

Obsessive-Compulsive Disorder With and Without Tics in an Epidemiological Sample of Adolescents

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Objective: This study was undertaken to discriminate subtypes of obsessive-compulsive disorder in adolescents. **Method:** Forty individuals with obsessive-compulsive spectrum disorders were ascertained from an epidemiological sample of 861 adolescents. Interviews were conducted by child psychiatrists using semistructured diagnostic interviews, including a clinician-rated Yale-Brown Obsessive Compulsive Scale. Discriminant analysis was performed to compare the scores on the Yale-Brown scale of groups with and without comorbid tics and to compare boys and girls. **Results:** Adolescents with tics were more prone to aggressive and sexual images and obsessions than were adolescents without tics; these differences could not be wholly attributed to sex differences. **Conclusions:** The subtypes among unreferred adolescents are similar to those of adult patients with obsessive-compulsive disorder with and without Gilles de la Tourette syndrome. Subtypes evident in adulthood may be established relatively early in the natural course of obsessive-compulsive disorder.

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Obsessive-compulsive disorder is a common disorder, with a lifetime prevalence in adolescence of 2%–3% (1, 2). The rising frequency of diagnosis of obsessive-compulsive disorder over the last decade (3) has motivated researchers to distinguish subtypes of obsessive-compulsive disorder. Several studies (4–6 and unpublished study by V. Eapen et al.) have compared adult patients with obsessive-compulsive disorder with and without chronic tic disorder or Gilles de la Tourette's disorder on the content of their obsessions and compulsions. The subjects were patients ascertained through clinical facilities, and the study groups may therefore have been biased toward greater severity and comorbidity. In addition, the patients were adults and might have been further along in the natural course of obsessive-compulsive disorder than would be younger patients. Thus, the differences found between the two manifestations of obsessive-compulsive disorder, with and without tics or Tourette's disorder, may not provide profiles for the full range of obsessive-compulsive disorder.

The present study focused on an epidemiological sample of unreferred adolescents diagnosed with obsessive-compulsive disorder. The analyses were directed at distinguishing qualitatively between obsessive-compulsive disorder with and without tics.

METHOD

The sample included 861 adolescents 17 years old, 436 boys and 425 girls. The screening was part of the physical examination that precedes induction into the Israel Defence Force. The induction centers screen over 95% of a complete cohort, and the present sample comprised consecutively sampled adolescents. The diagnostic interview used was the Yale Schedule for Tourette Syndrome and Other Behavioral Disorders, Hebrew Version (7). The adolescents were first interviewed by child psychiatrists using abridged modules from this schedule, which includes an extended Tourette's disorder module and an obsessive-compulsive disorder module with the 58-item Yale-Brown Obsessive Compulsive Scale (8). They were screened for anxiety disorders, Tourette's disorder, and tics. Subsequently, 100 subjects who received a preliminary diagnosis of anxiety disorder, Tourette's disorder, or tics were invited for a full diagnostic interview using the unabridged Yale Schedule for Tourette Syndrome and Other Behavioral Disorders, Hebrew Version, administered by a child psychiatrist.

Fifty comparison subjects, whose interviews indicated the absence of these disorders in the initial assessment, were randomly interspersed to reduce expectation bias in the second-level interviewer. For this second phase, 144 individuals were seen: 94 subjects with a preliminary diagnosis of anxiety disorder, Tourette's disorder, or tics and 50 comparison subjects. Written informed consent was obtained from the 144 individuals after the aims, procedure, and implications

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of the semistructured interview were fully explained. In addition, a commitment was made that no information would be disclosed and that all interviews were to serve for research purposes only.

Of the individuals seen at the second stage, 20 were diagnosed with obsessive-compulsive disorder according to DSM-III-R criteria. Thirteen were diagnosed with subclinical obsessive-compulsive disorder; they met all of the diagnostic criteria for obsessive-compulsive disorder except time spent on symptoms. Seven subjects who had extensive obsessive-compulsive symptoms, spent at least 1 hour out of every 24 on their symptoms, but found their obsessive-compulsive behavior to be ego-syntonic were diagnosed with obsessive-compulsive symptoms. Discriminant analysis of scores on the Yale-Brown Obsessive Compulsive Scale did not show differences between the group with obsessive-compulsive disorder and those with obsessive-compulsive spectrum disorders. Therefore, the three diagnostic groups were pooled. Altogether, 40 subjects (23 boys and 17 girls) were included in the analysis. Fifteen individuals with obsessive-compulsive disorder (14 boys and one girl) had tics, and 25 (nine boys and 16 girls) did not have tics.

RESULTS

The means and standard deviations for scores on the Yale-Brown Obsessive Compulsive Scale and the severity ratings were not significantly different for the groups with and without tics. In the discrimination analysis for obsessive-compulsive disorder with and without tics, one discriminant function was derived, and its characteristics are summarized in table 1. The score on the violent images and impulses subscale was the most discriminating variable; total severity of compulsions has a large but negative coefficient. The small groups reduced the discrimination effect. The chi-square value was just above the 0.05 significance level.

The proportion of cases correctly classified by the canonical discriminant function was 80% for each of the two groups and for the overall group.

Tics occurred in a much larger proportion of boys than in girls; the ratio was 14:1. Therefore, discriminant analysis was performed on the 40 individuals with obsessive-compulsive disorder by sex. The means and standard deviations of scores on the Yale-Brown Obsessive Compulsive Scale and the severity ratings for the boys and the girls were not significantly different. The discriminant function derived failed to show significantly different means for the two gender groups ($\chi^2=10.5$). The discriminant function predicted group membership for 80% of the boys and 70% of the girls. Gender did not distinguish subtypes or subjects with and without tics.

DISCUSSION

Most work on subtypes of obsessive-compulsive disorder has been conducted with adult clinical patients (4–6, V. Eapen et al.). These studies compared the obsessive-compulsive symptoms of patients with obsessive-compulsive disorder and tics or Tourette's disorder to the symptoms of patients with obsessive-compulsive disorder alone. Patients with obsessive-compulsive disorder plus Tourette's disorder were

TABLE 1. Canonical Discriminant Function Derived From Scores on the Yale-Brown Obsessive Compulsive Scale of 40 Adolescents With Obsessive-Compulsive Spectrum Disorders^a

Subscale or Severity Rating	Coefficient
Violent images and impulses	0.84
Sexual images and impulses	-0.53
Contamination	0.29
Grooming	-0.05
Tidiness	0.63
Checking	0.31
Total obsession severity	-0.53
Total compulsion severity	-0.96

^a $\chi^2=14.8$, $df=8$, $p=0.06$.

characterized by more violent and aggressive obsessions and by harm-avoidance compulsions. The discriminant analysis conducted in this study is an extension of the work on clinical groups of adults in that it used an adolescent population sample rather than a clinical adult study group. It further extends the previous studies by relaxing the diagnostic criteria for inclusion: obsessive-compulsive disorder was extended to include subclinical obsessive-compulsive disorder and obsessive-compulsive symptoms, and instead of Tourette's disorder all individuals with at least one motor or vocal tic were included. Even with this relaxation of inclusion criteria and course of illness, the central finding holds: adolescents with obsessive-compulsive disorder and tics have obsessive-compulsive symptoms that are richer in violent impulses and images than are the symptoms of adolescents with obsessive-compulsive disorder alone. In the adolescent sample, those with obsessive-compulsive disorder alone had more sexual ideation and seemed to experience their obsessions and compulsions as more severe.

A covarying factor is the gender difference. In the present study, the group with obsessive-compulsive disorder alone contained more girls than boys. The group with obsessive-compulsive disorder with tics was predominantly male, with a ratio of 14:1. Other reported studies that attempted to distinguish subtypes of obsessive-compulsive disorder also had overrepresentations of males in groups with obsessive-compulsive disorder plus tics or Tourette's disorder (4–6, V. Eapen et al.). The aggressive obsessions may be associated with male gender, just as the cleaning compulsions found to typify obsessive-compulsive disorder in some studies (4) may be related to female gender. Larger groups of girls with obsessive-compulsive disorder plus tics and of boys with obsessive-compulsive disorder without tics need to be compared to determine whether gender itself affects the presentation of obsessive-compulsive disorder. The growing number of reports on small and diverse study groups may warrant a meta-analytic approach.

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