60.6)	1.83	.400
Contamination	11 (55.0)	30 (68.2)	115 (59.6)	1.41	.495
Sexual	1 (5.0)	11 (25.0)	33 (17.1)	3.90	.142
Hoarding	8 (40.0)	12 (27.3)	65 (33.7)	1.13	.567
Religious	4 (20.0)	12 (27.3)	64 (33.2)	1.83	.400
Symmetry	13 (65.0)	26 (59.1)	97 (50.3)	2.39	.302
Somatic	5 (25.0)	8 (18.2)	59 (30.6)	2.83	.244
Miscellaneous (most common)	5 (25.0)	13 (29.5)	102 (52.8)	27.87	<.001[b,c]
Superstitious/magical thoughts[d]	5 (25.0)	7 (15.9)	65 (33.7)	5.64	.059
Fear of losing things	3 (15.0)	9 (20.5)	48 (24.9)	*	.549
Compulsions					
Cleaning/Washing	7 (35.0)	24 (54.5)	120 (62.2)	5.91	.052
Checking	14 (70.0)	26 (59.1)	144 (74.6)	4.27	.118
Repeating Routine Activities	13 (65.0)	26 (59.1)	121 (62.7)	0.27	.875
Counting	2 (10.0)	5 (11.4)	55 (28.5)	0.18	.017
Ordering/Arranging	12 (60.0)	26 (59.1)	88 (45.6)	3.66	.161
Hoarding	8 (40.0)	9 (20.5)	63 (32.6)	3.28	.194
Incompleteness[e]	9 (45.0)	11 (26.8)	40 (22.0)	5.26	.072
Miscellaneous Compulsions (most common)	18 (90.0)	40 (90.9)	132 (68.4)	12.33[d]	.002[b,c]
Rituals involving other persons	8 (40.0)	24 (54.5)	NA	1.16[f]	.281
Tic-like compulsions [g]	6 (30.0)	11 (25.0)	36 (18.7)	*	.359
Need to tell, ask, confess	3 (15.8)	19 (44.2)	59 (30.6)	6.51	.039

Acta Psychiatr Scand. Author manuscript; available in PMC 2009 August 1.

	Children (n=20)	Adolescents (n=44)	Adults (n=193)		
Mental rituals	2 (10.0)	15 (34.1)	82 (42.5)	8.52	.014[a,b]
Superstitious behaviors/games	2 (10.0)	7 (16.3)	25 (13.0)	*	.791

Note: NA= Not asked. Magical thoughts, excessive games, and rituals involving people are items on the children's version but do not appear on the original Y-BOCS Checklist.

[*] Fisher's exact test (for two groups) or contingency coefficient (for 3 groups)

[a] Significant difference between children and adolescents (p <.01).

[b] Significance difference between adolescents and adults (p <.01).

[c] Significant difference between children and adults (p <.01).

[d] Superstitious/magical thoughts include obsessions regarding lucky/unlucky numbers, colors or words

[e] Defined as having to complete rituals “until it feels right” with no feared consequence. Sample size for adult group is 182 because item was added after the start of the study.

[f] Rituals involving others persons not asked on the YBOCS, df=1

[g] Tic-like compulsions include rituals involving touching, tapping, rubbing, blinking, or staring.