

Prevalence and Comorbidity of Adult Attention Deficit and Hyperactivity Disorder Among the Patients Applying to Kocaeli University's Psychiatry Polyclinic

Başak Küçük, *Buket Özkara Yılmaz

Department of Psychiatry, Department of Neurology, Faculty of Medicine, Kocaeli University, Turkey. *Email: buketozkara4188@hotmail.com

Abstract: The present study aimed to determine the prevalence of ADHD diagnosis among the patients applying to adult psychiatry polyclinic for the first time and to determine comorbid diseases among the patients diagnosed with ADHD. The present study was carried out on patients who applied to the Psychiatry Polyclinic in the Medical Faculty Hospital of Kocaeli University Turkey between 10.01.2018 and 03.01.2019, with 151 patients involved in this study. After providing the participating patients with a verbal and written briefing about the study, the Sociodemographic Information Form and AADHDS were given to the participants. DIVA2.0 Adult ADHD Diagnostic Interview Scale and SCID-1 were implemented. As found in DIVA 2.0 ADHD Diagnostic Interview Form for Adults, 19.9% of 151 patients were diagnosed with adult ADHD, and 80.1% were not. Given SCID-1 diagnoses of patients, it was determined that, of the patients diagnosed with ADHD, 16.6% were diagnosed with depression, followed by generalized anxiety disorder (10%), and panic disorder and depression (10%), and that 13.3% of participants were not diagnosed with another disorder. Participants diagnosed with ADHD were found to have lower mean age. Prevalence of ADHD diagnosis was found to be lower among singles and students. The individuals diagnosed with ADHD were found to have a more prolonged education period. The prevalence of ADHD was higher among those who received a disciplinary punishment. Making an accurate diagnosis, designing an appropriate treatment, and determining the comorbidities of ADHD and with which psychiatric disorders it is confused would positively contribute to outcomes of treatments and increase the patients' quality of life.

Keywords: Adult attention deficit; hyperactivity; comorbidity

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is a chronic and neurodevelopmental psychiatric disorder that begins in the early diagnosis period and has prominent symptoms in adulthood. Attention deficit hyperactivity disorder (ADHD) is one of the most frequently seen psychiatric disorders of childhood, and its prevalence was reported to be 5-10% among children and adolescents and 2.5-3.4% among adults^{1,2,3}. Its main symptoms include attention deficit, impulsivity, and hyperactivity, and it causes problems in mental and social fields and educational/occupational areas in adulthood⁴. Although ADHD is one of the most studied disorders among the childhood pathologies, less is known about adulthood ADHD⁵. It was reported that the childhood

Corresponding Author: Buket Özkara Yılmaz

Department of Psychiatry, Department of Neurology, Faculty of Medicine, Kocaeli University, Turkey.
Email: buketozkara4188@hotmail.com

symptoms of those diagnosed with childhood ADHD continue at different ages in 10-79% of cases, and there are differences between the studies on this subject^{6,7}. It was determined that adult ADHD is an essential factor for lifelong psychiatric comorbidity, that adults diagnosed with ADHD showed higher comorbidity rates, and that the treatment costs were at higher levels^{8,9}. The results of previous studies suggested that the psychiatric disorders, which overlap most with adulthood ADHD, include mood disorders, anxiety disorders, and personality disorders.

In contrast, most of the diseases observed together with ADHD were alcohol use, drug use, mood disorders, anxiety disorders, and personality disorders⁹. Adult ADHD is frequently observed, and it is a diagnosis that is commonly overlooked in psychiatry clinics. Symptoms of ADHD negatively affect the functionality levels of individuals. Determining the comorbidities of adult ADHD and which disorders it is confused at most and designing treatments for these disorders would increase the patients' quality of life and decrease the treatment costs.

The present study aims to determine the prevalence of ADHD diagnosis among the patients who applied to adult psychiatry polyclinic for the first time and determine the other psychiatric disorders accompanying the ADHD diagnosis. Examining the population and clinical characteristics of ADHD diagnosis and symptoms is another objective of this study.

MATERIALS AND METHODS

The present study was carried out on the patients who applied to Psychiatry Polyclinic in the Medical Faculty of Kocaeli University between 10.01.2018 and 03.01.2019. The Kocaeli university research ethics committee approved the research. In this period, 151 patients in total were involved in this study. After providing the participating patients with a verbal and written briefing about the study, the Sociodemographic Information Form and AADHDS were given to the participants. DIVA2.0 Adult ADHD Diagnostic Interview Scale and SCID-1 were implemented. (**AADHDS**: Adult Attention Deficit and Hyperactivity Disorder Scale. **DIVA**: Diagnostisch Interview Voor ADHD. **DSM**: The Diagnostic and Statistical Manual of Mental Disorders. **SCID**: Structured Clinical Interview for DSM-IV). Statistical analyses were performed using computer software. This research used multivariate analysis in percentage, based on ADHD value with variables fitness to normal distribution was tested.

RESULTS AND DISCUSSION

Among 151 patients participating in the present study, 95 were female (62.9%), and 56 were male (37.1%). Of patients, 39.7% were married, 53.6% were single, and 6.6% were widowed or divorced. Patients' mean education duration was 10.90 ± 4.35 (0-19) years. Of the patients, 41 were continuing working, 47 were not working or were housewives, 56 were students, and five were retired. It was also determined that 70.9% of 55 individuals, who were working at that moment or have worked before, have not changed their jobs, while 25.3% have done it rarely and 3.6% have frequently changed their positions. Out of 146 patients who had education before or were having an education at that moment, 95.9% have not received any disciplinary punishment, but 4.1% stated that they had received it. Of patients participating in the present study, 11.3% did not get

involved in any judicial case, but 88.7% did, while 2% were sentenced, but 98% were not. Among the patients participating in the present study, 9.7% did not get any traffic ticket, but 90.3% did. It was found that 57% had a familial history of physical disorder, whereas 43% had none. No physical disorder was found in families of 74.8% of participants, whereas anxiety disorder was found in 4%, mood disorders in 15.2%, psychotic disorders in 4%, and other psychiatric diagnoses in 2%. Of the patients participating in the present study, 34.4% had a physical disorder, whereas 65.6% had none. It was determined that 68.2% of participants had an application to the psychiatry polyclinic before, 31.8% had none, 33.8% received or were receiving psychiatric treatment, and 66.2% had no psychiatric treatment before. Among the patients involved in this study, 66.2% were not using any medication, 15.89% were using an antidepressant, 1.98% were using mood stabilizer, 0.6% were using antipsychotic, 11.92% were using multiple psychiatric medications, 2.64% were using methylphenidate, and 0.6% were using other medications.

Table 1: Population and Clinical Features of The Patients (n=151)

Characteristics	Value	
Age (median \pm SS)	32,84 \pm 13,77 (18-64)	
Gender (%)	Female	62,9
	Male	37,1
Marrial Status (%)	Married	39,7
	Single	53,6
	Divorced/widowed	6,6
The year of education (median \pm SS)	10,90 \pm 4,35 (0-19)	
Gender retention (%)	No	82,2
	Yes	7,8
Profession (%)	Working	27,2
	Not working/housewife	31,1
	Student	37,1
	Retired	4,6
Change of job (%) (n=55)	None	70,9
	Rarely	25,3
	Common	3,6
Reasons for change of job (%) (n=16)	Problems at work	31,25
	Marriage	6,25
	Financial reasons	62,5
Disciplinary action at school (%) (n=146)	Yes	4,1
	No	95,9
Forensic event (%)	Yes	11,3
	No	88,7
Criminal Penalty (%)	Yes	2,0
	No	98,0
Traffic fine (%)	Yes	9,3
	No	90,7
Physical illness in the family (%)	Yes	57,0

	No	43,0
Psychiatric illness in the family (%)	None	74,8
	Anxiety disorder	4,0
	Mood disorder	15,2
	Psychosis	4,0
	Other	2,0
Physical illness in him/herself (%)	Yes	34,4
	No	65,6
Psychiatric referral (%)	Yes	68,2
	No	31,8
Dose he/she take medication? (%)	Yes	33,8
	No	66,2
Drugs used (%)	Non drug user	66,22
	Single	15,89
	Antidepressant	
	Mood stabilizer	1,98
	Single Antipsychotic	0,6
	Multidrug	11,92

Table 2: Patients with and without ADHD Diagnosis Polyclinic Diagnosis

Outpatient diagnosis (%)	Daignosis with ADHD (n=30)	Not diagnosed with ADHD (n=121)
Depression	23,3	38,8
ADHD	40,0	0,8
Panic Disorder	6,7	14,8
ADHD+Depression	6,7	0
Psychotic Disorder	6,7	1,6
Common Anxiety Disorder	3,3	9,9
Common Anxiety Disorder +Depression	3,3	4,1
Panic Disoder+ Depresssion	3,3	3,3
Social Phobia+ Depression	3,3	1,6
Bipolar disorder	3,3	3,3
Anxiety Disorder not otherwise spesified	0	0,8
Social Phobia	0	4,9
Specific phobia+Depression	0	0,8
Anksiyete disorder not otherwise spesified+ Depresyon	0	0,8
ADHD + Common Anxiety Disorder	0	0,8
Alcohol-gambling addiction	0	0,8
Somatoform disorder	0	2,4
OCD	0	4,1
Eating disorder	0	0,8
Depression + gambling addiction	0	0,8
Not diagnosed	0	4,8

Table 3: SCID-I Diagnosis of Patients with and without ADHD Diagnosis

SCID-I disorders (%)	Diagnosed with ADHD (n=30)	Not diagnosed with ADHD (n=121)
Depression	16,6	27,2
Common Anxiety Disorder	10,0	4,9
Common Anxiety Disorder +Depression	10,0	14,8
Panic Disorder+ Depression	10,0	9,9
Psychotic disorder	6,6	0,8
Social phobia	6,6	3,3
Social phobia + Depression	3,3	8,2
Anxiety disorder not otherwise spesified+ Depression	3,3	2,4
Specific Phobia+ Depression	3,3	1,6
Bipolar disorder	3,3	3,3
Panic disorder	3,3	4,9
OCD	3,3	2,4
Depression+ OCD	3,3	0
Eating Disorder	3,3	0,8
BTA Anksiyete Bozukluğu	0	1,6
Specific Phobia	0	2,4
Somatoform disorder	0	2,4
Depression + OCD+ Common Anxiety Disorder	0	1,6
Alcohol addiction+ Depression	0	0,8
Not diagnosed	13,8	6,7

Of 151 patients (n=151) involved in the present study, 19.9% were diagnosed with adult ADHD by using DIVA2.0 Adult ADHD diagnostic interview scale, whereas 80.1% were not. The mean score in patients' AADHDS attention-deficit subscale was 8.65 ± 6.93 (0-26), while the mean score in AADHDS-hyperactivity subscale was found to be 4.96 ± 4.03 (0-18), the mean score in AADHDS-impulsivity subscale to be 2.09 ± 2.20 (0-8), mean score in AADHDS-relevant characteristics subscale to be 30.94 ± 17.68 (1-78), and mean score in AADHDS-total to be 46.54 ± 26.45 (1-114).

The mean scores were found to be 2.79 ± 2.72 (0-9) for the positive items in the AADHD attention-deficit subscale, 1.476 ± 1.477 (0-6) for the positive criteria of AADHDS hyperactivity subscale, 0.68 ± 0.90 (0-3) for the positive criteria in AADHDS impulsivity subscale dürtüsellik, and 9.87 ± 7.00 (0-26) for the positive criteria in AADHDS relevant characteristics subscale.

Of 30 patients participating in the present study and diagnosed with ADHD (n=30), 40% were diagnosed with ADHD, 23.3% with depression, 6.6% with panic disorder, 6.7% with psychotic disorder, 3.3% with generalized anxiety disorder, 3.3% with generalized anxiety disorder and depression, 3.3% with panic disorder and depression, 3.3% with social phobia and depression, 3.3% with bipolar disorder, and 2.7% with ADHD and

depression; all of 30 patients were get a minimum of 1 polyclinic diagnosis. Of 121 patients participating in the present study and not diagnosed with ADHD (n=121), 38.8% were diagnosed with depression, 14.8% with panic disorder, 9.9% with generalized anxiety disorder, 4.9% with social phobia, 0.8% with BTA anxiety disorder, 4.1% with generalized anxiety disorder and depression, 3.3% with panic disorder and depression, 1.6% with social phobia and depression, 0.8% with specific phobia and depression, 0.8% with BTA anxiety disorder and depression, 3.3% with bipolar disorder, 1.6% with psychotic disorder, 0.8% with ADHD, 0.8% with ADHD and generalized anxiety disorder, 0.8% with alcohol and gambling addiction, 2.4% with somatoform disorder, 4.1% with OCD, 0.8% with eating disorders, and 0.8% with depression and gambling addiction.

Given the SCID-1 diagnoses of 30 patients participating in the present study and diagnosed with ADHD (n=30), 16.6% were diagnosed with depression, 10% with generalized anxiety disorder, 10% with generalized anxiety disorder and depression, 10% with panic disorder and depression, 6.6% with social phobia, 6.7% With psychotic disorder, 3.3% with panic disorder, BTA anxiety disorder, and depression. 3.3% with specific phobia and depression, 3.3% with bipolar disorder, 3.3% with eating disorders, 3.3% with OCD, and 3.3% with OCD and depression, whereas 13.8% were not diagnosed with any disease. Given the SCID-1 diagnoses of 121 patients participating in the present study and not diagnosed with ADHD (n=121), 27.2% were diagnosed with depression, 14.8% with generalized anxiety disorder and depression. 9.9% with panic disorder and depression, 8.2% with social phobia and depression, 4.9% with generalized anxiety disorder, 4.9% with panic disorder, 1.6% with BTA anxiety disorder, 3.3% with social phobia, 2.4% with BTA anxiety disorder and depression, 3.3% with bipolar disorder, 0.8% with psychotic disorder, 2.4% with somatoform disorder, 2.4% with OCD, 0.8% with an eating disorder, 0.8% with depression and alcohol addiction, and 1.7% with generalized anxiety disorder, OCD, and depression, while 6.7% were not diagnosed with any disorder.

The mean age of 30 individuals diagnosed with ADHD was found to be 24.23 ± 10.09 years, whereas that of 121 individuals not diagnosed with ADHD was 34.97 ± 13.76 years; accordingly, those diagnosed with ADHD were found to be younger than those not diagnosed with ADHD ($p < 0.001$). The rate of ADHD was 32.09% among single individuals and 67.91% among married individuals; accordingly, there was a statistically significant difference between the groups. In post hoc analyses, the ADHD rate was found to be higher among single individuals when compared to married individuals. Similarly, the rate of ADHD was 9.75% among employed individuals, 8.51% among unemployed individuals, 39.28% among students, and 0.0% among retired people. Accordingly, it can be seen that there were differences between groups in terms of having ADHD diagnosis and that the rate of ADHD diagnosis was at a higher level among students. The individuals diagnosed with ADHD were found to have a more prolonged period of education when compared to those who were not diagnosed with ADHD. Compared to those who did not receive disciplinary punishment, the individuals receiving disciplinary punishment were found to have a higher rate of ADHD diagnosis. The rate of ADHD diagnosis was higher among those with a familial history of physical and psychiatric disorders when compared to those who do not have such a family history. The rate of ADHD diagnosis was found to have no significant relationship with gender, grade repetition, judicial case, judicial punishment, traffic ticket, physical disorder, psychiatric application, and use of psychiatric medication.

Prevalence of ADHD among polyclinic patients

In the present study, the prevalence of ADHD among those applying to psychiatry polyclinic for the first time was 19.9%. The prevalence of ADHD among children and adolescents was reported to be 5-10%, while the prevalence among adults was reported to be 2.5-3.4%¹⁰. The high rate found in the present study might be the high share of students in the sample. It might also be because students applied with attention-related complaints or have a high level of awareness of attention problems and, besides, high academic performance expectations.

In clinical studies, it was determined that impulsivity-oriented type is more prevalent at preschool and early elementary school ages, combined-type is more prevalent at secondary school ages, and inattention-oriented type is more prevalent at late elementary school and early high-school ages¹¹. In society-based studies, no such age difference was reported¹². Previous studies emphasized that, towards adulthood, ADHD transformed from combined type to attention deficit type, and the attention-deficit type is more frequently observed among women¹³. This finding was found to be in corroboration with the literature reporting that the attention deficit symptoms continue to adulthood.

Comorbidity among ADHD patients

Given SCID-1 diagnoses of patients involved in the present study, it can be seen that, of ADHD patients, 16.6% were diagnosed with depression, 10% with generalized anxiety disorder, 10% with generalized anxiety disorder and depression, and 10% with panic disorder and depression but 4 of patients diagnosed with ADHD did not receive any diagnosis from SCID-1 scale.

Given the polyclinic diagnoses in the present study, it was determined that of 30 patients diagnosed with ADHD, 40% were diagnosed with only ADHD, 23.3% with depression, and 6.6% with panic disorder. All 30 patients diagnosed with ADHD have received at least one polyclinic diagnosis. Of 30 patients being diagnosed, 14 (46.6%) were diagnosed with ADHD; this finding suggests that adult ADHD is a diagnosis that is unnoticed in polyclinics.

In studies investigating the prevalence of comorbidity among adults with ADHD, the prevalence of major depression was reported to be 16-31% and that of dysthymic disorder to be 12-37%^{14,15}. In a study carried out by Ekici et al., authors reported that anxiety disorder was found in 22.5% of ADHD cases, OCD in 7.5%, and panic disorder in 7.5%¹⁶. In the present study, the most common comorbidity accompanying the ADHD diagnosis was depression and generalized anxiety disorder, and this finding is in corroboration with the literature.

ADHD-related factors

In the present study, the mean age of participants with ADHD was lower than that of those who were not diagnosed with ADHD. A previous study emphasized that hyperactivity decreased with advancing age, but attention problems and impulse control problems may become permanent¹⁷. In their study, Hill et al. stated that the prevalence of ADHD in the early adulthood period was 0.5-1%, while this rate was found to be 0.8% in the 20s but decreased to 0.5% at 40s¹⁸. The finding achieved in this study that symptoms of ADHD decreased with advancing age is in corroboration with the literature.

No significant difference was found between genders in terms of ADHD symptoms in the present study. In a study carried out by Biederman et al., it was determined that there was no significant difference between the genders in terms of ADHD-related disorder's phenotypic expression, lifelong prevalence, accompanying psychiatric disorders, and cognitive and psychosocial functions¹⁹. There also are studies reporting that, when compared to boys, ADHD is seen three times more prevalently among girls in the childhood period. Still, this difference gradually decreases in adulthood and then disappears²⁰. In a study carried out by P.E. Taneri et al., it was determined that there was no difference between women and men in terms of ADHD risk²¹. In the present study, the prevalence of ADHD diagnosis was found to be 23.15% among women and 16.6% among men, but the difference was statistically insignificant.

This study determined that single individuals were diagnosed with ADHD more than married patients were, and their total and subscale scores were also higher. Günay et al. reported that marital status yielded no significant difference in ADHD²². A previous study concluded that the prevalence of ADHD among unmarried individuals is higher than among married individuals²³. This might be because the responsibilities of married individuals regarding their homes and families might force them to be more controlled when directing their feelings and behaviors. Besides that, individuals with ADHD may also have problems maintaining a relationship or a marriage. A previous study reported that adult ADHD cases have problematic social lives, they cannot fulfill their family responsibilities, and they have difficulties in interpersonal relationships²⁴.

In this study, examining the employment status of patients, it was found that ADHD diagnosis is statistically significantly more prevalent among students. In previous studies carried out in Turkey and university students, the prevalence of ADHD symptoms was reported to be between 2.6 and 15.5%²⁵. Compared to their peers, adults with ADHD have a lower rate of college graduation and studying at and graduating a high school but higher job change rates²⁶. In the present study, the mean education duration of participants having ADHD was found to be longer, and this might be because most of the participants diagnosed with ADHD were students.

In a study carried out by Schubiner et al. in the year 2000, among the individuals having ADHD, the rate of alcohol abuse was 27-46%, and that of antisocial personality disorder was 12-27%. The authors reported that the prevalence of ADHD was higher among the patients having alcohol abuse²⁷.

The risk of the judicial case and judicial punishment is higher among individuals with antisocial personality disorder and alcohol/drug abuse. This might be because of ADHD patients and impulsive. ADHD was no significant relationship with judicial cases and judicial punishment in the present study. Moreover, the comorbidity of alcohol-drug abuse was found to be very low. This finding might be because there is no specific treatment unit for alcohol-drug abuse in the general polyclinics. The present study was carried out, and this group of patients might apply less to our facility^{28,10}

In the present study, the rate of the familial background of psychological disorder diagnosis was higher among individuals diagnosed with ADHD. In a study carried out by Güçlü et al., among parents of ADHD cases, the prevalence of mood disorder was found to be 12.3% and that of anxiety disorder to be 8.1%²⁹. In the present study, most of the families of participants diagnosed with ADHD were not diagnosed, and anxiety disorder constituted the majority of diagnoses. In two studies carried out by Biederman et al., the

prevalence of anxiety disorders among first-degree relatives of ADHD cases was found to be 23% and 25% and that of depressive disorders to be 26%, which are higher than among the control group³⁰.

In this study, the low mean age of the patient sample and the fact that approximately one-third of the sample consisted of students is an important limitation that prevents the generalization of the study results. The lack of a specific treatment unit for alcohol use disorders in our outpatient clinic may have created a significant bias when considering the frequency of comorbidity of this diagnosis with ADHD. The absence of screening for Axis II diagnoses did not provide an opportunity to screen for personality disorders accompanying ADHD.

CONCLUSION

Research results found 19.9% of 151 patients were diagnosed with adult ADHD, and 80.1% were not. The symptoms of attention deficit were thought to be more dominant in adult ADHD symptoms. It was observed that diagnosis of ADHD and severity of symptoms were negatively related to a period of education. Using SCID I, the diagnoses accompanying ADHD at most were found to be Depression and Generalized Anxiety Disorder. ADHD is a diagnosis that is frequently confused with other diagnoses and overlooked in polyclinics. Making an accurate diagnosis, designing an appropriate treatment, and determining the comorbidities of ADHD and with which psychiatric disorders it is confused would positively contribute to outcomes of treatments and increase the patients' quality of life.

CONFLICT OF INTEREST

There is no conflict of interest.

REFERENCE

1. Biederman, J. Attention-Deficit/ Hyperactivity Disorder: A Selective Overview. *Biol.Psychiatry* 2005; 57, 1215–1220.
2. Simon, V, Czobor, P, Balint S, Meszaros A, & Bitter, I. Prevalence and correlates of adult attention-deficit hyperactivity disorder: Meta-analysis. *Br. J. Psychiatry*, 2009; 194(3):204–211.
3. Fayyad, J, De Graaf R, Kessler R, Alonso J, Angermeyer M, Demyttenaere K., et al. Cross-national prevalence and correlates of adult attention-deficit hyperactivity disorder. *Br. J. Psychiatry*, 2007; 190: 402–409.
4. Wender PH, *Attention Deficit Hyperactivity Disorder in Adults*. Oxford University Press, New York, 1995; 122-143.
5. Memik NÇ, Önder ME. Erişkin Dikkat Eksikliği Hiperaktivite Bozukluğu. *3P Psikiyatri Psikoloji Psikofarmakoloji Dergisi*, 2004; 12(1):44-56.
6. Shaffer D., *Attention Deficit Hyperactivity Disorder in Adults*. *American Journal of Psychiatry*, 1994; 44:260-268
7. Weinstein C.S., *Cognitive Remediation Strategies: An Adjunct to the Psychotherapy of Adults with Attention Deficit Hyperactivity Disorder*. *Journal of Psychotherapy Practice and Research*, 1994; 3:44-57

8. McGough JJ, Smalley SL, McCracken JT, Yang M, Del'Homme M, Lynn DE, Loo S. Psychiatric comorbidity in adult attention deficit hyperactivity disorder: findings from multiplex families. *Am J Psychiatry*, 2005;162(9):1621-7.69
9. Secnik K, Swensen A, Lage MJ. Comorbidities and costs of adult patients diagnose with attention-deficit hyperactivity disorder. *Pharmacoeconomics*, 2005;23(1):93-102
10. Biederman J, Faraone SV, Keenan K ve ark. Familial association between attention deficit disorder and anxiety disorders. *Am J Psychiatry*, 1991; 148:251-256.
11. Lahey BB, Applegate B, McBurnett K et al. DSM IV field trials for attention deficit/hyperactivity disorder in children and adolescents. *Am J Psychiatry*, 1994; 33:1673-85.
12. Gaub M, Carlson C L. Behavioral characteristics of DSM-IV ADHD subtypes in a school-based population. *J J Abnorm Child Psychol*, 1997; 25:103-11.
13. Alyanak ve ark. Genel Psikiyatri Polikliniinde Erişkin Dikkat Eksikliği Hiperaktivite Bozukluğu Sıklığı ve Dikkat Eksikliği Hiperaktivite Bozukluğuna Eşlik Eden Diğer Psikiyatrik Bozukluklar Nöropsikiyatri Arşivi, 2011; 48: 119-24
14. Murphy K, Barkley RA. Attention deficit hyperactivity disorder in adults: Comorbidities and adaptive impairments. *Compr Psychiatry*, 1996; 37:393-401
15. Biederman J, Wilens T, Mick E, Milberger S, Spencer TJ, Faraone SV. Psychoactive substance use disorders in adults with attention deficit hyperactivity disorder (ADHD): effects of ADHD and psychiatric comorbidity. *Am J Psychiatry*, 1995; 152:1652-1658
16. Ekici S., Öncü B., Canat S., *Anadolu Psikiyatri Dergisi*, 2011; 12:185-191
17. McGough, J. J.; Barkley, R. A. Diagnostic Controversies in Adult Attention Deficit Hyperactivity Disorder, *Am J Psychiatry*, 2004; 161:11, 1948-1956
18. Hill J, Schoener E. Age dependent decline of ADHD. *Am J Psychiatry*, 1996; 153:1143-1147.
19. Biederman, J.; ve arkadaşları. Gender Effects on Attention-Deficit/Hyperactivity Disorder in Adults, Revisited, *BIOL Psychiatry*, 2004; 55: 692-700
20. Greydanus DE, Pratt HD, Patel DR. Attention deficit hyperactivity disorder across the lifespan: the child, adolescent, and adult. *Disease-a-month: DM* 2007;53:70-131
21. Taneri, P.E, Akış N., Sarandöl A., *Uludağ Üniversitesi Tıp Fakültesi Dergisi*, 2016; 42 (1): 23-27
22. Günay, Ş., Savran, C., Aksoy, U. M., Maner, F., Yargıç, İ. & Turgay, A. Bipolar Bozukluk ve Erişkin DEHB Olan Hastalarda DEHB Belirtileri. *Türkiye'de Psikiyatri*, 2005; 7(2), 61-66.
23. Tufan, A. E. ve Yaluğ, İ. Erişkinlerde Dikkat Eksikliği ve Hiperaktivite Bozukluğu: Türkiye Verilerine Dayalı Bir Gözden Geçirme. *Anadolu Psikiyatri Dergisi*, 2010; 11, 351-359
24. Vegt M, Tulen JHM, van Tuijl HR, Twigt CW, Hengeveld MW. Diagnostic assessment of adults referred to a university outpatient clinic for ADHD. *Tijdschr. Psychiatr*, 2007; 49:289-299
25. Doğan S, Öncü B, Varol Saraçoğlu G, Küçükgöncü S. Developmental, academic, and psychological factors associated with attention deficit hyperactivity disorder symptom frequency and symptom level in university students, *Psychiatry in Turkey*, 2008;10:109-15

26. Barkley RA, Fischer M, Edelbrock CS et al. The adolescent outcome of hyperactive children diagnosed with research criteria: I. An 8-year prospective follow-up study. *J Am Acad Child Adolesc Psychiatry*, 1990; 29:546-57
27. Schubiner H, Tzelepis A, Milberger S, Lockhart N, Kruger M, Kelley BJ, Schoener EP. Prevalence of attention-deficit/hyperactivity disorder and conduct disorder among substance abusers. *J Clin Psychiatry*, 2000;61(4):244-51
28. Oya Güçlü, Murat Erkıran Dikkat eksikliği Klinik Psikiyatri, 2004;7:32-41
29. Karahmet E, Konuk N, Dalkılıç A, Saraçlı O, Atasoy N, Kurçer MA ve ark.. The comorbidity of adult attention deficit hyperactivity disorder i bipolar disorder patients *Compr Psychiatry*, 2013; 54(5): 549-555
30. Semerci B, Aksoy M. *Adult Attention Deficit Hyperactivity Disorder Diagnosis and Treatment Manual 1st Edition*, 2018; p:41