



Evaluation of awareness in primary health care facilities in terms of adult attention deficit hyperactivity disorder

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Abstract:

Adult Attention Deficit Hyperactivity Disorder (ADHD) is the most frequently diagnosed and treated disorder in psychiatry. It is still not sufficiently recognized in adult psychiatry, is often overlooked, and cases that apply to psychiatry for the treatment of ADHD-related problems are tried to be treated with other diagnoses. The aim of our study is to measure the awareness levels of family physicians for ADHD. A 'questionnaire form' was prepared in the Google Forms program, information about the study was added to the survey clearly and sent to family physicians via message. Question that physicians knew the most was whether adult ADHD was a treatable disease. 79% of physicians answered this question correctly. Questions evaluating whether it was known that patients with ADHD had low functionality, frequent problems with the law, high economic losses and high marital-partner problems, and approximately 84% of physicians answered negative. 87% of physicians stated that they had never actively participated in the follow-up and treatment of ADHD. 79% of physicians stated that they were not aware of the Adult ADHD diagnostic criteria. Another question in which physicians' awareness was determined to be low was whether it was known that ADHD diagnosis accompanied many psychiatric diseases, and 77% of physicians answered negative. Although the variety of symptoms, high frequency of additional diagnoses, lack of knowledge and experience of physicians regarding this disease and its symptoms cause difficulties in diagnosis and treatment planning, it is possible to increase the quality of life and functionality of patients and to improve the prognosis. For this reason, it will be of great importance for the patients diagnosed and under treatment by psychiatrists to be followed up by physicians in primary health care institutions.

1. Introduction

It is stated in the definition of the World Health Organization that health consists of physical, spiritual and social elements and that a problem in one of them will negatively affect the others. The scientific perspective that forms the basis of this definition reminds us that humans are biopsychosocial beings and that it is necessary to approach health problems holistically. Among health-related professions, mental health is perhaps the field of study that requires interdisciplinary thinking and work the most. Knowledge of biology, psychopharmacology or neurology alone is not sufficient to analyze people's mental problems and the complex nature of diseases. To understand a mental problem, a professional team is essential, each working with knowledge of the other's professional role and limitations. This team works

together in the context of a biopsychosocial approach. Primary care is the first medical contact point of individuals in the provision of health services. For this reason, the examination of admitted patients should be done with a holistic approach, the individual should be evaluated from a biopsychosocial perspective and a decision should be made [1]. Adult Attention Deficit Hyperactivity Disorder (ADHD) is the most frequently diagnosed and treated disorder in child and adolescent psychiatry [2]. ADHD, whose prevalence is reported to be between 2.5-4.9% in the general population in adults, is still not sufficiently recognized in adult psychiatry, is often overlooked in adults, and cases that apply to psychiatry for the treatment of ADHD-related problems are tried to be treated with other diagnoses [3,4,5]. It is estimated that approximately 90% of adults with ADHD remain untreated [6]. On the other hand, studies accept that 50% to 60% of

individuals diagnosed with ADHD will continue to have the disease into adulthood [7]. ADHD symptoms, which are accompanied by extremely difficult diagnostics, lead to low levels of success in work and education, mood swings in family and social life accompanied by low self-confidence, increased criminal activity and legal problems, and substance and alcohol use disorders [7]. ADHD is a syndrome that can be treated by developing the person's self-awareness, psychopharmacological treatment and psychotherapy methods. For this reason, it is of great importance to diagnose ADHD and refer them to psychiatry clinics when necessary. The aim of our study is to measure the awareness levels of family physicians who currently provide services in the first stage for the diagnosis of adult ADHD and to shed light on plans for what can be done in this regard in the future.

2. Material and Methods

A specially prepared 'questionnaire form' was used by the researchers for the purpose of the study. The survey (Figure 1) was prepared in the Google Forms program, information about the study was added to the survey clearly and sent to family physicians via message. The Voluntary Consent Form "I have read the information about the study and I agree to participate in the study" section was added to the beginning of the surveys and consent was obtained from the participants. 68% (340 people) of the 500 family physicians who were directed to the survey online agreed to participate in the study.

2.1 Evaluation of data

The data obtained from the study were transferred to the SPSS Statistics 22.0 program. Supplementary statistics such as frequency, percentage, mean and standard deviation were used.

The sum of the responses given by the individuals to each question in the ADHD awareness survey was taken and the average values were calculated.

In the evaluation of the data, the significance test of the difference between two means in independent groups and one-way analysis of variance were used. The level of statistical significance was accepted as 0.05.

The knowledge of the physicians was tested with 16 multiple-choice questions, and the knowledge score was calculated by giving the value 1 to the correct answers and 0 to the wrong and I don't know answers.

The survey topic was not notified in advance in order to measure the awareness and knowledge level of the physician at that moment.

2.2 Ethical aspects of the research

This study was conducted in accordance with the principles of the Declaration of Helsinki. The local ethics committee approved the study protocol (Samsun University Ethical Committee For Noninvasive Clinical Research, protocol code: GOKAEK-2024/22/5, date: 04.12.2024).

3. Results and Discussions

The average age of the 340 physicians participating in the study was 42.7 ± 9.2 (minimum 26, maximum 65 years). 57.6% (n=196) of the participants were male, and their average length of service was between 5-10 years. 42.3% (n=144) of the physicians were female, and their average length of service was between 5-10 years. 35% (n=120) of the entire group had 0-5 years of experience, 38.6% (n=130) had 5-10 years of experience, and 26.4% (n=90) had more than 10 years of experience. According to the physicians, the average registered population was 2250 ± 23 individuals, and the average number of patients they see in a day was 30 ± 3 . Of all physicians, 93.5% (n=318) did not attend any training on Adult ADHD after graduation and 90.8% (n=309) never diagnosed Adult ADHD. The rate of correct answers to questions about diagnosis methods and treatment was found to be statistically significantly higher in the group of physicians who attended any training group on ADHD after graduation compared to the group who did not receive training ($p < 0.001$). When asked about their practical applications regarding ADHD patients, 3% stated that they referred to a specialist with a preliminary diagnosis of Adult ADHD. 70% (n=238) of the physicians did not have an adult ADHD diagnosis themselves or their relatives, 17.1% (n= 58) of the physicians had only a relative diagnosed with ADHD, and 3.8% (n=4) of the physicians had both a relative and a relative diagnosed with ADHD. Among the physicians participating in our study, the prevalence of ADHD was 3.8% (n=13) and the female/male ratio was found to be 1.16. The average knowledge scores of physicians who had a diagnosis of ADHD themselves and/or a relative were found to be higher than those who did not ($p=0.02$). The median knowledge scores of physicians was 7 (minimum 4, maximum 11 points). The average knowledge scores of female physicians ($p=0.03$) and those who had been in the profession for 0 to 5 years were found to be statistically significantly higher than the other groups ($p=0.016$). When the answers given to the questions were evaluated, the question that physicians knew the most was whether adult ADHD was a treatable disease. Seventy nine percent of

ATTENTION DEFICIT HYPERACTIVITY DISORDER AWARENESS SURVEY

1. How many years have you been doing your job?

- a. 0-5 years
- b. 5-10 years
- c. More than 10 years

2. How many patients do you see on average per day? (Write an approximate number)

3. How many patients are registered under your name? (Write an approximate number)

4. Have you ever been diagnosed with ADHD in your life?

- a. Yes
- b. No

5. Are there any first-degree relatives diagnosed with ADHD and followed up with this diagnosis?

- a. Yes
- b. No

6. Have you actively worked in the follow-up and treatment of adult ADHD patients in your professional life?

- a. Yes
- b. No

7. Do you know the clinical diagnostic criteria used in the diagnosis of adult ADHD?

- a. Yes
- b. No

8. Do you know how adult ADHD is diagnosed?

- a. Yes
- b. No

9. Are you aware of the existence of psychometric scales used in diagnosing adult ADHD?

- a. Yes
- b. No

10. Have you ever referred a patient you thought was diagnosed with adult ADHD to a psychiatric clinic?

- a. Yes
- b. No

11. Do you know that adult ADHD is a treatable disease?

a. Yes

b. No

12. Do you know that adult ADHD can be accompanied by many psychiatric diseases?

a. Yes

b. No

13. Have you ever received training on the approach prescribed for patients with adult ADHD in primary care?

a. Yes

b. No

14. Do you know that patients with adult ADHD encounter many negative situations due to their low functionality in daily life?

a. Yes

b. No

15. Did you know that adult ADHD patients have higher rates of traffic accidents, encounter legal problems, and commit crimes than the normal population?

a. Yes

b. No

16. Did you know that adult ADHD patients have lower work efficiency, experience socioeconomic losses, and have higher rates of marital and partner problems, and that all of these problems can significantly deteriorate the quality of life of patients?

a. Yes

b. No

Figure 1. Attention deficit hyperactivity disorder awareness survey

physicians answered this question correctly. The questions that physicians knew the least were questions 14, 15 and 16. These questions included the clinical reflections of Adult ADHD, whether it was known that patients with ADHD had low functionality, frequent problems with the law, high economic losses and high marital-partner problems, and approximately 84% of physicians answered no to these questions. Eighty seven percent of physicians stated that they had never actively participated in the follow-up and treatment of patients diagnosed with Adult ADHD during their time in the profession. 79% of physicians stated that they were not aware of the Adult ADHD diagnostic criteria, how the diagnosis was made and the existence of psychometric tests used in making the diagnosis. However, another question in which physicians' awareness was determined to be low was whether it was known that Adult ADHD diagnosis

accompanied many psychiatric diseases, and 77% of physicians answered no to this question.

The purpose of the study was explained in writing at the beginning of the surveys shared with the participants that participation in the study is completely voluntary, the answers given by the participants will be kept confidential and will be used only for scientific purposes. The main finding of this study is that family physicians who first encounter patients with adult ADHD in the field have low levels of knowledge and awareness about this diagnosis. Towards the end of the last century, a different approach has emerged in health services in the world. In this new approach, the role of the disease and the family in controlling the disease is emphasized as much as laboratory tests, imaging methods and pharmacological treatments. In this approach called the biopsychosocial approach, not only biological factors but also psychological and

environmental factors are taken into consideration [1]. Many problems are encountered in the integration of mental health services into primary health services. The main problems are; the society's approach to mental health diseases, the physicians' approach to mental diseases and lack of education, problems related to laws and organization [8-10]. The stigmatization and isolation of patients with mental health disorders from society are very important obstacles to the treatment of mental diseases, whereas most mental diseases can be treated and individuals can live as healthy, useful individuals for society [1]. Another factor in the lack of sufficient attention to mental health services in primary care is that physicians generally lack psychiatric interview skills and are reluctant to perform these practices because they increase their workload. However, the recognition of mental disorders in primary care and the treatment plan may also depend on the psychopathological characteristics of the disease. Various researchers have stated that there is a group of psychiatric disorders that are easily identified, relatively more distinct, and comply with official psychiatric classifications. However, they have also pointed out that a significant group of diseases cannot be easily classified by physicians. In many patients, the symptoms may not meet the criteria for a specific mental disorder and this may increase the diagnostic difficulty of the primary care physician [11-13]. Clinical symptoms for ADHD may be in the group that physicians may often miss and that may cause problems in referring to specialist physicians. The situation is the same for individuals with ADHD syndrome. Due to the fear of stigmatization, most of these individuals do not apply to clinics, and even if they do, they either refuse or do not continue treatment because they do not have sufficient information and awareness about this disease. For this reason, the contribution of the primary care team in continuing treatment, making a diagnosis, and controlling the symptoms may be quite high. In a recent longitudinal study conducted in our country, the prevalence in the 2nd, 3rd, 4th and 5th grades of primary school was determined as 13.4%, 12.5%, 12.2% and 12.9%, respectively [14]. ADHD continues in adolescence at a rate of 60-85% and in adulthood at a rate of 40-60% [7]. The continuation in adulthood was found to be associated with individual factors such as low intelligence level, severity of ADHD and number of comorbidities, and factors such as the presence of psychopathology and ADHD in the family, problematic parenting approaches and low socioeconomic level, psychosocial stressors, receiving late treatment or failure to apply holistic treatment methods [15,16]. The most common diagnoses accompanying adult

ADHD are anxiety disorders (40-60%), dysthymia/major depressive disorder (35-50%), substance use disorders (most commonly nicotine, 40-50% throughout life), alcohol use disorder (27-46%), tic disorders (approximately 11%), eating disorders (especially bulimia nervosa, 3-9%). The rates of ADHD diagnosis accompanying psychopathologies in adult individuals have been reported as 13-20% for mood disorders, especially in early-onset and treatment-resistant cases), 12-15% for substance use disorders, and approximately 10% for anxiety disorders [15-21]. In contrast, in our study, we found that physicians' awareness levels regarding the possibility of many psychiatric disorders comorbid with adult ADHD are quite low. ADHD is a neurodevelopmental disorder [22]. This aspect has been concretized by the evaluation of the disorder in the category of neurodevelopmental disorders in DSM-5; in this sense, the diagnosis of ADHD requires the clinician to know the basic developmental stages and the development of mental organization and to have a good understanding of developmental psychopathology. ADHD is defined by a pattern of attention deficit, hyperactivity and impulsivity that leads to significant disruptions in development and functionality. These three clusters of symptoms constitute the main components of the diagnosis of ADHD. Symptoms of attention deficit can be defined as difficulty in focusing and maintaining attention, organizational problems due to inadequacy of executive functions. Hyperactivity can be defined by symptoms such as not being able to sit still, moving quickly as if the motor is stuck or swinging the arms and legs, and talking too much. Impulsivity can be defined by actions that are taken suddenly without considering the consequences and that can potentially harm the person. Impulsivity also includes the components of inability to delay gratification and reaching the reward quickly. Impulsivity is a symptom cluster in which a person makes important life decisions without much thought and can lead to vital consequences [23]. While symptoms of hyperactivity and related findings are prominent in childhood, symptoms related to attention deficit and executive function inadequacy are important in adults. These functions are responsible for the execution of complex functions that include result-oriented problem-solving skills for a specific purpose and include the appropriate direction and integration of information [24, 25]. Problems related to executive functions are important in completing tasks and interacting with other employees to create an efficient work output. The low inhibition threshold of individuals diagnosed with ADHD causes them to change jobs at a higher rate and to show a lower level of success in school and workplace compared to their

intellectual capacity [26]. Frequent job changes without thinking, projects that do not finish due to timing or missed meetings, and documents lost due to organizational problems cause the person not to be productive in proportion to their capacity. At the same time, frictions with other employees due to rapid arousal create problems in the workplace. In this sense, problems experienced in workplaces and employment problems in adult life should be taken into account in the diagnosis of ADHD [27]. In our study, one of the questions investigating the awareness level of physicians regarding adult ADHD symptoms was “Did you know that these individuals encounter many negative situations due to their low functionality in daily life?” While 37% of the physicians answered “yes” to this question, 84% of the physicians answered “no” to the questions measuring the awareness level of physicians regarding the fact that adult ADHD patients may experience partner problems, have frequent marital problems, and experience socioeconomic losses. On the other hand, many studies report that the hyperactive and impulsive behaviours of individuals diagnosed with ADHD create tension in family relationships. Individuals diagnosed with ADHD may have difficulty establishing and maintaining long-term relationships, and it has been revealed that these individuals experience more divorce and separation [28,29]. It has been reported that when a parent has a child diagnosed with ADHD, the parent with ADHD has more organizational difficulties, difficulties in establishing a daily routine and managing stress, and that non-compliance with ADHD treatment and family disintegration are more common [26]. It has been shown that ADHD diagnosis negatively affects adult reproductive health, and that they become sexually active earlier and have a greater risk of contracting sexually transmitted diseases [30]. In our study, 73% of the questions evaluating the awareness level of physicians regarding the fact that patients with adult ADHD frequently encounter legal problems and have high rates of committing crimes were answered as no. On the other hand, in ADHD, when the threshold of neural response to emotional stimuli is very low, violent emotional responses can be given to events that can be considered as common [30]. The probability of committing a crime increases with age. In particular, the possibility of a neurophysiological problem such as low intelligence level and learning disability together with ADHD increases this probability [31]. Although aggression is not a sufficient and necessary symptom for the diagnosis of ADHD, it is seen in more than 50% of patients [32]. In addition, problems such as substance and alcohol use, personality disorders,

anxiety disorders and depression seen together increase the probability of committing a crime. All these negatively affect people's social communication, professional life, marriages as well as their relations with the law [33]. All evidence shows that failure to treat ADHD leads to increased crime rates [34, 35]. Although the variety of symptoms in ADHD, the high frequency of additional diagnoses, and the lack of knowledge and experience of physicians regarding this disease and its symptoms cause difficulties in diagnosis and treatment planning, it is possible to increase the quality of life and functionality of patients and to improve the prognosis. Published guidelines and clinical practices in ADHD reveal that pharmacological treatment is a preliminary treatment for an effective treatment. In cases with accompanying substance use disorder and other disorders, in case of unresponsiveness to treatment or in case of side effects due to drugs, the need for additional treatment also increases [36]. It should not be forgotten that pharmacotherapy, which is recommended as the first-line treatment, is the preliminary component of comprehensive treatment that also includes psychoeducation, counselling, environmental structuring and psychosocial interventions. Psychoeducation, for both the patient and their relatives; it can be said that it is a relatively new treatment option that includes the goals of “providing information about diagnosis and treatment”, “developing coping and problem-solving skills”, and “emotional support and empowerment” [37]. For this reason, it will be of great importance for the patients diagnosed and under treatment by psychiatrists to be followed up by physicians in primary health care institutions.

4. Conclusions

It is vital to increase awareness of primary care physicians about adult ADHD in order to provide good quality healthcare and rehabilitate patients' functionality and empower their struggle to live a functional life just like a healthy individual. Health care is studied and reported in the literature [38-41].

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
- **Conflict of interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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