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Original Research

Clinical Features, Psychiatric Comorbidities and Treatments in Childhood Obsessive Compulsive Disorder in terms of Symptom Severity, Gender and Age

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ABSTRACT

Objective: The aim of this study was to investigate the clinical features, psychiatric comorbidities, and treatments of childhood obsessive-compulsive disorder (OCD), with consideration given to OCD severity, gender and age.

Method: The study included 104 children and adolescents between the ages of 6 and 17 who were diagnosed with OCD and followed up in Child and Adolescent Psychiatry outpatient clinics between 2016 and 2023. The study examined the sociodemographic characteristics, clinical features, comorbid psychiatric disorders, and treatment approaches of children and adolescents with OCD.

Results: The sample had a mean age of 13.1 ± 2.7 years, and the mean age at onset of OCD was 11.9 ± 2.7 years (range: 5-17 years). Those with mild OCD had a significantly lower mean age at presentation and onset of OCD compared to those with moderate and severe OCD (p=0.012, p=0.02, respectively). Patients with severe OCD had longer illness duration (p=0.009) and outpatient follow-up (p=0.004) compared to those with moderate OCD. Boys had significantly higher rates of family history of psychiatric disorders (p=0.006), attention-deficit/hyperactivity disorder/oppositional defiant disorder (p=0.003), and tic disorder (p=0.035) comorbidity rates than girls, while girls had higher rates of anxiety disorders (p=0.022) comorbidity. The study found that repeating and counting compulsions were more common in adolescents than in preadolescents (p=0.003, all).

Conclusion: These results suggest that clinical presentation and comorbidity may vary with disease severity, gender and age, in children and adolescents with OCD. Early intervention is crucial to prevent clinical progression, worsening, and mental health sequelae.

Keywords: child, adolescent, obsessive-compulsive disorder, comorbidity, psychopharmacotherapy, gender, age

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a neuropsychiatric condition accompanied by obsessions and/or compulsions [1]. According to Diagnostic and Statistical Manual of Mental Disorders 5th ed. (DSM-5), obsessions are defined as 'recurrent and persistent thoughts, urges, or images', and compulsions as 'repetitive behaviors or mental acts'. There is a mutual relationship between obsessions and compulsions that causes significant distress, impairment, or excessive time consumption. Irrational or excessive compulsions are some other thought images, or impulses/urges that are felt to be necessary in response to obsessions and have been reported to function to ignore, suppress, or neutralize obsessions [2, 3].

The prevalence rates of OCD range from 2% to 4% [4]. The incidence of OCD has a bimodal distribution, with onset occurring between the ages of 9 and 10 and in the early 20s [1, 5]. While OCD is more prevalent in males during childhood, this pattern reverses during adolescence and adulthood, with females exhibiting a higher prevalence of OCD. Additionally, the age at which OCD first manifests is earlier in males than in females [1].

Although the etiology of OCD remains poorly understood, mounting evidence suggests that both genetic and environmental factors may influence its development, like that observed in other psychiatric conditions [1]. OCD is hereditary, with genetic influences accounting for 45% to 65% of childhood OCD symptoms [6]. Childhood OCD has been associated with a higher familial and genetic risk, as suggested by several studies [7, 8]. The rate of at least one other comorbid condition in children with OCD is high, ranging from 56% to 64% [9, 10]. Anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), major depressive disorder (MDD), behavioral disorders, and tic disorders are frequent [1, 9, 11].

Exposure and response prevention, as well as appropriate cognitive-behavioral therapy (CBT/ERP), are generally reported as the most effective and first-line treatments for childhood OCD. However, psychopharmacotherapy is used in children who do not respond to CBT or cannot access it reliably [1, 12]. The leading treatments include monotherapy with Selective Serotonin Reuptake Inhibitors (SSRIs), a potentiation strategy with low doses of neuroleptics, and behavioral and pharmacotherapy approaches for comorbidities [1, 12, 13].

OCD is among the ten most prevalent causes of disability globally and represents the fourth most common psychiatric disorder, according to the World Health Organization's (WHO) findings. Therefore, it is necessary to improve public awareness and optimize assessment and treatment to reduce the societal burden of OCD worldwide [14]. Despite its high prevalence, chronicization rate, and severe negative consequences, delays in diagnosis and inadequate treatment are known issues [15]. Childhood OCD can become chronic or progress with relapses and recurrences, causing psychosocial deterioration for many years if not treated effectively. Therefore, early intervention and adequate treatment by specialists are crucial [1, 16].

Despite numerous studies, no definitive conclusions have been reached regarding differences in OCD based on age and gender. It is crucial to disseminate epidemiological data, clinical manifestations, treatment modalities, and follow-up experiences in childhood OCD in order to enhance our understanding of this complex and debilitating condition. The objective of this study is to examine the sociodemographic and clinical characteristics, psychiatric comorbidities, treatment options, and clinical differences among children and adolescents diagnosed with OCD, with particular attention to the impact of the severity of the disorder, gender, and age.

Main Points

- Obsessive-compulsive disorder (OCD) is a psychiatric disorder that usually begins in childhood and in which obsessions and compulsions can cause significant functional impairment.
- Childhood OCD is often associated with other psychiatric comorbidities and has a high potential for chronicity and worsening.
- As there are different findings in the literature regarding the aspects of OCD that differ by gender and age, the dissemination of epidemiological data, clinical symptoms, treatment methods and follow-up experiences regarding OCD in childhood is crucial to improve our understanding of this disorder.
- The results of the study suggest that clinical presentation and comorbidity in children and adolescents with OCD may vary with severity of illness, gender and age, and that early intervention is important to prevent clinical progression, exacerbation and mental health sequelae.

MATERIALS AND METHODS

This retrospective study was approved by the local ethics committee (Date: 26.04.2022, session no: 2022/14, Decision no: 11). Study included 104 children and adolescents aged 6-17 years diagnosed with OCD according to DSM-5 criteria. Data from a university hospital Child and Adolescent Psychiatry outpatient clinics between 2016-2023 were used. The study analyzed sociodemographic characteristics, family psychiatric history, clinical features of OCD, duration of the disorder, triggering factors, comorbid psychiatric disorders, and treatment approaches for OCD. The data were obtained from the patient's medical records, which contained precise data and Clinical Global Impression (CGI) scales. The clinician initially evaluated the CGI scales in the patients' files and then again after a period of at least six months, during which time the patients had undergone active treatment. This was done in order to determine the severity of the disease and the efficacy of the treatment. This was achieved by utilising the Clinical Global Impression-Severity (CGI-S) sub-scale and the Clinical Global Impression-Improvement (CGI-I) sub-scale, respectively. The study excluded patients with missing data and children diagnosed with mental retardation or Autism Spectrum Disorder (ASD).

Clinical Global Impression (CGI) Scale

The CGI is a seven-point clinician-rated scale that assesses disease severity and therapeutic effectiveness. Lower scores on the CGI-S indicate less severe disease, while a score of seven indicates extreme illness. The CGI-I subscale is employed to assess the efficacy of treatment based on the observed improvement. A score of one indicates a markedly improved outcome, while a score of seven signifies a markedly worsened outcome [17]. The severity of OCD is defined by a cut-off score of three, four, and five, respectively, on CGI-S subscale. The following classifications describe the severity: mild, moderate, and severe. In accordance with the CGI-I subscale, a positive response to treatment was defined by a score of 1 or 2, a partial response was indicated by a score of 3, and resistance to treatment was identified by a score of 4 or above.

Statistical Analysis

The analyses were conducted using SPSS (Statistical Package for Social Sciences; SPSS Inc., Chicago, IL) 22 software. Descriptive data are presented as n and % values for categorical data, and mean ± standard deviation and median (min-max) values for continuous data. To compare categorical variables between groups, we used the Chi-square analysis (Pearson Chi-square). We assessed the conformity of continuous variables to normal distribution using the Kolmogorov-Smirnov Test. Non-parametric mean comparisons were conducted within each of the two samples. These comparisons involved the Kruskal-Wallis tests for overall differences, followed by the Mann-Whitney tests for specific group comparisons. The level of statistical significance for the analyses was set at a p value of less than 0.05.

RESULTS

Sociodemographic Characteristics of the Sample

A total of 104 children and adolescents were included in the study. Of these, 58 (55.8%) were girl, with a mean age at presentation of 13.1±2.7 years (range: 6-17 years). The patients were classified into two age-based categories: preadolescents (ages 6-11) and adolescents (12-17). Of the sample, 39 (37.5%) individuals were in the preadolescent group, while 65 adolescents constituted 62.5% of the sample. Twenty-four children (23.1%), exhibited a positive family history of OCD. Additionally, 35 (33.7%) children had a history of psychiatric illness. Table 1 provides the sociodemographic characteristics of the children and adolescents.

Clinical Features of OCD

The mean age at which the onset of OCD occurred was 11.9 ±2.7 years (range: 5-17 years) and the mean duration of illness was 2.1 ±1.5 years. The time without treatment before applying to the outpatient clinic was 13.67±10.84 months. The mean duration of outpatient follow-up was 12±13.7 months (range: 6-75 months). The data indicates that 79.8% (n=83) of patients exhibited persistent OCD symptoms for at least one year, while 43.3% (n=45) exhibited persistent symptoms for at least two years. Of the patients, 5.8% (n=6) had mild severity, 24% (n=25) had moderate severity, and 70.2% (n=73) had severe severity. Moreover, 24% (n=25) of the patients had at least one precipitating factor.

Obsessions were not reported in 6.7% (n:7) of the patients, while compulsions were not reported in 4.8% (n:5). Furthermore, 32.7% (n:34) of the children reported more than one obsession, and 51.9% (n:54) reported more than one compulsion. The study found that the three most commonly reported types of obsessions were contamination (62.5%, n: 65), religious (30.8%, n: 32), and sexual (14.4%, n: 15). The three most commonly reported types of compulsions were cleaning/washing (57.7%, n: 60), repeating (51.9%, n: 54), and checking (26.9%, n: 28). Table 2 also presents the clinical features of OCD in children and adolescents.

Table 1. Sociodemographic characteristics of the sample

Variables	Number (n)	Percentage (%)
Gender		
Male	46	44.2
Female	58	55.8
Age groups		
Preadolescent child	39	37.5
Adolescent	65	62.5
Place of residence		
Urban	89	85.6
Rural	15	14.4
Mother's education		
Only literate	2	1.9
Primary school	34	32.7
Secondary school	28	26.9
High school	19	18.3
University degree	21	20.2
Father's education		
Only literate	0	0
Primary school	7	6.7
Secondary school	31	29.8
High school	25	24.0
University degree	42	39.5
Family income level†		
Low	31	29.8
High	73	70.2
Family type		
Nuclear	98	94.2
Single-parent	2	1.9
Extended	2	1.9
Adoptive child	2	1.9
Family history of OCD		
Yes	24	23.1
No	80	76.9
Family history of psychiatric disorder		
Yes	35	33.7
No	69	66.3
Family Psychiatric history		
OCD	24	23.1
Anxiety disorder	10	9.6
Depressive disorder	1	1
Bipolar disorder	4	3.8

†The level of income was determined by the minimum wage value on the date of the study.

Table 2. Clinical features of obsessive-compulsive disorder in the sample

	Number (n)	Percentage (%)
Duration of OCD		
<12 months	21	20.2
12-24 months	38	36.5
24-36 months	23	22.1
≥36 months	22	21.2
Severity of OCD		
Mild	6	5.8
Moderate	25	24
Severe	73	70.2
Presence of precipitating factor(s)		
Yes	25	24
No	79	76
Type of precipitating factor(s)		
Parent/sibling(s) relationship problems	9	8,7
Peer/social relationship problems	7	6,7
Abuse	3	2,9
Covid-19 infection	3	2,9
Loss and grief	2	1,9
Exam/success anxiety	1	1,0
Obsession type		
No	7	6.7
Contamination	65	62.5
Religious	32	30.8
Sexual	15	14.4
Magical thinking	8	7.7
Somatic	8	7.7
Aggressive	5	4.8
Hoarding/saving	5	4.8
Compulsion type		
No	5	4.8
Cleaning/washing	60	57.7
Repeating	54	51.9
Checking	28	26.9
Counting	17	16.3
Ordering/arranging	15	14.4
Superstition	5	4.8
Hoarding/collecting	4	3.8

Comorbid Psychiatric Disorders and Treatment Approaches for OCD

Out of the sample of children, 58.7% (n: 61) had no other comorbid disorder, while 41.3% (n: 43) had one or more comorbid psychiatric disorders. The three most common comorbid disorders were anxiety disorders (28.8%), ADHD and/or Oppositional Defiant Disorder (ODD) (25%), and depressive disorder (11.5%).

Upon examination of the pharmacological treatment by children received in the 6th month after application, it was determined that 91.3% (n=95) of the study group utilized at least one pharmacotherapeutic agent in conjunction with psychoeducational and behavioral interventions for OCD. The remaining 8.7% (n=9) did not use any pharmacological agent. Table 3 presents the comorbid psychiatric disorders associated with OCD and the corresponding therapeutic approaches.

Variables According to the Severity of OCD

The study found that patients with mild OCD had a significantly lower mean age at presentation and onset compared to those with moderate and severe OCD (p=0.012, p=0.02, respectively). Moreover, patients with severe OCD had a longer duration of illness (p=0.009) and outpatient follow-up (p=0.004) compared to those with moderate OCD. No statistically significant relationship was observed between the time interval without treatment and disease severity (p = 0.29). (data not shown in table).

No significant relationship was found between a family history of OCD, a family history of psychiatric illness, the existence of precipitating factors, the presence of comorbid psychiatric diagnosis, the presence of multiple comorbid diagnoses, types of obsessions and compulsions, and OCD severity (p>0.05). Table 4 provides information on the sociodemographic variables and clinical characteristics that affect OCD severity.

Comparisons Between Genders and Age Groups

No significant difference was found between genders in terms of age group distribution, place of residence, income level, family structure, or family history of OCD (all p values>0.05). Although there was no significant difference between genders in terms of family history of OCD (p>0.05), the rate of family history of psychiatric illness was significantly higher in boys than in girls (p=0.006) (Table 5).

Table 3. Comorbid psychiatric disorders, and treatment approaches for obsessive-compulsive disorder in the sample

	Number (n)	Percentage (%)
Presence of psychiatric comorbidity		
Yes	61	58.7
No	43	41.3
Comorbid psychiatric disorders		
Anxiety disorders*	30	28.8
ADHD/ODD	26	25
Depressive disorder	12	11.5
CD	5	4.8
Tic disorder	4	3.8
PTSD	1	1.0
Specific learning disability	1	1.0
Other psychiatric disorders**	14	13.5
Psychotropic medications		
None	9	8.7
SSRI only	45	43.3
Antipsychotic only	4	3.8
SSRI + Antipsychotic	28	26.9
SSRI+ADHD medications	7	
SSRI + ADHD medications + Antipsychotic	4	6.7
SSRI+AP+Additional medication***	7	3.8
		6.7
Response to treatment		
Positive response	65	61,9
Partial response	21	20,0
Resistant to treatment	7	6,7
Unmedicated/non-compliance with treatment****	11	10,5

*Generalized anxiety disorder, panic disorder, social anxiety disorder, specific phobias, agoraphobia, separation anxiety, selective mutism, etc.

**Communication disorders, elimination disorders, sleep and eating disorders, trichotillomania, etc.

***NaSSA, Benzodiazepine, Mood stabilizer medication

****Non-compliance with treatment: the non-use or discontinuity of the treatment process.

Abbreviations: ADHD: Attention-Deficit/Hyperactivity Disorder, CD: Conduct Disorder, OCD: Obsessive-Compulsive Disorder, ODD: Oppositional defiant disorder, PTSD; Post-traumatic stress disorder, SSRI: Selective serotonin reuptake inhibitor

When analysing the accompanying psychopathologies separately, it was found that anxiety disorders were significantly more prevalent in girls (p=0.022), while ADHD/ODD (p= 0.003) and tic disorder (p= 0.035) were significantly more prevalent in boys. No significant gender difference was found in depressive disorders (p>0.05) (refer to Table 5).

Treatment options and responses did not differ significantly between genders (p>0.05).

When analysing children and adolescents based on their age (preadolescent/adolescent) in terms of sociodemographic characteristics and OCD clinical findings, the only significant difference found was that counting and repeating compulsions were more common in adolescents than in preadolescents. No significant differences were observed in terms of family history of OCD and psychiatric illness, the existence of precipitating factors, and comorbid psychopathologies presence or type (p>0.05). The comparison between the age groups is shown in Table 6.

There were no significant differences (p>0.05) in terms of place of residence, income level, family structure, age at disease onset, disease duration, duration of outpatient follow-up, treatment options, and treatment responses across different age groups.

Table 4. Sociodemographic variables and clinical features according to the severity of obsessive-compulsive disorder in the sample

	Mild OCD (n:6)	**Moderate OCD (n:25)**	**Severe OCD (n:73)**	**p-value***
Gender (n,%) Male Female	 2 (33.3) 4 (66.7)	 9(36) 16(64)	 35 (47.9) 38 (52.1)	0.547
Place of residence Urban Rural	 6 (100) 0 (0)	 24(96) 1(4)	 59(80.8) 14(19.2)	0.125
Age (years), Median (min-max)	7.0 (6.0-14.0)	12.0 (7.0-17.0)	12.0 (5.0-17.0)	**0.012**
Age of OCD onset (years), Median (min-max)	6.5 (5.0-12.0)	12.0 (6.0-17.0)	7.0 (6.0-14.0)	**0.02**
Duration of OCD (month), Median (min-max)	18.5(2.0-31.0)	15.0 (3.0-32.0)	24.0 (4.0-104.0)	**0.009**
Outpatient clinic follow-up period (month), Median (min-max)	4.0 (0.0-11.0)	4.0 (0.0-18.0)	9.0 (0.0-75.0)	**0.004**
Family history of OCD (n,%) Yes No	 1(16.7) 5(83.3)	 7(28) 18(72)	 23(31.5) 50(68.5)	0.843
Family history of psychiatric disorder(n,%) Yes No	 1(16.7) 5(83.3)	 11(44) 14(56)	 16(21.9) 57(78.1)	0.384
Presence of precipitating factor(s) (n, %) Yes No	 0 (0) 6 (100)	 20(80) 5(20)	 53(72.6) 20(27.4)	0.375
Presence of psychiatric comorbidity (n,%) Yes No	 3(50) 3 (50)	 12(48) 13(52)	 27(37) 46(63)	0.352
Presence of more than one psychiatric comorbidity (n, %) Yes No	 1(16.7) 5(83.3)	 2(8) 23(92)	 51(70.8) 21(29.2)	0.074

*The chi-square test for categorical variables and the Kruskal Wallis Test for continuous variables were used to test group differences.
Bold font indicates statistical significance: $p<0.05$. *Abbreviations:* OCD: Obsessive-compulsive disorder

Table 5. Comparisons of the variables according to the gender in the sample

	Male(n: 46)	**Female(n:58)**	**p-value***
Age groups			
Preadolescent child	17(43.6)	22(56.4)	0.919
Adolescent	29(44.6)	36(55.4)	
Family history of OCD (n,%)			
Yes	14(30.4)	10(17.2)	0.089
No	32(69.6)	48(82.8)	
Family history of psychiatric disorder (n,%)			
Yes	22(47.8)	13(22.4)	**0.006**
No	24(52.2)	45(77.6)	
Presence of precipitating factor(s) (n, %)			
Yes	8(82.6)	1(29.3)	0.158
No	38(17.4)	41(70.7)	
Obsession type			
Contamination	30 (65.2)	35 (60.3)	0.610
Religious	16 (34.8)	16 (27.6)	0.430
Sexual	5 (10.9)	10 (17.2)	0.358
Magical thinking	2 (4.3)	6 (10.3)	0.297
Somatic	3 (6.5)	5(8.6)	0.494
Aggressive	3(6.5)	2(3.4)	0.653
Hoarding/saving	3(6.5)	2(3.4)	0.653
Compulsion type			
Cleaning/washing	29 (63.0)	31 (53.4)	0.322
Repeating	23 (50.0)	31 (53.4)	0.727
Checking	10 (21.7)	18 (31.0)	0.288
Counting	8 (17.4)	9 (15.5)	0.797
Ordering/arranging	6 (13.0)	9(15.5)	0.721
Superstition	3(6.5)	2(3.4)	0.653
Hoarding/collecting	3(6.5)	1(1.7)	0.319
Presence of psychiatric comorbidity (n,%)			
Yes	28(60.9)	33(56.9)	0.683
No	18(39.1)	25(43.1)	
Presence of more than one psychiatric comorbidity (n, %)			
Yes	11(23.9)	13(22.8)	0.895
No	35(76.1)	43(77.2)	
Comorbid psychiatric disorders			
Anxiety disorders	8(17.4)	22 (37.9)	**0.022**
ADHD/ODD	18 (39.1)	8 (13.8.)	**0.003**
Depressive disorder	3(6.5)	9 (15.5)	0.154
CD	2(4.3)	3 (5.2)	0.609
Tic disorder	4(8.7)	0 (0)	**0.035**
PTSD	0(0)	1(2.2)	0.558
Specific learning disability	1(2.2)	0(0)	0.442
Other psychiatric disorders	7(15.2)	7(12.1)	0.640

Notes: *The chi-square test and Fisher's exact test (as appropriate) were used to test group differences. **Bold font** indicates statistical significance: $p < 0.05$.

Table 6. Comparisons of the variables according to the age groups in the sample

	Preadolescent(n:39)	**Adolescent(n:65)**	**p-value***
Gender (n,%)			
Male	17 (43.6)	29 (44.6)	0.541
Female	22 (56.4)	36 (55.4)	
Family history of OCD (n,%)			
Yes	10(25.6)	14(21.5)	0,631
No	29(74.4)	51(78.5)	
Family history of psychiatric disorder (n,%)			
Yes	14(35.9)	21(32.3)	0.708
No	25(64.1)	44(67.7)	
Presence of precipitating factor(s) (n, %)			
Yes	13(33.3)	12(18.5)	0.086
No	26(66.7)	53(81.5)	
Obsession type (n,%)			
Contamination	24 (61.5)	41 (63.1)	0.875
Religious	10 (25.6)	22 (33.8)	0.380
Sexual	8 (20.5)	7 (10.8)	0.171
Magical thinking	1 (2.6)	7 (10.8)	0.253
Somatic	5 (12.8)	3(4.6)	0.148
Aggressive	1(2.6)	4(6.2)	0.648
Hoarding/saving	3(7.7)	2(3.1)	0.361
Compulsion type (n, %)			
Cleaning/washing	19 (48.7)	41 (63.1)	0.151
Repeating	13 (50.0)	41 (63.1)	**0.003**
Checking	9 (23.1)	19 (29.2)	0.493
Counting	1 (2.6)	16 (24.6)	**0.003**
Ordering/arranging	5 (12.8)	10(15.4)	0.719
Superstition	1(2.6)	4(6.2)	0648
Hoarding/collecting	3(7.7)	1(1.5)	0.147
Presence of psychiatric comorbidity (n,%)			
Yes	21(53.8)	40(61.5)	0.441
No	18(46.2)	25(38.5)	
Presence of more than one psychiatric comorbidity (n, %)			
Yes	9 (23.7)	15 (23.1)	0.895
No	29 (76.3)	50 (76.9)	
Comorbid psychiatric disorders (n,%)			
Anxiety disorders	13(33.3)	17 (26.2)	0.434
ADHD/ODD	11(28.2)	15 (23.1)	0.559
Depressive disorder	4(10.3)	8 (12.3)	0.508
CD	2(5.1)	3(4.6)	0.623
Tic disorder	0 (0)	4 (6.2)	0.294
PTSD	0 (8.7)	1 (1.5)	0.625
Specific learning disability	1(2.6)	0 (0)	0.375
Other psychiatric disorders	4(10.3)	10(15.4)	0.458

Notes: *The chi-square test and Fisher's exact test (as appropriate) were used to test group differences. **Bold font** indicates statistical significance: $p < 0.05$.

DISCUSSION

The study evaluated sociodemographic data, OCD clinical features, comorbidities, and treatments of children and adolescents with OCD based on disease severity, gender, and age, using the 6-year follow-up and treatment data of a university hospital.

The sample consisted of 55.8% girls. Previous studies conducted in OCD follow-up centers have reported higher rates of childhood OCD in boys, ranging from 60% to 70% [1]. A recent study on pediatric OCD also reported a preponderance of 56% females, similar to our findings [18]. This situation is also supported by the predominance of women in adult OCD studies [19].

Our study revealed that the mean age of OCD onset was 11.9 years, while the mean age at admission to child psychiatry was 13 years. The duration of symptom onset at presentation was 2.1±1.5 years, which is consistent with the literature indicating a two to three year gap between the onset of OCD and diagnosis [4, 5].

The high rates of positive family history of OCD (23.1%) and history of psychiatric illness (33.7%) in our study support the hypothesis of familial aggregation of OCD or related psychopathology, such as anxiety and/or depression, as reported in the literature. Childhood OCD is linked to a higher familial and genetic risk, with genetic inheritance estimated at around 65% [1, 6]. Probands of children with OCD have a definite OCD rate of 11.7%, while the rate of definite and probable OCD is 16.3% [7]. In another family study, the risk of OCD in first-degree relatives of children with OCD was reported to be 26% [20].

In our study, 41% of participants had one or more comorbid psychiatric disorders. The four most common comorbid disorders were anxiety disorders, ADHD and/or ODD, MDD, and tic disorder. Although studies have shown differences in the rates and types of comorbidities in childhood OCD, a large meta-analysis reports that 64% of children with OCD have comorbidities, with anxiety disorders being the most common [9]. Other common comorbidities in children with OCD include MDD, ADHD, behavioral disorders, ASD, Tourette's syndrome, and tic disorders [1, 9, 11]. Peris et al. conducted a large sample study on pediatric OCD, which found that the four most common comorbid disorders were anxiety disorder (50%), externalizing disorders such as ADHD, ODD, and conduct disorder (CD) (16%), depressive disorder (12%), and tic disorder (11%) [11]. Early detection and identification of comorbidities is crucial for effective treatment planning and intervention, as they can cause increased symptom severity and additional burdens on social, school, and family functioning [21-23].

In this study, 91% of the participants utilised at least one additional pharmacological agent in conjunction with psychoeducation (child and family psychoeducation) and psychotherapies (behavioural methods for OCD symptoms). Even half of the children who received pharmacotherapy used combined drugs, such as SSRI + Antipsychotic, SSRI+ADHD medications, SSRI + ADHD medications + Antipsychotic, or SSRI+AP+Additional medication. The high rate of pharmacotherapy use may have been influenced by the high number of moderate and severe cases in our sample, as well as the high rate of comorbidities. CBT/ERP is usually the most effective first-line treatment for childhood OCD. However, psychopharmacology is often necessary [1, 12]. Monotherapy with SSRIs has moderate effect sizes compared to placebo according to multiple Randomised Controlled Trials [13]. When SSRIs are insufficient (optimal SSRI response requires high doses and a long duration of treatment), the best augmentation strategy is to add low doses of neuroleptics, especially risperidone and aripiprazole. Although studies have been conducted with other drugs, no conclusive evidence has been found [12]. Given the high number of comorbidities, the most effective treatment is one that considers both behavioural and pharmacotherapy approaches for each comorbidity [1].

Our study found that approximately two-thirds of children responded positively to treatment, one-fifth responded partially, one-tenth did not receive drug treatment or were non-compliant, and only 6.7% did not respond to treatment. In a 3-year prospective follow-up study of children and adolescents treated for OCD, partial remission rates were 53% and complete remission rates were 27%. The study reported that 71% of the participants received SSRI treatment, and the duration of SSRI use varied between 4% and 100% of the follow-up period [24]. Research suggests that childhood OCD may have a more favourable prognosis than adult-onset OCD, with a significant proportion of cases becoming subclinical or experiencing partial or complete remission [1].

The study revealed that individuals with moderate and severe OCD were admitted to the outpatient clinic at a significantly higher mean age than those with mild OCD. Additionally, those with severe OCD had longer illness duration and outpatient

clinic follow-up periods compared to those with moderate OCD. These findings support previous studies that suggest OCD is a progressive and worsening condition [25]. Therefore, early detection and intervention in childhood OCD is crucial. Given the increasing burdens that arise over time in the disease and the challenges faced by children in expressing themselves, family information and early awareness become even more crucial. Early intervention tailored to children's developmental stages can prevent the progression of severity and impairment over time.

The results of our study indicated that there was no significant difference in the prevalence of comorbid conditions between genders. However, there were differences in the types of comorbidities. Boys had a significantly higher prevalence of ADHD/ODD and tic disorder, whereas girls had a higher prevalence of anxiety disorders. There are few studies investigating gender differences in childhood OCD. Existing literature has examined age at onset [10, 26], symptom severity [26], OCD symptom dimensions [10, 27], and treatment responses [28], but no significant differences have been found between genders. In our study, we also found no difference in these findings according to gender. However, while there was no difference in family history of OCD according to gender, we found that the family history of psychiatric disease was significantly higher in males. The results suggest the existence of a form of OCD with early onset, high familial inheritance, and a male predominance, as reported in the literature [16]. Vivan et al. found no gender differences in the prevalence of comorbidity among adolescents with OCD, but they did find a significant difference in terms of comorbidity with tic disorder, which was significantly higher in males [10]. Ivarsson et al. reported that ADHD is associated with higher rates of tic disorder in boys, and GAD is also significantly higher in girls [29]. Peris et al. also reported that among children and adolescents with OCD, the odds of an externalizing disturbance are approximately doubled in males [11].

When analysing children and adolescents based on their age (preadolescent/adolescent) in terms of sociodemographic characteristics and OCD clinical findings, the only significant difference found was that counting and repeating compulsions were more common in adolescents than in preadolescents. It is worth noting that childhood-onset OCD may be a separate subtype, which has brought research on this subject to the forefront [30]. The study by Geller et al. revealed no significant differences between age groups in terms of sociodemographic data, with the exception of the age of onset of the disease. Regarding clinical characteristics, only religious and sexual obsessions were overrepresented in adolescents compared to children, while there were no significant differences between other obsessions and compulsions [31]. In a separate study, it was found that the age at onset was significantly higher in adolescents. Additionally, contamination obsession and washing, checking compulsions were reported to be more prevalent in adolescents, while no significant differences were found in other variables [25]. The literature reports that children may have higher rates of fear regarding catastrophic or harmful events happening to themselves or their loved ones, reflecting developmental concerns about separation from attachment figures. Additionally, obsessions related to sexuality, morality, and religion may be more common in adolescence [1, 31]. Our study suggests that obsessions and compulsions may vary according to the age of the patient and their developmental stage. Specifically, we found that counting and repeating compulsions were more common in adolescents. It is important to note that our findings are objective and based on statistical analysis. This may be related to the fact that mathematical ability develops with age.

Limitations

This study analyses sociodemographic characteristics, clinical features, psychiatric evaluation, comorbid conditions, psychiatric treatment options, and treatment effectiveness in children and adolescents with OCD, with a focus on disorder severity, age, and gender. The study is characterised by both strengths and limitations. A strength of the study is that all patients underwent a comprehensive psychiatric evaluation that was conducted in the clinical setting. The study had a relatively large sample size. However, limitations include its retrospective design, lack of standardised treatment methodology, and reliance solely on data from patients who visited the child psychiatry outpatient clinic. A limitation of this study is that the initial assessment and follow-up did not use a valid and reliable form for assessing OCD symptoms. These limitations may hinder the generalizability of the results.

CONCLUSIONS

Our study demonstrated that individuals with moderate and severe OCD were admitted to the outpatient clinic at a significantly higher mean age compared to those with mild OCD. Gender differences were also observed, with boys having higher rates of family history of psychiatric illness, comorbid ADHD/ODD

and tic disorder, while anxiety disorders were more common in girls. The study found that counting and repeating compulsions were more common in adolescents than preadolescents. OCD is a psychiatric disorder that usually appears in childhood and can cause significant functional impairments. It has a high potential for chronicity and aggravation. Although there are studies in the literature comparing OCD across different age groups, the results are inconsistent. The study presents differences in clinical features, comorbidities, and treatment of childhood OCD based on disease severity, gender, and age. These findings can guide clinicians in their approach.

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Informed Consent: The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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