



ORIGINAL ARTICLE

Attention-Deficit/ Hyperactivity Disorder in Patients Attending Remedial Treatment Due to Substance Use Disorder in Adiyaman University Training and Research Hospital

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ABSTRACT

Aim: Substance use disorder (SUD) is a serious public health problem. Attention-deficit/ hyperactivity disorder (ADHD) is a neurobehavioral disorder associated with the onset and prognosis of the SUD. This study was conducted to determine the prevalence of ADHD in patients who were referred to a university hospital due to SUD.

Method: The records of 231 psychoactive substance use patients who admitted to Adiyaman University Training and Research Hospital between 2015 and 2017 were retrospectively reviewed and the prevalence of ADHD according to the DSM-5 were examined among the patients diagnosed with SUD per DSM-5.

Findings: Psychiatric disorders such as mood disorder, mood disorder, anxiety disorder and psychotic disorder were seen in 75.33% of the patients. Overall, 32.47% of all SUD patients had a diagnosis of ADHD according to DSM-5 diagnostic criteria.

Discussion: ADHD was present in 3 out of every 10 people with an SUD. The clarification of the relationship between ADHD and the SUD and the determination of the conditions affecting this relationship will provide significant contributions to this field of study. This data should be provided with detailed statistics and should be supplemented by other studies with fewer limitations.

Keywords: Attention-deficit/ hyperactivity disorder, addiction, comorbidity, psychoactive substance

INTRODUCTION

Substance use disorder (SUD) is a serious public health problem in the world and Turkey. The use of substances such as alcohol, opioid, cannabis, and bonzai is increasing and the age of starting to use substance is gradually decreasing (1). According to the report of United Nations Office on Drugs and Crime (UNDOC) published in 2016 including the data of 2014-2015, 5% of the world

population aged 15-64 have used illegal substances at least once in the past year. 0.6% of them are thought to be SUD (2). It is also known that alcohol abuse and dependence is an increasing problem and almost 4% of all deaths worldwide are attributed to alcohol, greater than deaths caused by human immunodeficiency virus/ acquired immune deficiency syndrome (HIV/ AIDS), violence or tuberculosis (3).

Attention-deficit/ hyperactivity disorder (ADHD) is a neurobehavioral disorder characterized by a hereditary neurobiological component that begins in childhood and can persist throughout life with varying degrees of inattention, hyperactivity, and impulsivity. ADHD is associated with behavioral, emotional, neuropsychological deficits, use and abuse of alcohol and other psychoactive

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substances. It affects the academic, family and social success of individuals with ADHD (4). The prevalence of ADHD varies between 5-10% according to the characteristics of the studies (4,6). In Latin America, where substance abuse is intense, it is between 5% and 20% (7,8). Kessler reported the prevalence of adult ADHD as 4.4% (9). It is known that there is a relationship between ADHD and SUD. ADHD is a co-morbid diagnosis showing a bidirectional relationship in terms of onset of substance use and prognosis of substance use. ADHD is an important risk factor for the development of the SUD either directly or through a behavioral disorder. Adjunct ADHD has a negative impact on SUD because the symptoms of ADHD become worse. These patients have a high rate of multiple drug use but a lower compliance rate to treatment programs (9,10).

In our country, a variety of studies have been performed to examine the relationship between SUD and ADHD (11,12). Ozturk and Akay (12) found that the rates of development of disorders such as substance abuse and addiction during adolescence and adulthood in children with ADHD were significantly higher. In this study, 25-50% of adolescents diagnosed with ADHD were reported to have a diagnosis of ADHD. Dogan and Arıkan (13) showed that substance addicts had more problems than alcohol addicts and control group on issues such as impulsivity, school problems and attention deficit. They found higher rates of adult ADHD among addicts. Onal et al. (14) showed that school problems, parental alcohol exposure, are characteristics that determine substance use among those with ADHD symptoms. It is thought that publications that examine the relationship of SUD and ADHD in Turkey are inadequate. In this study, we aimed to determine the frequency of ADHD in male patients who presented to our clinic and diagnosed with SUD.

METHODS

This study is a retrospective, descriptive and cross-sectional study. Patients who were diagnosed with ADHD presented to the psychiatry outpatient clinic of Adiyaman University Training and Research Hospital in 2015 and

2017. All information was obtained from the hospital record system. 268 patients' data were examined. All the psychiatric diagnoses were made by the same psychiatrist (A.K.). The Diagnoses of ADHD and SUD were made according to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) (15). Patients and controls whose data were missing or incomplete on record system were not included in the study. People with risk factors (e.g., hypertension, diabetes mellitus, coronary artery disease, cancer, and hyperlipidemia) that may have an impact on adjustment of patient were not included. Patients with other psychiatric comorbidities (except for major depressive disorder and anxiety disorder, which frequently accompany ADHD and SUD) were not included in the study even though their primary diagnoses were SUD. In our hospital, drug screening is carried out in cases not in all outpatient clinic follow-ups but in some outpatient clinic follow-ups. In this study, attention was also paid to the fact that there was no substance in the urine sample at the time of the diagnosis regarding the use of the systemic substance. Patients who do not obey them are also excluded from work. 298 patients were included in the study. The sociodemographic form was filled out by using the recorded information. This study was approved by the Adiyaman University Training and Research Hospital ethics committee (21.11.2017/8,9). Descriptive statistical procedures were applied using frequency distributions to calculate central tendency percentages and their significance. ADHD frequency was calculated in patients with SUD. SPSS 22.0 and Microsoft Excel were used for data analysis. Statistical significance (p) was accepted as less than 0.05.

RESULTS

Table 1 shows the demographic characteristics of the drug-dependent patients studied. The mean age of the patients included in the study was 30.83 years and 74.84% was between 19 and 34 years of age. The percentage of those who completed secondary education was 40.26%. The majority were unmarried (59.31%).

Table 1: Demographic Characteristics of Substance Dependent Patients (n=231) and ADHD-Comorbid Patients (n=75)

	Comorbid				No Comorbidity		Total	
	ADHD*		Other		Frequency	%	Frequency	%
Age	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<19	12	16.00%	7	7.07%	6	10.53%	25	10.82%
19-24	35	46.67%	46	46.46%	24	42.11%	105	45.45%
25-34	24	32.00%	30	30.30%	14	24.56%	68	29.44%
35-44	4	5.33%	14	14.14%	10	17.54%	28	12.12%
45-54	0	0.00%	2	2.02%	3	5.26%	5	2.16%
55-64	0	0.00%	0	0.00%	0	0.00%	0	0.00%
>65	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Education								
Primary School Unfinished	1	1.33%	0	0.00%	0	0.00%	1	0.43%
Primary School	3	4.00%	1	1.01%	2	3.51%	6	2.60%
Secondary School Unfinished	14	18.67%	13	13.13%	11	19.30%	38	16.45%
Secondary School	31	41.33%	41	41.41%	21	36.84%	93	40.26%
High School Unfinished	6	8.00%	8	8.08%	3	5.26%	17	7.36%
High School	5	6.67%	7	7.07%	7	12.28%	19	8.23%
University Unfinished	13	17.33%	10	10.10%	4	7.02%	27	11.69%
Üniversity	2	2.67%	19	19.19%	9	15.79%	30	12.99%
Marital Status								
No Information	1	1.33%	2	2.02%	1	1.75%	4	1.73%
Single	56	74.67%	49	49.49%	32	56.14%	137	59.31%
Living Together	10	13.33%	22	22.22%	12	21.05%	44	19.05%
Married	5	6.67%	17	17.17%	5	8.77%	27	11.69%
Separated Living	3	4.00%	9	9.09%	7	12.28%	19	8.23%
Widow	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Working Status								
Continuous	3	4.00%	9	9.09%	2	3.51%	14	6.06%
Intermittant	17	22.67%	18	18.18%	24	42.11%	59	25.54%
Unemployed	25	33.33%	33	33.33%	22	38.60%	80	34.63%
Student	30	40.00%	38	38.38%	8	14.04%	76	32.90%
Retired etc.	0	0.00%	1	1.01%	1	1.75%	2	0.87%

*ADHD: Attention Deficit Hyperactivity Disorder

Table 2: Main Dependency by Psychiatric Comorbidity

	Comorbid				No Comorbidity		Total	
	ADHD*		Other		Frequency	%	Frequency	%
Dependent Substance	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Alcohol	12	16.00%	22	22.22%	14	24.56%	48	20.78%
Cannabis	11	14.67%	10	10.10%	8	14.04%	29	12.55%
Cocaine	1	1.33%	2	2.02%	0	0.00%	3	1.30%
Ecstasy	1	1.33%	3	3.03%	2	3.51%	6	2.60%
Two Substance	12	16.00%	15	15.15%	10	17.54%	37	16.02%
Multiple Substance	38	50.67%	47	47.47%	23	40.35%	108	46.75%

*ADHD: Attention-deficit/ hyperactivity disorder

followed by those who lived together and married in a smaller area. Looking at the employment stats, 34.63% were unemployed and 25.54% were working from time to time. 46.67% of patients with ADHD as a comorbid diagnosis were between 19 and 24 years of age. The

mean age was 23.28 years. The rate of completion of secondary education was the majority (41.33%). The majority were single (74.67%). In terms of employment status; 33.33% were unemployed. 40.00% were students and 22.67% had intermittent jobs.

Table 3: Primary Dependence in the Two Psychoactive Substance Group (n=12) and Multiple Substance Group

	Comorbid				No Comorbidity		Total	
	DEHB*		Other		Frequency	%	Frequency	%
Two Substance	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Alcohol	9	37.50%	14	46.67%	6	30.00%	29	39.19%
Cannabis	8	33.33%	4	13.33%	4	20.00%	16	21.62%
Sedative	0	0.00%	2	6.67%	1	5.00%	3	4.05%
Cocaine	3	12.50%	4	13.33%	4	20.00%	11	14.86%
Tobacco	3	12.50%	5	16.67%	2	10.00%	10	13.51%
E-Addiction	1	4.17%	1	3.33%	3	15.00%	5	6.76%
Multiple Substance								
Alcohol	12	31.58%	4	8.51%	3	13.04%	19	17.59%
Cannabis	21	55.26%	13	27.66%	9	39.13%	43	39.81%
Cocaine	5	13.16%	29	61.70%	11	47.83%	45	41.67%
Opiate	0	0.00%	1	2.13%	0	0.00%	1	0.93%

*ADHD: Attention-deficit/ hyperactivity disorder

174 (75.32%) of the patients (n=231) were found to have some psychiatric comorbidity such as mood, anxiety, psychotic or organic disorders. There was no information on the evaluation of personality disorders in the records examined so no analysis was performed. Of the patients, 75 (32.47%) were found to meet the criteria of ADHD that accompanies any SUDs.

Table 2 shows the relationship between the prevalence of ADHD and the diagnosis of drug addiction: 50.67% of those with ADHD had multiple drug addiction, 16.00% were dependent on two substances, and 1.33% had cocaine dependence. Table 3 indicates subgroups of substances in people who use multiple substances.

DISCUSSION

In this study, we found that approximately 32.47% of the prevalence of ADHD was in the SUD patients who presented for treatment. In a meta-analysis, van Emmerik stated that a mean of 23.1% of the individuals with SUD met the criteria for ADHD as a comorbid diagnosis (10). In the literature, the estimated prevalence of ADHD in the SUD varies considerably from 2% to 83%. It is thought that the differences in our study may be due to clinical interview and assessment of all substance dependence (8,10).

The prevalence of ADHD in children is approximately 5% and in adults approximately 4% (5,8). Therefore, our prevalence suggests that ADHD is seen more often in the substance dependent population than in the general

population, thus creating a public health problem that requires a broad and multidisciplinary approach. Three of the 4 ADHD patients had a diagnosis of bipolar disorder, depressive disorders, anxiety disorders, and organic disorders. Personality disorders were not addressed in our study. It is possible to say that the difference in the diagnosis we have in our study is due to the population we studied. However, this rate may be higher in hospitals offering addiction treatment services. Such a situation will require constant staff training and the need to reorganize psychiatric services to face these complex problems.

The average age of the patients who participated in the study was 23 years, most of them in 19-24 age group. The literature review showed that the highest prevalence was found in adolescence and early adulthood, and matched our findings with international trends. Therefore, ADHD is associated with adverse effects on the SUD process. Because it tends to become dependent at younger ages and tend to stay at the hospital more frequently (1,16,18). While the demographic characteristics of ADHD peer-diagnosed SUD patients were observed, most of them were found to be alive. Almost half of the patients were unemployed, and one in four had been in short-term jobs. These findings are consistent with patient characteristics in the literature (18,20).

Adequate data are available in patients with ADHD comorbidity compared to those without ADHD comorbidity in terms of substance use/abuse in the early

stages. poor progression of ADHD symptoms. multiple drug use rates. and progress toward more addictive and illicit drug use (19). In our patient group. the rate of multiple drug use was 3/2. They were also observed to be more drug-dependent and showed more intravenous drug use rates. In this group. rates of multiple substance use were higher in those with ADHD comorbidity. Cocaine use was the most common in this group. These results can be explained by the fact that ADHD patients use substances to treat themselves (self-medication) (18,20).

Nowadays it is accepted that alcohol-substance use disorders have genetic. biological and psychological causes and is viewed as disease that should be treated. The SUD-ADHD relationship affects the likelihood of compliance and success in the treatment of probable SUD for people with and without ADHD. This relationship has been studied in many studies. People continue to use the substance in increasing quantities to relive the temporary relief. which causes addiction. Individuals with ADHD are more nervous. uneasy. and difficult to postpone their

requests compared to others. making them prone to substance use (11,14).

As a result. ADHD was present in 3 of 10 drug-addicted patients. Clinical psychiatric disorders were found to be highly comorbid (75%) in male patients who were admitted and treated due to SUD.

Our work has several limitations. Retrospective study design is the most important limitation. Another limitation is the lack of support for our results with the scale data associated with the SUD and ADHD. The severity of addiction and the presence of comorbidity are increasing in places that offer more specialized services. For this reason. our results cannot be generalized to the whole population. Cohort studies and/or case-control studies are recommended to determine detailed relationships.

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