

Research Article

CLINICAL CHARACTERISTICS OF INPATIENT ADOLESCENTS WITH SEVERE OBSESSIVE–COMPULSIVE DISORDER

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Obsessive–compulsive disorder (OCD) is a common disorder in adolescents, usually treated in the outpatient setting. Our aim in this study was to evaluate the clinical characteristics of adolescents with severe OCD that required hospitalization. A total of 342 patients consecutively admitted to a psychiatric adolescent inpatient unit and 87 healthy volunteers were assessed by a semistructured interview for clinical diagnosis, suicide risk factors, aggression, ego defense mechanisms, and intelligence. Patients with OCD (n = 40) were compared to other four diagnostic patient groups with psychotic, affective, conduct, and eating disorders, as well as to normal controls. Adolescent inpatients with OCD experienced less separation anxiety than all the other psychiatric groups (P < .01) and were less impulsive than controls (P < .001). They differed in aggressive/impulsive traits and hospital-related behaviors from other diagnostic groups. Adolescent inpatients with OCD consist of a unique subgroup in the inpatient unit in terms of their clinical characteristics and risk factors for suicide. These characteristics should be taken into account when developing a treatment plan for these difficult-to-treat inpatients. Depression and Anxiety 0:1–9, 2006. © 2006 Wiley-Liss, Inc.

Key words: *obsessive–compulsive disorder; adolescents; inpatient; suicide; aggression; defense mechanism*

INTRODUCTION

Our aim in this exploratory study was to evaluate the clinical characteristics of adolescent inpatients with obsessive–compulsive disorder (OCD), an anxiety disorder characterized by intrusive and distressing thoughts, urges, and images, as well as repetitive behaviors aimed at decreasing the discomfort caused by these obsessive thoughts [American Psychiatric Association, 1994]. OCD is a common disorder during childhood and adolescence [Presta et al., 2003], with prevalence second to that of major depression [Karno et al., 1988], ranging from 1% to 5% in different countries [Flament et al., 1988; Honjo et al., 1989; Thomsen and Mikkelsen, 1991; Zohar et al., 1992] and recently shown to be along a continuum with obsessional symptoms among nonclinical populations [Mathews et al., 2004]. However, the disorder con-

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tinues to be underestimated, underdiagnosed, and undertreated all over the world [Presta et al., 2003]. Reasons for underdiagnosis and undertreatment may include some OCD-specific factors such as secretive-ness and lack of insight. Although patients may be aware that their obsessions are excessive—that is, may recognize that they spend too much time thinking about them—they may have little insight into the fact that the belief underlying their obsession is senseless and unreasonable. Recently, preliminary support was provided for the cognitive conceptualization of OCD not only in adulthood but also during childhood [Barrett and Healy, 2003].

In 80% of patients with OCD, onset of the disorder occurs before age 18 [Pauls et al., 1995], but overt obsessive-compulsive manifestations (e.g., stereotypes and rituals) may go unnoticed even in early childhood [Riddle et al., 1990]. An average 8 years pass from the onset of the disorder until psychiatric help is sought. Early diagnosis is essential to prevent the potential damage to future social adjustment of the patients [Karno et al., 1988].

OCD, a chronic disorder with a relapsing-remitting course, is often associated with impairment in many domains of social functioning [Eisen et al., 1999]. OCD is frequently comorbid with depression, anxiety disorders (e.g., social phobia), tics, and substance abuse. Comorbid disorders may complicate the assessment, treatment, and outcome of the patients [Shafran, 2001].

The treatment of adolescent patients with patients is generally conducted in the framework of an outpatient clinic. Only a substantial minority will also require psychiatric hospitalization [Jenike, 1990b].

In our previous study, we evaluated the relationship between depression and suicidal behavior in adolescent patients with OCD. We have found that OCD seemed to be a protective factor against suicide attempts [Apter et al., 2003]. In this current study, using the same database, we focused on the role of four possible different factors that may require the hospitalization of adolescent patients with OCD in the same population:

- **Suicidal behavior:** Suicidal behavior occurs in ~15% of individuals suffering from OCD [Hollander et al., 1996], principally in those showing comorbidity with antisocial or borderline personality disorder. Comorbidity with conduct disorder and impulsiveness may also be potential risk factors for suicidal behavior [Apter et al., 2003], and other important correlates include depression, anxiety, aggression, and anger [Apter et al., 1988, 1995; Stein et al., 1998]. However, these variables have been poorly studied in adolescents. Our recent study showed that although suicidal ideation and depressive symptoms are common in adolescent inpatients with OCD, these patients seem to be protected against/from

suicide attempts in comparison to non-OCD inpatients [Apter et al., 2003].

- **Violence and aggression:** Though violent and aggressive behaviors are not key features in OCD, and despite earlier reports of these behaviors being rare among patients with OCD [Rachman and Hodgson, 1980], this disorder is associated with increased levels of aggression in both adults and adolescents [Apter et al., 1995; Honjo et al., 1989]. In a substantial proportion of patients with OCD, obsessive-compulsive symptomatology revolves around themes of aggression [Stein et al., 1991]. Serotonin abnormalities were suggested to play a role in the link among obsessive-compulsive symptoms, aggression, impulsivity, and mood disorders [Apter et al., 1990]. Abnormalities in the serotonin system, and particularly a putative hypersensitivity in the postsynaptic serotonin receptors, have been the leading hypothesis for the pathophysiology of OCD over the past 20 years. Specific efficacy of serotonergic medications in the treatment of OCD has been significant evidence for the involvement of the serotonergic system in the etiopathogenesis of OCD. Cerebrospinal fluid and pharmacological challenge studies, as well as studies of peripheral markers of central serotonergic function, also support this hypothesis [Zohar and Insel, 1987].
- **Treatment resistance:** Although different pharmacological and psychotherapeutic treatments are available, about 30–50% of patients do not respond to therapy and have a relatively poor prognosis. Factors contributing to treatment failure include comorbidity with personality disorders, tic disorders, conduct and oppositional defiant disorders, dysfunctional families, and the presence of depression and/or suicidal behavior [Foa, 1979; Jenike, 1990a]. Jenike [1990a] suggested that patients with OCD who suffer from comorbid schizotypal personality disorder are less responsive to either pharmacological or behavioral therapy. He reported a correlation between the number of positive criteria for schizotypality to OCD treatment resistance, and named this subgroup of patients “schizo-obsessive.”
- **Ego defense mechanisms:** The pathological or excessive use of different defense mechanisms may be a contributing factor for hospitalization. During his early investigations into the unconscious, Freud [1953] was one of the earliest authors to describe obsessions and compulsions. Later, Anna Freud [1966] hypothesized that the “obsessional neuroses” resulted from impairment of ego functions. Such ego dysfunction led to an inability to master ambivalence (e.g., feelings of aggression and attachment to the caretaker or love-hate emotions). The compensatory process was characterized by a prominent use of undoing, reaction formation, isolation, and intellectualization defense mechanisms. Although we failed to find any evidence that

defense mechanisms are a contributing factor for hospitalization, we considered them worth studying.

The specific hypotheses of this study were as follows:

1. Adolescent inpatients with OCD will show higher levels of risk factors for suicide compared to other specific diagnostic groups and normal controls, despite their low propensity for suicidal attempts [Apter et al., 2003].
2. Adolescent inpatients with OCD will show higher levels of aggression and violent behavior [Apter et al., 2003] compared to other specific diagnostic groups and normal controls.
3. The usage pattern of different ego defense mechanisms (e.g., undoing, reaction formation) by adolescent inpatients with OCD differs from that of other diagnostic groups and normal controls.

METHODS

SUBJECTS

The sample consisted of 342 adolescents consecutively admitted to the adolescent inpatient unit at the Geha Mental Health Center in Israel between 1996 and 1999. During this period, there were no changes in the hospital's review criteria for admission that could influence or confound the distribution of patients admitted to the adolescent inpatient unit. The study was approved by the Geha Mental Health Center Review Board, and an informed consent was obtained from all participants and their parents after the nature of the study was fully explained to them. We analyzed relevant available data on 342 of the 348 patients described in our previous study on the relationship between depression and suicidality in adolescent inpatients with OCD [Apter et al., 2003]. The mean age of the subjects was 16.4 years ($SD = 2.1$). They had 9.2 ($SD = 3.1$) years of schooling. Ninety percent were Israeli born and Jewish, and most were middle or lower middle class. We based diagnoses on DSM-IV criteria [American Psychiatric Association, 1994] following a structured psychiatric interview, using the Childhood Version of the Schedule for Affective Disorders and Schizophrenia—Present and Lifetime Version [K-SADS-PL; Kaufman et al., 1997], which has proved to be reliable and valid in our hands [Shanee et al., 1997], and data collected in extensive ward observations. Interviews were conducted by a senior child psychiatrist (G. Zalsman). Extensive ward observations and clinical team discussions led by the unit director (A. Apter) also contributed to the establishment of diagnoses. Patients who were discharged within 10 days of admission were not included in the study ($n = 33$). The diagnostic distribution of the participants was as follows: OCD ($n = 40$); psychotic disorder ($n = 118$); affective disorder ($n = 53$); conduct disorder ($n = 81$); and eating disorders ($n = 50$). All patients with

OCD failed outpatient treatment and were maintained on serotonin reuptake inhibitors (SRIs), with or without antipsychotics. The patients with psychotic disorder were maintained on antipsychotics. Patients with mood disorder were treated by antidepressants, with or without mood stabilizers. Most of the patients with conduct and eating disorder were drug free.

In addition, a group of 87 community controls matched for age, sex, ethnic origin, and socioeconomic status with the whole unit sample was also assessed. All had negative lifetime histories for psychiatric treatment.

ASSESSMENT

Childhood Suicide Potential Scales [CSPS; Pfeffer et al., 1979]. The CSPS, a semistructured interview, consists of nine scales intended to evaluate different aspects of psychopathology and suicidal behavior in children and adolescents. We used the spectrum of suicidal behavior to measure the severity of suicidal behaviors occurring in the last 6 months. The suicide scale classifies suicidal behavior on a 5-point spectrum of severity ranging among nonsuicidal behavior (1), suicidal ideas (2), suicidal threats (3), mild suicidal attempts (4), and serious suicidal attempts (5). Each subject's score is determined by the highest degree of documented suicidal tendency. The ego defenses module of the CSPS was used for assessment of undoing and reaction formation defense mechanisms. The full psychometric properties of this interview were described in detail in our previous studies [Apter et al., 1997, 2003].

Overt Aggression Scale [OAS; Yudofsky et al., 1986]. The OAS measures four types of aggression: against self, against physical objects, against people, and verbal aggression. It is based on weekly ward observations by the nursing staff, and ratings are averaged out over a 4-week period. In this study, only self-directed aggression was recorded. After 10–14 days on the unit, patients were asked to complete all the self-report forms and an OAS was completed for the first month of stay in the unit (or until discharge, if the stay was less than one month). The standardized reliability coefficient is .83–.93 [Kopecky et al., 1998]. The α coefficients for each of the items ranged from .90 to .94. A highly significant difference was observed between agitated and nonagitated inpatients ($P = .0001$; Kopecky et al., 1998).

Life Style Index [LSI; Plutchik et al., 1979]. The LSI was designed to assess ego defense mechanisms as conceptualized by Plutchik et al. It is a 97-item self-report questionnaire measuring eight defense mechanisms: compensation, displacement, projection, reaction formation, denial, intellectualization, regression, and repression. This scale was previously found by us to be reliable and valid in adolescent inpatients [Apter et al., 1997; Fennig et al., 2005; Offer et al., 2000; Stein et al., 2003].

Extended Milta Test [Koren, 1966]. This intelligence test comprises seven different subtests: four verbal tests—general knowledge, sentence completion, irregular words, and vocabulary; and three performance tests—arithmetic progressions, arithmetic problems, and irregular letters. Similar to the Wechsler Intelligence Scale, it yields a verbal IQ score, a performance IQ score, and a combined IQ.

It is a multiple-choice test designed for children and adolescents ages 9–18 years, with three different levels available: for primary school (ages 9–12), for junior high (ages 13–15), and for high school (ages 16–18) students. The entire test takes 50 minutes and can be passed in the framework of a class, as well as on individual basis [Koren, 1966]. Unfortunately, IQ was not measured in the control group.

Due to problems with patient cooperation, the questionnaires were not fully completed for some of the participants. All control subjects were well-functioning adolescents recruited from the school system in the community (with no special needs); unfortunately, we do not have data on their IQ.

SOCIOECONOMIC STATUS

The socioeconomic status of the families was determined according to the family income.

STATISTICAL ANALYSIS

The data were analyzed (with control for age and gender) by one-way analysis of variance (ANOVA), including Scheffe's correction and the Bonferroni post hoc test for multiple comparisons. A χ^2 test with Yates's correction was used as appropriate, and the SPSS[®] statistical package, Version 11 for Windows (SPSS, Inc., Chicago, IL). $P < .05$ was considered significant.

RESULTS

There was no significant difference in age, family status, and ethnic origin between the different diagnostic groups and the subjects with OCD (Table 1), but the healthy controls were a year younger than the inpatients with OCD ($P < .05$). Three fourths of the inpatients with OCD were boys, whereas in three diagnostic groups (mood disorders, conduct disorders, and eating disorders) and in normal controls, over half were girls ($P < .05$). The socioeconomic status of the patients with OCD was the lowest of all the groups, and significantly lower than controls ($P < .05$).

CHILDHOOD SUICIDE POTENTIAL SCALES

Following Bonferroni post hoc tests, patients with OCD differed from the other diagnostic groups as follows (Table 2):

Aggression and violence

- Destructiveness and violence: The patients with OCD were more destructive and violent than the patients with eating disorders ($P < .05$ for both) and the normal controls ($P < .001$ for both).
- Aggression (in the last 6 months): The group with OCD was more aggressive than the group with psychotic disorders ($P < .05$) and the control group ($P < .001$).
- Aggression (in the past; i.e., prior to the last 6-month period): Patients with OCD were more aggressive in the past than were the normal controls ($P < .05$).

Affects, behaviors, and suicidal thoughts

- Suicidal thoughts: The patients with OCD had less suicidal thoughts than the group with conduct

TABLE 1. Demographic characteristics of the study population

| | | OCD | Schizophrenia, schizoaffective disorder, and schizophreniform | Mood disorders | Conduct disorder | Eating disorders | Healthy Controls | <i>F</i> (df) or χ^2 | <i>P</i> |
|-----------------------------------|------------------|------------|--|-------------------|---------------------|---------------------|--------------------------|---------------------------|----------|
| <i>N</i> | | 40 | 118 | 53 | 81 | 50 | 87 | Total 342 | |
| Age (years) | | 16.4 ± 2.0 | 17.0 ± 1.75 | 17.3 ± 1.71 | 16.2 ± 1.45 | 16.3 ± 2.07 | 15.4 ^a ± 1.77 | 11.45 (5,403) | <.001 |
| Gender | Male | 29 | 70 | 23 ^a | 11 ^a | 5 ^a | 38 ^a | 76.92 (5) | <.001 |
| | Female | 10 | 45 | 30 ^a | 66 ^a | 42 ^a | 49 ^a | | |
| Family status ^b | Intact family | 26 | 67 | 32 | 42 | 33 | 73 | 23.10 (5) | <.001 |
| | Nonintact family | 14 | 51 | 21 | 39 | 17 | 14 | | |
| Socioeconomic status ^c | | 21% | 33% | 37% | 36% | 23% | 51% ^a | 14.5 (5) | .01 |

^a $P < .05$ versus OCD group.

^bFamily status: "Intact families" describes those in which parents were living together; "Nonintact families" describes families with divorced, separated, or widowed parents.

^cSocioeconomic status: Proportion of the welfare-dependent and low-socioeconomic-class families among all families.

TABLE 2. Risk factors for suicide, as measured by the CSPS

| Variable | OCD | Psychotic disorders | Mood disorders | Conduct disorder | Eating disorders | Healthy controls | F value (df) | P |
|--|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------|-------|
| Destructiveness | 1.52 ± 0.51 | 1.38 ± 0.61 | 1.33 ± 0.48 | 1.45 ± 0.5 | 1.19 ^a ± 0.39 | 1.09 ^c ± 0.29 | 6.84 (5,357) | <.001 |
| Violence | 2.82 ± 1.58 | 2.35 ± 1.51 | 2.28 ± 1.47 | 2.43 ± 1.53 | 1.77 ^a ± 1.31 | 1.53 ^c ± 1.00 | 6.69 (5,371) | <.001 |
| Suicidality | 2.21 ± 1.22 | 2.08 ± 1.28 | 2.79 ± 1.51 | 3.48 ^c ± 1.38 | 2.55 ± 1.2 | 1.30 ^c ± 0.59 | 27.25 (5,355) | <.001 |
| Precipitating events | 6.52 ± 3.83 | 7.03 ± 3.58 | 8.11 ± 4.41 | 8.91 ^a ± 4.42 | 8.3 ± 3.32 | 5.08 ± 3.13 | 10.02 (5,380) | <.001 |
| Affects and behaviors (in last 6 months) | 13.5 ± 5.85 | 11.27 ± 6.23 | 14.28 ± 5.45 | 14.22 ± 6.0 | 13.91 ± 6.51 | 5.13 ^c ± 5.41 | 27.23 (5,374) | <.001 |
| Anxiety (in last 6 months) | 6.94 ± 3.59 | 6.06 ± 3.54 | 8.43 ± 3.36 | 6.91 ± 3.39 | 7.98 ± 3.86 | 2.55 ^c ± 2.78 | 27.14 (5,372) | <.001 |
| Aggression (in last 6 months) | 5.16 ± 2.62 | 3.56 ^a ± 2.67 | 4.0 ± 2.5 | 4.42 ± 2.91 | 4.14 ± 2.4 | 1.76 ^c ± 1.96 | 13.61 (5,373) | <.001 |
| Antisociability | 0.48 ± 1.06 | 0.53 ± 0.88 | 0.66 ± 0.87 | 1.31 ^b ± 1.08 | 0.54 ± 1.01 | 0.21 ± 0.56 | 12.93 (5,373) | <.001 |
| Past affects and behaviors | 13.55 ± 7.78 | 13.38 ± 8.15 | 14.38 ± 7.38 | 15.64 ± 6.99 | 13.72 ± 7.15 | 8.21 ^b ± 6.42 | 8.9 (5,362) | <.001 |
| Anxiety in the past | 7.61 ± 4.13 | 7.46 ± 4.56 | 8.2 ± 4.54 | 8.18 ± 4.31 | 8.4 ± 4.19 | 4.52 ^b ± 3.33 | 8.42 (5,362) | <.001 |
| Aggression in the past | 3.79 ± 2.88 | 3.34 ± 2.76 | 3.73 ± 2.75 | 4.09 ± 2.70 | 3.16 ± 2.52 | 2.18 ^a ± 2.36 | 4.42 (5,360) | .001 |
| Antisociability in the past | 0.56 ± 1.16 | 0.61 ± 1.03 | 0.43 ± 0.76 | 1.26 ^a ± 1.19 | 0.44 ± 0.8 | 0.36 ± 0.83 | 7.76 (5,358) | <.001 |
| Separation | 0.39 ± 0.75 | 0.97 ^b ± 0.91 | 1.09 ^b ± 0.99 | 1.35 ^c ± 0.87 | 1.12 ^b ± 0.88 | 0.71 ± 0.81 | 7.66 (5,377) | <.001 |
| Separation in the past | 1.069 ± 1.65 | 1.154 ± 1.6 | 1.265 ± 1.6 | 1.51 ± 2.02 | 0.625 ± 1.17 | 0.388 ± 0.93 | 4.85 (5,309) | <.001 |
| Impulsivity | 14.16 ± 3.5 | 13.98 ± 3.46 | 13.98 ± 3.67 | 13.59 ± 3.26 | 16.0 ± 3.83 | 18.74 ^c ± 3.3 | 23.12 (5,341) | <.001 |
| Reality testing | 16.09 ± 2.04 | 14.29 ^b ± 2.9 | 15.02 ± 3.22 | 15.31 ± 2.88 | 16.68 ± 2.03 | 16.53 ± 2.62 | 7.89 (5,347) | <.001 |

TABLE 3. IQ scores, as measured by the Extended Milta Test

| Variable | OCD | Psychotic disorders | Mood disorders | Conduct disorder | Eating disorders | Healthy controls | F value (df) | P |
|----------|-------------|---------------------|----------------|------------------|------------------|------------------|--------------|------|
| IQ score | 89.5 ± 0.71 | 110 ± 20.56 | 118.5 ± 2.121 | 96.5 ± 10.66 | 109.8 ± 10.61 | Not tested | 2.04 (4,130) | 0.09 |

All results are mean ± SD.

- disorder ($P < .001$), but more than the normal control group ($P < .001$).
- Precipitating events: The group with OCD had less precipitating events than did the group with conduct disorder ($P < .05$).
 - Affects and behaviors (in last 6 months and in the past): Patients with OCD had more affective and behavioral pathological expressions than did the normal control group.
 - Anxiety (in last 6 months and in the past): Patients with OCD suffered more from anxiety more than did the normal control group.
 - Antisociability: Patients with OCD were less anti-social than the group with conduct disorder.
 - Separation: The group with OCD experienced less separation events than the groups with psychotic disorders ($P < .01$), mood disorders ($P < .01$), conduct disorders ($P < 0.001$), and eating disorders ($P < .01$).
 - Impulsivity: Patients with OCD were less impulsive than the normal controls ($P < .001$).

Reality testing

- Reality testing by the group with OCD was better than that of the group with psychotic disorders ($P < .01$).

EXTENDED MILTA TEST

IQ scores measured by the Extended Milta Test (Table 3) did not distinguish between the diagnostic groups.

OVERT AGGRESSION SCALE

On the Bonferroni post hoc test, patients with OCD differed from the other diagnostic groups in the following (Table 4):

- Self-aggression: Patients with OCD were less self-aggressive than the group with conduct disorder ($P < .001$).

TABLE 4. Behavior during hospitalization, as measured by OAS

| Variable | OCD | Psychotic disorders | Mood disorders | Conduct disorder | Eating disorders | Healthy controls | F value (df) | P |
|---------------------------------------|-----------|---------------------|----------------|-------------------------|------------------|------------------|---------------|-------|
| Verbal aggression | 1.71±1.35 | 1.08±1.33 | 1.04±1.37 | 2.33±1.57 | 1.54±1.41 | Not tested | 4.52 (4,153) | .001 |
| Aggression against others | 1.29±1.42 | 1.03±1.49 | 1.0±1.52 | 1.3±1.41 | 0.83±1.09 | Not tested | 0.49 (4,154) | .74 |
| Self-aggression | 0.95±1.24 | 0.61±1.3 | 1.42±1.75 | 2.89 ^a ±1.63 | 1.71±1.65 | Not tested | 11.81 (4,154) | <.001 |
| Physical restraint due to aggression | 0.16±0.5 | 0.32±0.74 | 0.21±0.59 | 0.29±0.6 | 0.32±0.72 | 0±0 | 0.31 (5,168) | .87 |
| Physical restraint due to suicidality | 0±0 | 0.1±0.44 | 0±0 | 0.53 ^a ±0.75 | 0.5±0.86 | 0±0 | 7.19 (5,168) | <.001 |

All results are mean ± SD.

^aP < .001 versus OCD group.

TABLE 5. Ego defense mechanisms, as measured by the LSI and CSPS

| Variable | OCD | Psychotic disorders | Mood disorders | Conduct disorder | Eating disorders | Healthy controls | F value (df) | P |
|---------------------------|-----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------|-------|
| Denial (LSI) | 7.57±6.33 | 8.85±5.63 | 8.41±3.31 | 8.8±6.16 | 5.3±3.85 | 5.83±2.64 | 4.56 (5,224) | <.001 |
| Repression (LSI) | 5.64±3.82 | 5.9±6.7 | 5.82±5.4 | 6.88±6.33 | 4.17±2.66 | 2.68±1.84 | 5.37 (5,225) | <.001 |
| Regression (LSI) | 8.64±4.47 | 8.4±7.1 | 8.91±8.76 | 9.02±5.73 | 7.39±5.15 | 4.35 ^a ±2.19 | 6.2 (5,225) | <.001 |
| Compensation (LSI) | 6.57±4.4 | 8.17±6.82 | 8.86±7.51 | 7.83±8.73 | 7.22±5.7 | 4.26±1.84 | 4.26 (5,225) | <.001 |
| Projection (LSI) | 9.64±3.93 | 9.9±5.36 | 9.36±4.35 | 10.39±5.59 | 7.94±3.8 | 7.45±2.7 | 3.58 (5,225) | <.001 |
| Displacement (LSI) | 5.64±2.93 | 6.6±5.41 | 6.18±4.56 | 7.02±5 | 5.22±2.13 | 3.91±2.24 | 4.58 (5,225) | <.001 |
| Intellectualization (LSI) | 7.21±4.82 | 8.72±5.68 | 8.86±5.62 | 8.61±5.89 | 7.0±4.79 | 5.4±1.7 | 4.91 (5,225) | <.001 |
| Reaction formation (LSI) | 4.57±2.79 | 6.85±5.64 | 5.41±3.61 | 7.05±5.89 | 5.0±2.61 | 3.47±2.13 | 5.93 (5,225) | <.001 |
| Reaction formation (CSPS) | 2.59±0.66 | 1.71 ^c ±0.72 | 1.81 ^c ±0.74 | 1.89 ^c ±0.79 | 1.88 ^b ±0.92 | 2.01 ^c ±0.71 | 7.07 (5,362) | <.001 |
| Undoing (CSPS) | 2.41±0.71 | 1.58 ^c ±0.66 | 1.85 ^b ±0.78 | 1.66 ^c ±0.75 | 1.62 ^c ±0.73 | 1.67 ^c ±0.64 | 7.58(5,361) | <.001 |

All results are mean ± SD.

^aP < .05 versus OCD group.

^bP < .01 versus OCD group.

^cP < .001 versus OCD group.

- Physical restraints due to suicidality: Patients with OCD needed less the use of restraints due to suicidality than did the group with conduct disorder group ($P < .001$).

LIFE STYLE INDEX AND CHILDHOOD SUICIDE POTENTIAL SCALES MODULE FOR EGO DEFENSE MECHANISMS

All defense mechanism variables measured by the LSI and the CSPS relevant module (Table 5) differed significantly among the diagnostic groups at $P < .001$. On the Bonferroni post hoc test, patients with OCD differed from the other diagnostic groups in the following defense mechanisms:

- Regression: The patients with OCD patients used regression more than did normal controls ($P < .05$).

- Reaction formation (measured by the CSPS): The group with OCD used reaction formation more than did the groups with psychotic disorders ($P < .001$), mood disorders ($P < .001$), conduct disorders ($P < .001$), eating disorders ($P < .01$), and the normal control group ($P < .001$).
- Undoing: The group with OCD used undoing more than did the groups with psychotic disorders ($P < .001$), mood disorders ($P < .01$), conduct disorders ($P < .001$), eating disorders ($P < .001$), and the normal control group ($P < .001$).

DISCUSSION

Our findings partially confirm the hypotheses of the study, which we proceed to explain, and thus outline the uniqueness of the closed ward adolescent inpatient subgroup with OCD in the terms of their demographic characteristics (higher male:female proportion and

lower socioeconomic class), risk factors for suicide, behavior during hospitalization, and the main ego defense mechanisms.

Adolescent inpatients with OCD are known to be a vulnerable population as far as their risk for suicide is concerned. Our first hypothesis was that adolescent inpatients with OCD would present with higher potential of suicidality. The analysis of those particular risk factors indeed showed strikingly higher levels of most of them compared to normal controls and, to less extent, to the other diagnostic groups (Table 2). This is consistent with our previous study, that focused on the comparison of inpatients with OCD to a heterogeneous group of hospitalized patients and normal controls [Apter et al., 2003].

Whereas there was relatively little difference in suicide risk factors between the OCD and the mood disorder subgroups, many more differences were found in the comparison between the OCD and the conduct disorder subgroups, specifically in suicidal thoughts, precipitating events, and both present and past antisociality. It seems that these findings stem from the extroverted behavioral traits of the patients with conduct disorder in the closed ward rather than implying specific characteristics of the patients with OCD. This is also reflected in the high level of self-aggressive behavior and need for physical restraint due to suicidality during the hospitalization of the patients with conduct disorder. Whereas aggression scores (as assessed by the OAS) of patients with OCD did not differ from all other subgroups, the scores for the two previously mentioned OAS items (self-aggressive behavior and need for physical restraint) were markedly higher in the subgroup with conduct disorder than in the subgroup with OCD.

Despite the previously mentioned psychometric finding, our CSPS results support our second hypothesis that adolescent inpatients with OCD present with higher levels of violence and aggression. Aggression levels in the past 6 months were significantly higher than those of the hospitalized patients suffering from psychotic disorders. Importantly, this was not due to antisociality, on which the group with OCD scored low, but more likely stemmed from the inner tension that the disorder itself created. Usually OCD does not require hospitalization. Thus, it is possible that relatively high levels of aggression in some patients with OCD may be a major reason for their hospitalization, although aggressive behavior is not higher than in all other mental disorder that require hospitalization (Table 4).

Furthermore, it is of note that the patients with OCD were at the top on the CSPS scales for both destructiveness and violence, although the finding was statistically significantly higher only compared to the group with eating disorders. Although this is not reflected in the behavior of patients with OCD in the ward, as measured by the OAS (which did not differ compared to the other diagnostic subgroups), these

characteristics of destructiveness and violence should alert the clinician in the process of evaluation and management of patients with OCD in the closed ward. The roles of these characteristics in requiring the hospitalization and as suicide risk factors should be given attention and consideration in further clinical studies. Moreover, the issue of suicidal risk and aggressive behavior has become a matter of debate quite recently in children and adolescents treated with selective serotonin reuptake inhibitors [SSRIs; Brent, 2004]. Thus, it seems of significant interest to evaluate the impact of SSRI treatment on suicidality and violence in pediatric population treated with these agents, especially in hospitalized patients with OCD, who were found in our study to display high baseline levels of these features.

Our findings regarding the use of ego defense mechanisms by the adolescent inpatients with OCD are consistent with psychoanalytic theory. Undoing and reaction formation (measured by the CSPS) were used markedly more by the OCD groups than by all other groups. The negative finding relating to reaction formation as assessed by the LSI was unsurprising, as we have already reported poor correlation between the LSI and the CSPS scales [Apter et al., 1997]. This observation weakens further the construct validity of these scales for measuring reaction formation. Unfortunately, isolation defense mechanism was not studied. Excessive and pathological use of defense mechanisms may be closely linked to suicidal and aggressive behavior that are prominent triggers for psychiatric hospitalization and therefore deserve further study.

OCD has long intrigued psychoanalysts. Although they may disagree about the underlying etiological mechanisms, psychoanalysts generally agree that obsessive individuals are often difficult to engage in the psychoanalytic process and are therefore difficult to treat psychoanalytically [Barth, 1990]. In the psychoanalytic theory, the unconscious conflict between passivity and aggression, or obedience and defiance, may lead to anxiety. The anxiety produced by these conflicts leads to the formation of obsessions and compulsions, as well as defenses of reaction formation, isolation, and undoing. Our results regarding ego defense mechanisms are consistent with these concepts.

LIMITATIONS

Our study has several limitations. First, it focuses on a referred hospitalized population; therefore, conclusions are relevant only to this minority of inpatients with OCD. Second, the role of comorbid psychiatric disorders was not investigated in our study due to its complex nature and a requirement for a larger size population for such an analysis, which is beyond the scope of this study. The issue of comorbid diagnoses is a "hot" topic because, in contrast to some efforts to reveal effects of treatment on more or less "pure"

disorders, the opposite in routine clinical work is normal. It would have been of great interest to look especially in the “contaminated” psychopathology. Other weaknesses of the study are the absence of an assessor blind to diagnostic group and the lack of comparison with an outpatient sample. Further multi-site, large-scale studies, including in- and outpatients, and evaluation of comorbid disorders and their clinical severity, are needed to substantiate our findings.

CLINICAL IMPLICATIONS

The data obtained in this study seem to be helpful in clinical decision-making process, as the severity of the OCD psychopathology is sometimes underestimated because manifestations may be more covert than those of other diagnostic subgroups, such as patients with psychotic or conduct disorders. Moreover, patients with OCD may be secretive about their symptoms. Suicidality in any adolescent patient must be carefully assessed by the evaluation of its different risk factors investigated in the current study. Although not proven in our study, it seems likely that the complex combination of lack of response to outpatient treatment, and aggressive and suicidal symptoms, is leading to hospitalization of some adolescent patients with OCD. Conceivably, meeting the threshold severity criterion for hospitalization implies something unique about the biology, treatment responsiveness, or profile of comorbid conditions of hospitalized adolescents with OCD. Early identification of suicidality and aggression in OCD may help develop and improve community prevention and treatment programs that will reduce the need for psychiatric hospitalization in adolescent patients with OCD.

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