The subthreshold autistic traits in patients with adult-onset obsessive-compulsive disorder: a comparative study with adolescent patients

I tratti autistici sottosoglia in pazienti con disturbo ossessivo-compulsivo a insorgenza nell’età adulta: uno studio comparativo con pazienti adolescenti

CAGDAS OYKU MEMIS, DOGA SEVINCOK, BILGE DOGAN, CANSU BAYGIN, MUTLU OZBEK, AYSE KUTLU, BURCU CAKALOZ, LEVENT SEVINCOK

1Department of Psychiatry, Adnan Menderes University, Aydin, Turkey
2Department of Child and Adolescent Psychiatry, Adnan Menderes University, Aydin, Turkey
3Child Diseases and Pediatric Surgery Training and Research Hospital, Department of Child and Adolescent Psychiatry, Izmir, Turkey
4Department of Child and Adolescent Psychiatry, Pamukkale University, Turkey

SUMMARY. Objective. The primary objective of this study was to compare the adult-onset and adolescent obsessive-compulsive disorder (OCD) patients in terms of the subthreshold autistic traits. Methods. 29 adolescent, and 45 adult-onset OCD patients were assessed by Autism-spectrum Quotient (AQ). Results. The ratio of males to females, the frequency of ritualistic compulsions, and the mean number of lifetime compulsions were significantly higher in adolescents with OCD compared to adult-onset patients. Adult-onset OCD patients had significantly higher scores on total, social skills, attention shifting, and imagination subscales of AQ than adolescent OCD patients. The mean number of compulsions, attention shifting scores of AQ, and female gender significantly predicted the distinction between adolescent and adult-onset OCD patients. In adult-onset patients, there were significant correlations between the mean number of lifetime obsessions and total, social skills, attention switching, communication, and imagination subscale scores of AQ. Conclusions. We suggest that subthreshold autistic traits may play a significant role in the occurrence of obsessive-compulsive symptoms (OCS) in adult-onset OCD. Autistic traits seemed to be higher and had an closer relationship with the frequency of lifetime obsessions in AO-OCD patients than in adolescent patients.

KEY WORDS: autistic traits, obsessive-compulsive disorder, adolescents, adults.

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a heterogeneous neuropsychiatric disorder characterized by recurrent intrusive thoughts and repetitive ritualistic acts. The prevalence of OCD is estimated between 0.5-4% in youngs1,2 and between 2-3% in adults3. Many studies have found that child and adolescent-onset OCD patients had male dominance4,5, more severe and resistant symptoms6-8, a family history of OCD9-11, higher rates of comorbidity with disruptive behavior disorders, attention deficit hyperactivity disorder and Tourette’s syndrome6,9,10,12,13, other anxiety disorders14 than adult-onset OCD. Further, adolescent patients are more likely to present with compulsions15,16, higher rates of aggres-
The subthreshold autistic traits in patients with adult-onset obsessive-compulsive disorder

The subthreshold autistic traits in patients with adult-onset obsessive-compulsive disorder (OCD) may also be related to OCD symptomatology in A-OCD patients as much as or more than in A-OCD patients.

**Materials and Methods**

The individuals with AO-OCD (onset age and current age ≥18 years; n=45), and (A-OCD) (onset age and current age ≤18 years; n=29) who admitted to Adult, and Child and Adolescent Psychiatry Departments were included in the study. The patients were screened by Structured Clinical Interviews for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) Axis I Disorders (SCID-I)20, or Kiddie Schedule for Affective Disorders and Schizophrenia-Present state and Lifetime version (KSADS-PL)27,28. The patients with current and lifetime diagnoses of mental retardation, psychotic disorders, bipolar disorders, alcohol/substance use disorders were excluded from participation. The diagnostic assessment of ASD was made according to DSM-IV-TR criteria for ASD diagnoses such as autism, Asperger’s syndrome, or atypical autism. Detailed information on demographic and clinical features of the sample (age at onset of OCD, gender, the presence of comorbid psychiatric diagnoses) was collected from parents, clinical interviews or retrospective investigation of medical records. We defined age at onset of OCD as the age that the patient, or a family member, remembered as the beginning of the obsessive-compulsive symptoms (OCS). Eighteen participants

**Results**

The general description of the adolescent and adult-onset OCD groups are presented in Table 1. As indicated in Table 1, the ratio of males to females was significantly higher in A-OCD group compared to AO-OCD group (p=0.02). The frequency of ritualistic compulsions (p=0.001), and the mean number of compulsions (p<0.0001) were significantly higher in A-OCD patients than in adult patients. A-OCD patients had significantly higher scores on total (p=0.002), social skill (p=0.03), attention shifting (p=0.004), and imagination (p=0.03) subscales of AQ than A-OCD patients. To determine the variables which would predict the differences between adolescent and adult patients with OCD, six predictors (gender, mean number of compulsions, social skills, attention shifting and imagination subscale scores of AQ, and ritualistic compulsions) were included in a backward multivariable logistic analysis. The final model was found to fit the data adequately (Hosmer and Lemeshow's $\chi^2=5.994$, p=0.540). Overall, the model was able to correctly predict 74.6% of the cases. The mean number of compulsions (Exp(β)=0.457, 95% CI: 0.290-0.721, p=0.001), attention shifting scores of AQ (Exp(β)=1.727, 95% CI: 1.198-2.490, p=0.003), and fe-
male gender (Exp(B)=0.294, 95% CI: 0.088-0.988, p=0.048) significantly predicted the distinction between adolescent and adult patients with OCD (Table 3).

The correlation analyses indicated that the communication subscale scores of AQ were significantly correlated with both the mean number of obsessions (r=0.48, p=0.007), and compulsions (r=0.40, p=0.02) in adolescent patients (Table 4). In AO-OCD group, there were significant correlations between the mean number of obsessions and total (r=0.33, p=0.02), social skills (r=0.36, p=0.01), attention switching (r=0.31, p=0.04), communication (r=0.37, p=0.01), and imagination subscale scores of AQ (r=0.34, p=0.02) (Table 5).

DISCUSSION

The main purposes of the present study were to compare the A-OCD and A-OCD patients with respect to subthreshold autistic traits, and to investigate the relationships of au-
The subthreshold autistic traits in patients with adult-onset obsessive-compulsive disorder

Table 3. Logistic regression model for adolescent and adult OCD patients.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>S.E.</th>
<th>Exp(B) (99% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>The mean number of compulsions</td>
<td>-0.783</td>
<td>0.233</td>
<td>0.457 (0.290-0.721)</td>
<td>0.001</td>
</tr>
<tr>
<td>Attention shifting</td>
<td>0.547</td>
<td>0.187</td>
<td>1.727 (1.198-2.490)</td>
<td>0.003</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.224</td>
<td>0.618</td>
<td>0.294 (0.088-0.988)</td>
<td>0.048</td>
</tr>
<tr>
<td>Constant</td>
<td>0.132</td>
<td>0.934</td>
<td>1.141</td>
<td>0.887</td>
</tr>
</tbody>
</table>

Autistic traits with OCD within two groups. Comparing adult-onset and adolescent OCD patients, we hypothesized that the subthreshold autistic traits might also be related to OCD symptomatology as much as or more than A-OCD patients.

Our results demonstrated that A-OCD group had significantly higher proportion of males compared with AO-OCD group, in accordance with some of the studies. Patients with AO-OCD showed a significantly higher proportion of females compared with adolescent patients, consistent with the findings of Dell’Osso et al. Multiple regression analysis also demonstrated that gender was a strong predictor of adult-onset or adolescent OCD. In this study, age at onset of OCD was not related to the severity of autistic traits within both groups. This finding might indicate that autistic traits have a lifetime and stable course across the patient groups. Autism was traditionally considered as a clinical condition distinct from the general population, but recent evidence suggests autistic traits are continuously distributed across the population from the normal range to the clinical extreme conditions. Autistic traits appear to be moderately stable from childhood to early adulthood. In this study, we also failed to find any significant relationships between the current severity of OCD symptomatology and autistic traits. The high proportion of the patients who were under treatment with antidepressants during the assessment period might partly explain this finding. There is no previous agreement on the specific content of OCS associated with adult-onset and adolescent OCD. In the present study, we have found that A-OCD patients had more compulsions, and higher rates of ritualistic compulsions than those with AO-OCD, in consistent with some of the studies which reported that adolescent subjects had more compulsions and higher rates of aggressive obsessions, and repeating, ordering/arranging and hoarding compulsions compared to adult OCD patients. Our results also demonstrated that the difference between adult-onset and adolescent OCD patients was significantly predicted by the mean number of lifetime compulsions. This finding is in accordance with some

Table 4. Correlations of AQ scores with age at onset and the mean number of lifetime OCS in adult patients (n=45).

<table>
<thead>
<tr>
<th></th>
<th>AQ Total</th>
<th>Age at onset of OCD</th>
<th>The mean number of lifetime compulsions</th>
<th>The mean number of lifetime obsessions</th>
<th>YBOCS Total/obsession/compulsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ Total</td>
<td>0.08</td>
<td>0.24</td>
<td>0.34</td>
<td>0.17/0.19/0.17</td>
<td></td>
</tr>
<tr>
<td>Social skill</td>
<td>0.33</td>
<td>0.13</td>
<td>0.25</td>
<td>0.08/0.05/0.12</td>
<td></td>
</tr>
<tr>
<td>Attention switching</td>
<td>0.18</td>
<td>0.36</td>
<td>0.14</td>
<td>0.26/0.28/0.23</td>
<td></td>
</tr>
<tr>
<td>Attention to detail</td>
<td>0.35</td>
<td>0.12</td>
<td>0.24</td>
<td>0.08/0.12/0.04</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0.16</td>
<td>0.40*</td>
<td>0.48*</td>
<td>0.15/0.18/0.13</td>
<td></td>
</tr>
<tr>
<td>Imagination</td>
<td>0.07</td>
<td>0.16</td>
<td>0.24</td>
<td>0.03/0.05/0.03</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

Table 5. Correlations of AQ scores with age at onset and the mean number of lifetime OCS in adult patients (n=29).

<table>
<thead>
<tr>
<th></th>
<th>AQ Total</th>
<th>Age at onset of OCD</th>
<th>The mean number of lifetime compulsions</th>
<th>The mean number of lifetime obsessions</th>
<th>YBOCS Total/obsession/compulsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ Total</td>
<td>0.05</td>
<td>0.13</td>
<td>0.33*</td>
<td>0.21/0.22/0.19</td>
<td></td>
</tr>
<tr>
<td>Social skill</td>
<td>0.15</td>
<td>0.27</td>
<td>0.36*</td>
<td>0.23/0.21/0.22</td>
<td></td>
</tr>
<tr>
<td>Attention switching</td>
<td>0.17</td>
<td>0.16</td>
<td>0.31*</td>
<td>0.21/0.24/0.18</td>
<td></td>
</tr>
<tr>
<td>Attention to detail</td>
<td>0.06</td>
<td>0.01</td>
<td>0.01</td>
<td>0.21/0.24/0.18</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0.06</td>
<td>0.16</td>
<td>0.37*</td>
<td>0.007/0.06/0.07</td>
<td></td>
</tr>
<tr>
<td>Imagination</td>
<td>0.08</td>
<td>0.28</td>
<td>0.34*</td>
<td>0.21/0.19/0.23</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

Riv Psichiatri 2019; 54(4): 168-174
studies which reported that the frequency of compulsions tended to decrease as age increases. Compared to repetitive motor acts and compulsions, which lessen in frequency as an individual gets older, restricted interests and obsessions continue to persist in older populations. Clinical research demonstrate that autistic traits present in both children and adults with OCD. In our study, AO-OCD patients displayed more severe autistic traits than adolescent subjects with OCD. Particularly, the traits in social skills, attention shifting, and imagination domains were considerably higher in adult-onset than in adolescent OCD patients. Among these traits, attention shifting scores of AQ were found to be the strongest predictor for adult-onset OCD. Similarly, Cath et al. reported that the adult patients with OCD and ASD had significantly higher scores on AQ subscale ‘attention shifting’ than the OCD group. In our study, there were also significant differences between two patient groups in terms associations of autistic traits with the mean number of lifetime OCs. In adolescent subjects, the difficulties in communication was found to be significantly correlated with the lifetime frequency of both obsessions and compulsions. In contrast, there were no relationships between the mean number of compulsions and autistic traits within AO-OCD group. However, the all autistic traits except attention to detail displayed significant correlations with the lifetime frequency of obsessions in these patients. These findings might indicate that subthreshold autistic traits in AO-OCD patients had broader and more intense associations with the frequency of obsessions compared to adolescent patients. A previous study found an overall positive correlation between AQ total scores and YBOCS severity scores. Specifically, attention shifting and communication subscales of AQ subscales were significant predictors of OCD symptom severity while the difficulties in attention to detail demonstrated low correlation with OCD symptoms and severity. Attention switching and communication traits were the most important predictors of ‘aggression and checking’, ‘symmetry and ordering’ and ‘contamination and washing’ symptoms. Some studies found several deficits in focused attention, sustained attention, selective attention, attention span, and information processing in comparison to healthy controls. Clinical symptoms of inattention have been reported especially in pediatric patients with OCD, and children with OCD have shown deficits in selective and focused attention. Difficulties in the social use of language could be a reliable autistic feature. Autism symptomatology in the language and communication domain of impairment can also include a significant delay in the acquisition, comprehension and articulation of speech. Communication with the patient is universally impaired to some degree in autism.

Limitations
The small sample size may prevent the generalization of our findings. Further studies in larger samples are required to confirm the results of this study. Another limitation is that retrospective recall of age at onset of OCD may not reliable and complicate the precise time, in particularly adult patients. Prospective studies on the relationship of stable autistic and schizotypal traits and OCD soon after onset of the disorder may be more confidential. The type and severity of OCs may also differ based on the developmental stage of adolescent or adult patients. Furthermore, young children may not adequately report their symptoms.

CONCLUSIONS
The present study demonstrates the higher association of stable autistic traits with the rate of obsessions among AO-OCD patients compared to adolescent subjects. Therefore, we can conclude that autistic traits may play a significant role in the occurrence of OCs also in later ages. In further studies, the higher rates of autistic traits in adult-onset OCD patients should be explored considering the influences of genetic factors.

In the present study, the greater number of compulsions, a different OC symptom profile, and higher severity of autistic-like traits in AO-OCD patients may indicate that adolescent and adult-onset OCD have different clinical characteristics. Autistic traits seemed to be higher and had a closer relationship with the frequency of lifetime obsessions in AO-OCD patients than in adolescent patients. Higher rates of autistic traits in adult-onset patients may also reflect an important developmental distinction in the relationship of obsession and compulsion components of an OCD diagnosis.

REFERENCES
The subthreshold autistic traits in patients with adult-onset obsessive-compulsive disorder

48. Shin NY, Lee TY, Kim E, Kwon JS. Cognitive functioning in ob-

Riv Psychiatr 2019; 54(4): 168-174

173