

Behavioral Disorders in Children: An Example of Primary Health Care

Çocuklarda Davranış Bozuklukları: Birinci Basamak Sağlık Hizmet Örneği

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ABSTRACT

Background-aim: In this study; it is aimed to evaluate the destructive behavioral disorders in children between the age of 6-18 years old who applied to various family health centers in Ankara.

Method: The study was conducted as a cross-sectional study including 674 children and 337 parents who applied to family health centers in 4 different districts in Ankara. It is organized according to STROBE criteria. **Results:** 54.4% of the children were boys and 45.6% were girls. In children, attention deficit - hyperactivity disorder was found to be 9.9%, oppositional defiant disorder was 9.9% and behaviour disorder was 3.0%. Compared to married couples, attention deficit hyperactivity disorder was significantly more prevalent in children of divorced parents. Behaviour disorder was found to be significantly higher in families with low income. Diagnosis of attention deficit-hyperactivity was higher in boys than girls. Children with chronic illnesses and history of major accident ,poisoning or severe febrile disease had a significantly higher incidence of oppositional defiant disorder than healthy children and children who do not have any history.

Conclusion: Primary health care institutions have a strategic position in recognizing childhood mental/ behavioral disorders, it is important to increase the number of studies related to the subject in terms of protecting the social mental health.

Key Words: behavioral disorders, primary health care, hyperactivity disorder, oppositional defiant disorder, children, family health centers

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ÖZET

Amaç: Bu çalışmada; Ankara'da farklı aile sağlığı merkezlerine başvuran 6-18 yaş arası çocuklarda yıkıcı davranış bozukluklarının değerlendirilmesi amaçlanmıştır. **Materyal-Metod:** Çalışma Ankara'nın 4 farklı ilçesinde aile sağlığı merkezlerine başvuran 674 çocuk ve 337 anne-babanın katıldığı kesitsel bir çalışmadır. STROBE kriterlerine göre düzenlenmiştir.

Bulgular: Çocukların %54.4'ü erkek,%45.6'sı kızdı. Çocuklarda dikkat eksikliği-hiperaktivite bozukluğu% 9.9, karşıt olma karşı gelme bozukluğu% 9.9 ve davranış bozukluğu% 3.0 olarak bulundu. Evli çiftlerle karşılaştırıldığında, boşanmış ebeveynlerin çocuklarında dikkat eksikliği hiperaktivite bozukluğu anlamlı olarak daha yaygındı. Düşük gelirli ailelerde davranış bozukluğu anlamlı derecede yüksek bulunmuştur. Dikkat eksikliği-hiperaktivite tanısı erkeklerde kızlara göre daha yüksekti. Kronik hastalıkları olan ve büyük kaza, zehirlenme veya şiddetli ateşli hastalık öyküsü olan çocukların, karşı gelme bozukluğu prevalansı sağlıklı çocuklara ve öyküsü olmayan çocuklara göre anlamlı derecede daha yüksektir.

Sonuç: Birinci basamak sağlık kurumları, çocukluk çağı ruhsal bozukluklarının tanınmasında stratejik bir konuma sahiptir, konuyla ilgili çalışmaların sosyal ruh sağlığının korunması açısından artırılması önemlidir.

Anahtar Sözcükler: Davranış bozukluğu, birinci basamak, hiperaktivite bozukluğu, karşı gelme bozukluğu, çocuklar, aile hekimliği

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INTRODUCTION

Child mental health is one of the most important health problems of today in terms of affecting the quality of life of both the child and the family. The incidence of psychiatric disorders in children, one of the groups most frequently served by primary health care institutions, is increasing (1). In an epidemiological study in the United States, it was shown that approximately 21% of children aged between 9 to 17 meet the criteria for mental illness and of these individuals 11% is remarkably and 5% is severely have impaired functioning (2). In the literature, there are studies reporting that 25% of pediatric outpatient admissions are due to psychiatric or behavioral problems (3), but these problems usually do not attract enough attention under the outpatient clinic's conditions (4). It is considered that primary health care institutions have an ideal position in addressing these problems in children and adolescents hence these groups apply regularly and exhibit existing psychosocial or behavioral problems frequently (5). In a study, it was reported that only 18% of child mental health problems were diagnosed in primary care, which is also usually investigated due to parent's anxiety (6). Another study reported that the number of primary care physicians using clinical screening scales or working with another healthcare professional is very low (7). The low rates of the use of scales is more remarkable in recognition of psychosocial problems, especially when Attention Deficit Hyperactivity Disorder (ADHD) is not considered (8). It is known that mental problems associated with the adult period usually begin in childhood (approximately half of the cases present until 14 years old), and have a chance of early diagnosis and intervention. In addition; childhood psychological problems usually respond to appropriate treatment modalities and the improvement of functioning at a significant level comprises great importance in terms of early diagnosis and treatment of these problems (1,9). ADHD and disruptive behavior disorders are the most common psychiatric problems in children (10,11).

ADHD begins in early childhood and causes problems in psychological life and social and education / occupation areas in adulthood (12). Worldwide prevalence has been reported as 5-12% in children (13). Conduct disorder is a group of behavioral and emotional problems that usually begins during childhood or adolescence. Children and adolescents with the disorder have a difficult time following the rules and behaving in a socially acceptable way. Frequencies varying between 1% and 16% are given for the due to differences in study methods (14).

Oppositional defiant disorder (ODD); a disorder involving repetitive, adverse opposition, disobedience and hostile behavior towards the elders for at least 6 months. With being more common in males, it is seen in about 2-16% of school-aged children (15). Oppositional behaviour is often a normal part of development for two to three years old and early adolescents. However, openly uncooperative and hostile behaviour becomes a serious concern when it is so frequent and consistent that it stands out when compared with the other children of the same age and developmental level when it affects the child's social, family and academic life. Hence the early onset of these disorders can be diagnosed early, they can also be treated during childhood and become healthy individuals in adulthood. This issue has not been examined previously in primary health care institutions, where the accessibility to this group of population is easier. There is no similar study conducted in our study area previously. In this study; It was aimed to evaluate the destructive behavioral disorders in children between 6 to 18 years old who applied to some family health centers in Ankara city center.

METHODS

The study was conducted as a cross-sectional study with the participation of people who applied to eight chosen primary health care institutions with children between the ages 6 to 18 years in the capital city of Turkey. Questionnaires were performed as face to face. An average of 2100 patients apply to those chosen eight primary health care institutions per week. In this population, it is aimed to reach minimum 325 people with 50% of the unknown frequency, 5% deviation and 95% confidence interval. Systematic sampling was used as the sampling method. We have reached 675 parents, 319 were excluded because their kids with were out of our age range. 19 people were not included because they did not want to answer the questionnaire. 337 parents who met the criteria were interviewed. A total of 698 questionnaires were filled.

One questionnaire was completed for each child aged between 6 to 18 years old. 24 of the questionnaires were excluded due to incompatibility of the data and as a result 674 questionnaires were taken into consideration. We have permission of the ethics committee from Gazi university medical faculty ethics committee (date: 09.10.2018 number: 08). The study was organized according to STROBE criteria.

The questionnaire used in the research includes descriptive questions, The Scanning and Assessment Scale of Disruptive Behavior Disorders Based on DSM IV (16) and parent's statements about their children. The research data were evaluated by SPSS 21.0 statistical package program. Descriptive statistics are presented as mean (\pm) standard deviation, frequency distribution and percentage. For the statistical analysis chi-square test, fisher exact test was used and for related factors logistic regression was used. Statistical significance value was accepted as $p < 0.05$.

RESULTS

The average age of the parents were 38.84 ± 7.62 . 32.6% were male, 67.4% were female. 94.2% were married while 5.8% were divorced. The educational and occupational status of parents are shown in table 1. It is seen that the majority of the participants were collected in the income group of 2001-3000 and 1001-2000 TL in the study is (Table 1).

The average age of the children in the study was 11.34 ± 3.76 and the median age was 11. The majority of them were the first children of their families (53.7%). 54.4% were male and 45.6% were female. 4.7% had an accident, poisoning or a severe fever in their history, and 5,2% had a chronic illness, while 3.6% had a disability such as physical, visual, hearing impairment or developmental disorder. (Table 2)

In Table 3, the incidence of attention deficit hyperactivity disorder, oppositional defiant disorder and conduct disorder were calculated according to the scale questions in the questionnaire in the children included in. The distribution of some destructive behavioral disorders according to the parental expression of the children in the study is given in table 4. According to this, opposition (40.4%), excessive stubbornness (39.8%) and intraverted (36.5%) were most encountered (Table 4)

According to the regression analysis, There was no significant relationship between parental age, gender, educational status, occupation, and household income and ADHD. In children of divorced parents, ADHD was seen 2.2 times more than in married ones (OR: 2.2 GA: 1.2-5.7 $p = 0.021$).

There was no significant relationship between parental age, gender, marital status, educational status of parents, occupation of the father and oppositional defiant disorder. On the contrary to the fathers occupation, there is a meaningful relationship with the profession of the mother. The incidence of oppositional defiant disorder was 2.4 times (OR: 2.4 GA: 1.5-6.1 $p = 0.013$) higher in the children of unemployed mothers and 1.9 times higher in the children of the working class mothers compared to mother who are public servants for government (OR: 9 GA: 1,3-9,3 $p = 0,023$).

While there is no significant difference between parental age, gender, marital status, parental education and occupational status, there is a difference in terms of total household income. Conduct disorder is 1.2 times higher in those who earn less than \$ 1,000 compared to families with \$ 5,000 and higher income. (OR: 1,2 GA: 1,1-2,1 $p = 0,013$)

There was no statistically significance found between the attention deficit hyperactivity disorder and birth order, disability (visual, hearing impairment, developmental retardation etc.) accident, poisoning, severe febrile illness and chronic illness history. However, there was a significant difference in terms of the gender. Boys were diagnosed with attention deficit hyperactivity more than girls (OR: 2,1 GA: 1,7-2,7 $p = 0,006$). In terms of oppositional defiant disorder; there was no statistically significant difference in terms of birth order, gender, physical, visual and hearing impairment or developmental retardation. On the other hand, compared to physically healthy children, anti-oppositional defiant disorder incidence was 2.1 times higher in children who had a serious accident, poisoning or severe fever in their history (GA: 1,1-5,4 $p = 0,021$) and 2.4 times higher in children with chronic illness (GA: 1, 1-5,8,8 $p = 0,009$). When we look at the distribution of behavioral disorders, there was no significant difference in order to birth order, gender, disability existence or developmental deformation or chronic disease existence. On the other hand, conduct disorder was 3.8 times higher in children who had a history of serious accident, poisoning or severe fever (GA: 1.5-7.1, $p = 0.029$) than in those who had not.

Table 1. Distribution of Descriptive Characteristics of Individuals Participating in the Survey, Ankara, 2018.

	Number	(%)*
Age Groups (n=671)		
18-34	199	29.7
35-39	165	24.5
40-44	148	22.1
45 and older	159	23.7
Gender (n=674)		
Man	220	32.6
Woman	454	67.4
Marital status (n=671)		
Married	632	94.2
Divorced	39	5.8
Maternal Educational Status of the Child Answering the Questionnaire (n=672)		
Not literate	14	2.1
Literate	19	2.8
Primary school graduate	112	16.7
Secondary school graduate	87	12.9
High school graduate	238	35.4
College-University Graduate	202	3.1
Paternal Educational Status of the Child Answering the Questionnaire (n=669)		
Not literate	2	0.3
Literate	12	1.8
Primary school graduate	55	8.2
Secondary school graduate	71	10.6
High school graduate	214	32.0
College-University Graduate	315	47.1
Maternal Occupational Status of the Child Answering the Questionnaire (n=673)		
Student	6	0.9
Housewife	403	59.9
Unemployed	8	1.2
Worker	41	6.1
Public officer	169	25.1
Retired	9	1.3
Other**	37	5.5
Paternal Occupational Status of the Child Answering the Questionnaire (n=666)		
Student	3	0.5
Unemployed	14	2.1
Worker	216	32.4
Public officer	283	42.5
Retired	36	5.4
Other**	114	17.1
Average monthly income of the family (n=671)		
≤1000 TL	41	6.1
1001-2000 TL	195	29.1
2001-3000 TL	203	30.2
3001-5000	139	20.7
>5000 TL	93	13.9

*: Column percent

**: Tradesman, Self-employed

Table 2. Distribution of Some Descriptive Characteristics of Children Ankara, 2018.

	Number	(%)*
Birth order (n=668)		
1	359	53.7
2	214	32.0
3	81	12.1
4	11	1.6
5	3	0.4
Gender(n=673)		
Male	366	54.4
Female	307	45.6
Not Having Any Kind of Diagnosed Disability Such As Physical Disability Like Vision/ Hearing Disorders or Development Disorder (n=673)		
No	649	96.4
Yes **	24	3.6
Any Kind of Serious Accident, Poisoning or Severe History of Any Disease with High Fever (n=674)		
No	642	95.3
Yes	32	4.7
Chronic Diseases (n=674)		
No	639	94.8
Yes***	35	5.2

*: Percent Column

**: The most common diagnoses : hearing impairment, mental retardation

***: The most common chronic diseases : Type 1 Diabetes, Respiratory Diseases

Table 3. Disruptive Behavior Disorder in Individuals' Children Between 6 and 18 Years of Age, Ankara, 2018.

	No		Yes	
	Number	(%)*	Number	(%)*
Attention Deficit - Hyperactivity Disorder	607	90.1	67	9.9
Oppositional Defiant Disorder	607	90.1	67	9.9
Conduct Disorder	654	97.0	20	3.0

*: Column Percentage

Table 4. Distribution of Disruptive Behavior Disorders According to Parental Signs in Children Between 6 and 18 Years of Recruited Individuals for the study, Ankara, 2018.

Disruptive Behavioral Disorders (n=674)	Number	(%)*
Opposition	272	40.4
Excessive stubbornness	268	39.8
Introverted	246	36.5
Anorexia	224	33.2
Jealousy	224	33.2
Anger	220	32.6
Hyperactivity	189	28.0
Lying	144	21.4
Nail biting	139	20.7
Hitting	110	16.3
Fear of the doctor	108	16.0
Sleeping disorder	104	15.4
Swearing	102	15.2
Animal fear	101	15.0
Sardonicism	88	13.1
Spitting	60	8.9
School fear	59	8.8
Finger suction	58	8.6
Enuresis Nocturna(Bed wetting)	56	8.3
Tics	49	7.3
Biting	48	7.1
Sleepwalking	42	6.2
Trichotillomania	41	6.1
Fecal soiling	25	3.7
Impediment	25	3.7
Theft	22	3.3

*: Column percentage

DISCUSSION

It is found that the prevalence of attention deficit-hyperactivity disorder was 9.9%, oppositional defiant disorder was 9.9%, and behavioral impairment was 3.0% in children. The prevalence of ADHD in the world varies between 5.0% and 12.0% (13,17). In community-based studies conducted in Turkey, the prevalence of ADHD in children and adolescents is reported to be 8.1% -8.6% (18,19). Similarly, in a study conducted by Gul et. al. in Trabzon 8.6% of children with ADHD, 14.1% of children with oppositional defiant disorder, and 4% of children with conduct disorder was detected between the ages 6 to 12 years old(20). In Turkey, the frequency of ADHD studies is limited and there are differences between the methodology and the age groups of the studies. In a study of Motavalli in primary school children aged between 7 to 9 years old in Istanbul, the prevalence of ADHD was found to be 10.6% according to the teacher, 6.2% according to the parents, and 5% according to the clinical evaluation (21). Similarly, ADHD was found to be higher according to the parents in our study (28%).

In the literature, it has been shown that the frequency of ADHD is higher in men, and this ratio varies between 2: 1 and 9: 1 depending on the sample size covering the general population or clinic cases (22). Similarly, studies in our country have reported that ADHD is seen more frequently in men (23). In our study, there was a significant difference in terms of male-female gender for ADHD ($p = 0.006$, OR: 2,11), no significant difference for oppositional defiant disorder and conduct disorder was found in between genders in children population ($p = 0.23$, $p = 0.15$). There was a significant difference in the literature studies in which chronic disease, past accident and ADHD relationship were investigated. ADHD and other behavioral disorders have also been observed more frequently in children with the history of an accident (24). In this study, in contrary with the literature there was no significance was found in between the presence of a major accident, poisoning, severe febrile illness or chronic disease and ADHD, but a significant difference was found in terms of oppositional defiant disorder and conduct disorder in accordance with the literature ($p < 0,05$). When the relationship between ADHD and parent's education levels are evaluated, there was no statistically significant relationship between parental education level and ADHD was found in this study, although the literature indicates that children with higher educational leveled parents have higher prevalence of ADHD (25). In a study conducted by Tuğrul et al. In 1991, the educational status of the parents and the behavioral disorders in their children were examined and no statistically significant difference was found (26). In this study, the relationship between parental and maternal education status and conduct disorders in children was not significantly different. According to our results, mothers profession was not related with ADHD or conduct disorder but it was related with oppositional defiant disorder. More oppositional disorders were seen in the children of the mothers who were workers and students, in contrary oppositional disorders were not seen in children of unemployed mothers. This may be due to the small number of unemployed and student mothers involved in the survey.

Kartal et al (2008) has drawn attention to the prevalence of aggression in children in primary schools (27). Our research findings support this data. It is found that 32,6% of the children have anger, 16,3% hitting habit, 8,9% spitting habit and 7,1% biting habit in the study. Physical aggression of childhood is thought to be a strong cause of physical aggression, depression, weak learning performance, chronic violence and homicidal behaviors in the older ages (28). When these results are considered together with the research findings, it can be estimated that the students in the scope of this research and students who have similar conditions can show aggressive behaviors in their future lives, experience depression and have suicidal behaviors.

CONCLUSION

In this study, the prevalence of ADHD and disruptive behavioral disorders in primary care was investigated and their relationship with some variables were examined. According to our findings; while ADHD is more common in children of divorced parents and male gender, oppositional disorder is found to be more frequent in children with a major accident history or chronic illness. Conduct disorder appears to be associated with a significant accident or illness and low household income. According to the parental statement, the most frequent behavior problems seen in children were found to be opposition, extreme stubbornness and introvert personality.

It is believed studies conducted in the future with larger sample sizes will enlighten the development of these results and contribute to the treatment strategies for common mental problems. It is thought that early diagnosis and treatment possibilities will be improved by increasing the awareness about the child's mental health on the health workers in the primary health care institutions and the society.

Conflict of interest

No conflict of interest was declared by the authors.

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