Research Article / Araştırma Makalesi

The Diagnoses and Sociodemographic Characteristics of Children and Adolescents Treated in a University Hospital Psychiatry Inpatient Service

Bir Üniversite Hastanesi Psikiyatri Servisinde Tedavi Edilen Çocuk ve Ergenlerin Tanıları ve Sosyodemografik Özellikleri

Hamza AYAYDIN [1]

1 Harran University Faculty of Medicine, Department of child and adolescent mental health and diseases, Şanlıurfa, Turkey

Abstract

Background: The purpose of this study was to perform a retrospective file examination of the sociodemographic characteristics, symptoms leading to admission, length of stay in the inpatient unit, diagnoses, and psychotropic drugs used by children and adolescents who were treated in the psychiatric inpatient unit.
Materials and Methods: The records of patients aged under 18 (n=85) receiving treatment on an inpatient basis at the Harran University Medical Faculty Psychiatry Department inpatient unit between 1 August, 2016, and 1 September, 2018, were screened retrospectively. Case data were assessed using a data form produced by the author in terms of age, sex, parental ages, symptoms resulting in admission, diagnoses received, length of hospitalization, presence of multiple hospitalizations, and psychotropic drug use. Case diagnoses were based on clinical interviews using Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5) criteria. SPSS 23.0 software (SPSS Inc., Chicago, USA) was used for statistical analysis. Statistical significance was defined as $p<0.05$.
Results: Fifty-six of the patients included in the study were female and 29 were male. Major depressive disorder was the most frequent diagnosis among the patients (n: 30, 35.3%). The mean duration of hospitalization was 20.6±19.6 days. Eighty-five (100%) of the 85 patients had used one psychotropic agent during treatment. Antipsychotics were the most preferred drug group in our study (87.6%).
Conclusions: Mood disorders constituted the most common reason for hospitalization. Psychotropics were used by all patients during hospitalization. Schizophreniform disorder and substance-related disorders were significantly higher in boys, while rates of conduct disorder and borderline personality disorder were significantly higher in girls. Since child and adolescent in-patient units are not available in all provinces, in clinical practice treatment is administered on an inpatient basis in adult psychiatric units. It is important for patients to be followed-up by child and adolescent psychiatry specialists in terms of being treated under emergency conditions without having to wait in line for treatment by being hospitalized in adult psychiatric units in places where there are no in-patient ünits for children and adolescents.

Key Words: Child, Adolescent, Inpatient treatment, Pharmacotherapy

Öz.

Amaç: Bu çalışmanın amacı psikiyatri kliniğinde yatarak tedavi gören çocuk ve ergenlerin sosyodemografik özellikleri, yatışa neden olan semptomlar, yataklı birimde kalış süresi, tanı ve kullanılan psikotrop ilaçlar geriye dönük dosya taraması ile incelenmesiydi.
Materyal ve Metod: Harran üniversitesi tıp fakültesi psikiyatri anabilimdalı yataklı servisinde 1 Ağustos 2016 – 1 eylül 2018 tarihleri arasında yatarak tedavi gören on sekiz yaş altı hastaların (n:85) dosyaları geriye dönük olarak incelenmiştir. Olgulara ait veriler araştırmacı tarafından oluşturulan veri formu kullanılarak yaş, cinsiyet, ebeveyn yaşları, yatışa neden olan semptomlar, aldıkları tanılar, yatış süresi, çoklu yatışlarının olup olmadığı ve psikotrop kullanımı açısından değerlendirilmiştir. Olgulara ait tanılar ruhsal bozukluklar için tanımsal ve istatistiksel el kitabı 5. baskı (DSM-5) kriterlerine göre klinik görüşmeyle konulmuştur. İstatistiksel analiz için SPSS 23.0 (SPSS Inc., Chicago, USA) paket programı kullanıldı. İstatiksel anlamlılık düzeyi $p<0.05$ olarak belirlenmiştir.
Bulgular: Çalışmaya alınan hastaların 56'sı kız, 29'ı erkek cinsiyetteydi. Hastaların en fazla aldığı yatış tanısı Major Depresif Bozukluk'du (n: 30, %35,3). Hastaların ortalama yatış süreleri 20.6±19.6 gündü. 85 hastanın içinden 85'ü (%100) tedavi sürecinde bir psikotrop ajan kullanmıştır. Çalışmamızda en çok tercih edilen ilaç grubunun antipsikotikler olduğu gözlenmiştir (%87,6).
Sonuç: Yatışların en sık sebebini duygudurum bozuklukları oluşturmaktadır. Çalışmamızda yer alan hastaların tümünde servis yatışı sırasında psikotrop kullanılmıştır. Şizofreniform bozukluk ve madde ile ilişkili bozukluklar erkeklerde anlamlı düzeyde yüksekken, davranım bozukluğu ve sınırda kişilik bozukluğu kızlarda anlamlı düzeyde daha yüksek çıkmıştır. Çocuk ve ergenler için yataklı servislerin her ilde olmaması nedeniyle klinik pratikte erişkin psikiyatri servislerine yatırılarak tedavi uygulanmaktadır. Hastaların çocuk ve ergenler için yataklı servislerin olmadığı yerlerde erişkin psikiyatri servisine yatırılarak çocuk ve ergen psikiyatristi uzmanı tarafından takip edilmeleri, hastaların acil durumlarda tedavi edilmeleri ve tedavi için sıra beklememeleri açısından önem arz etmektedir.

Anahtar kelimeler: Çocuk, Ergen, Yataklı tedavi, İlaç tedavisi

Sorumlu Yazar / Corresponding Author

Dr. Hamza AYAYDIN (M.D.)
Harran University
Faculty of Medicine,
Department of child and adolescent mental health and diseases,

Osmanbey Yerleşkesi,
Şanlıurfa-Mardin Karayolu Üzeri
18.Km, 63290
Haliliye/Şanlıurfa, Turkey

Fax: +904143183190,
Tel: +904143444444-4778,
+905376636828.

e-mail:
drhamzaayaydin@yahoo.com,

Geliş tarihi / Received:
12.02.2020

Kabul tarihi / Accepted:
20.05.2020

DOI: 10.35440/hutfd.688169

Introduction

The point prevalence of mental disorders in children and adolescents is 15%, with a reported lifetime prevalence of 25-30% (1-6). One epidemiological study from Turkey reported an overall prevalence of any psychopathology of 37.6% without impairment criteria, and of 17.1% with impairment criteria (7).

If untreated, psychological disorders in childhood and adolescence can result in irreversible processes (attempted suicide, substance use, delinquency, and dropping out of education). These psychological disorders can also affect adult life. The general societal incidence of mental disorders is 26% (8), 75% of these beginning before the age of 25 and 50% before the age of 16 (9). Early diagnosis and treatment is therefore very important, and it is also important for cases with psychiatric disorders too severe to be treated on an outpatient basis to be treated in child and adolescent mental health inpatient services. Under acute conditions, however, insufficient beds in child and adolescent mental health inpatient services and/or these being geographically remote can mean that rapid treatment is delayed. Adult psychiatric units may therefore need to be used for acute psychiatric treatment of children and adolescents.

One study from the USA showed an increase in in-patient admission in the previous 10 years and in psychotropic use, with a decrease being observed in mean length of stay in child and adolescent mental health inpatient services (10). Additionally, a study from Europe evaluating a six-year period reported an increase in admissions during the course of adolescence (11). The restricted number of child and adolescent inpatient services in Turkey means that the number of studies on the subject is also limited. Indeed, some studies on the subject have involved children and adolescents admitted to adult psychiatric inpatient services. Coşkun et al. reported psychotic disorders, mood disorders, and dissociative disorders as the most commonly detected psychiatric conditions (12). A retrospective study showed longer durations of hospitalization in adolescents diagnosed with psychotic disorders (13). Another retrospective study reported major depression as the most frequent diagnosis, while psychotic disorders were associated with the longest hospital stay (14).

One study reported that improvement levels on the Clinical Global Impression Scale increased in line with length of hospitalization (15). Young people admitted to the child and adolescent inpatient services exhibited significant progress in the individual, familial and other social domains in the process from time of admission to discharge (16).

The purpose of this study was to perform a retrospective file examination of the sociodemographic characteristics, symptoms leading to admission, length of stay in the inpatient unit, diagnoses, and psychotropic drugs used by children and adolescents treated after admission by a specialist child and adolescent psychiatrist to the Harran University Medical Faculty Psychiatric Inpatient Unit between August 2016 and September 2018.

Materials and Methods

The records of patients aged under 18 (n=85) receiving treatment on an inpatient basis at the Harran University Medical Faculty Psychiatry Department inpatient unit between 1 August, 2016, and 1 September, 2018, were screened retrospectively. Case data were assessed in terms of age, sex, parental ages, symptoms resulting in admission, diagnoses received, length of hospitalization, presence of multiple hospitalizations, and psychotropic drug use using a data form produced by the author. Diagnoses were based on clinical interviews using Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5) criteria (17). No other tool was routinely employed at diagnostic evaluation. Diagnoses were defined as discharge diagnoses confirmed by a member of the child and adolescent mental health and diseases academic staff. The study was approved by the Harran University Medical Faculty Ethics Committee (session No.09, decision No.04, dated 09-06-2018). SPSS 23.0 software (SPSS Inc., Chicago, USA) was used for statistical analysis. All parameters and percentages were calculated using descriptive statistics. Categorical variables were analyzed using Pearson's Chi-Square test. Standard deviation and minimum-maximum values were also calculated for some parameters. Statistical significance was defined as $p<0.05$.

Results

Distributions of patients' sociodemographic data, presence of familial psychiatric history, presence of repeat admissions, treatment prior to hospitalization, history of substance use, length of hospitalization, and principal symptoms resulting in admission are shown in Table 1. Distribution of patients' main symptoms responsible for admission are shown in Table 2. Diagnostic data for in-patients are shown in Table 3, and psychotropic drug use rates and minimum and maximum dosages are given in Table 4. In addition, catatonia was accompanied by 14.1% (n=12) of patients with psychiatric disorders.

Discussion

This retrospective study assessed children and adolescents admitted for in-patient treatment to an adult psychiatric inpatient unit by a specialist child psychiatrist in terms of sociodemographic characteristics, symptoms resulting in admission, length of hospitalization, diagnoses, and psychotropic drug therapies.

Female gender predominated among adolescents receiving in-patient treatment in our study. Although one study reported equal gender rates (18), female predominance has generally been observed, consistent with the present

study (1, 12, 19).

Table 1. Distribution of patients' sociodemographic characteristics and main symptoms responsible for admission

Parameters	N (%)	Mean ± *SD*	*Min-Max*
Age			
Female	56(65.9%)	15.2±*1.6*	11-17
Male	29(34.1%)	15.6±*1.3*	12-17
Education (years)		8±*2.7*	*0-12*
Mother's age		46.2±*6.4*	*33-60*
Father's age		49.9±*7.2*	*35-68*
Length of stay		20.6±*19.6*	*1-140*
Care provider			
The family	77(90.6%)		
Official institution	8(9.4%)		
Place of residence			
Village	*10(11.8%)*		
District	*25(29.4%)*		
City	*50(58.8%)*		
Province of residence			
The study province	*68(80%)*		
Outside the province	17(20%)		
Psychiatric history in the family	35(41.2%)		
Repeat admission	8(9.4%)		
Treatment prior to admission	56(65.9%)		
History of substance use	*8(9.4%)*		

Table 2. Distribution of patients' main symptoms responsible for admission

Main symptoms	N (%)
Sleeplessness, hyperactivity, irritability	18(21.2%)
Hallucination (auditory/visual)	16(18.8%)
Suicidal ideation, attempted suicide	13(15.3%)
Refusal to speak, eat, or drink	12(14.1%)
Harming self or surroundings	8(9.4%)
Restricted eating, nausea, vomiting	6(7.1%)
Obsession, anxiety	6(7.1%)
Skepticism	2(2.4%)
Introversion, self-talk	2(2.4%)
Substance use	2(2.4%)

Mood disorders constituted the most common reason for admission (60%), the most frequent being major depressive disorder (35.3%). The most common diagnoses after mood disorders were psychotic disorders (18.8%), neurodevelopmental disorders (10.6%), and dissociation disorders (10.6%). Mood (%38.2) and psychotic disorders (%25.7) were also the most common conditions in an overseas study evaluating 332 children and adolescents treated as in-patients in the psychiatric unit (20). However, in another overseas study evaluating 233 cases, mood disorders were again the most common diagnostic group, but second place was occupied by anxiety disorder. Interestingly, psychotic disorders represented the least frequently observed group (10). A study from Australia retrospectively evaluating 72 adolescents in 2017-2018 mood (56.9%) and anxiety disorders (25%) as the two most common diagnoses, followed by psychotic (4.2%), autism spectrum (4.2%), somatoform(2.8%), eating (2.8%) and personality (1.4%) disorders (21). In another study, admissions to an acute inpatient service (for adolescents aged 12–18 years) were reviewed over a 14-month period. Mood and trauma and stressor-related disorders were the most common diagnoses - depression (49%), post-traumatic stress disorder (PTSD) and acute stress disorder (ASD) (32%), anxiety (12%), bipolar disorder (6%), adjustment disorder, eating disorder, psychosis (4.5%) and ADHD (3%) (22). In a study from Japan of patients being treated in a child and adolescent psychiatric unit, approximately 17% of patients suffered from obsessive-compulsive disorder (OCD), 14% had eating disorders (mostly anorexia nervosa), 13% had pervasive developmental disorders (PDD), 11% had anxiety disorders other than OCD, 9% had adjustment disorders, 8% had ADHD, 6% were diagnosed with schizophrenia, and 6% had mood disorders. The mean age of the patients in that study was 12.8, and the majority were girls (23). A more recent study assessed suicidality in psychiatrically hospitalized children and adolescents(n=1309) and reported that mood disorder and PTSD, and cannabis and alcohol use, as well as female gender and age ≥13 years were more frequent in suicidal patients. In addition, diagnoses including mood disorder (70.5%), externalizing disorder (40%), PTSD (17.5%), ASD (10.1%), anxiety disorder (7.7%), intellectual disability (7.3%) and eating disorder (1.2%) were reported (24). Another study comparing data from 2008 and 2009 with data from 2010 in a child and adolescent psychiatric unit described depressive disorder and ADHD as the most common diagnoses in both periods, and also determined no difference between the two periods in terms of length of hospitalization (25). A more recent study of trends in the psychiatric hospitalization of children and adolescents in Spain in 2005-2015 reported hospitalizations due to eating disorders as the most frequent and continuous trend throughout the study period, rising by a minimum of 7.8% until 2015 (26).

Çoşkun et al. performed a retrospective assessment of admission symptoms, psychotropic drug use, lengths of stay, and diagnoses received among child and adolescent patients admitted to a psychiatric inpatient services over a five-year period. Those authors reported mood disorders (33%), psychotic disorders (26%), and dissociative disorders (20%) as the most commonly detected psychiatric conditions. Mood disorders were also the most frequent diagnosis in Usta et al.'s study, with major depression at 41.1%, bipolar disorder at 26.2%, conduct disorder at 9%, and psychotic disorders at 8.7% being the four most common diagnostic groups (14). Mood disorders (57.7%) and psychotic disorders (8.1%) were also the most frequent diagnoses in Özbaran et al.'s study (15). Another study reported mood disorders (depression 32.6%, bipolar disorder 13% and psychotic disorders 21.7%) as the most frequent diagnostic group (27). In Eray et al.'s study, the most frequent diagnoses, in descending order, were depression (47.3%), psychotic disorders (11.8%) and eating disorders (8.1%) (28). Güvenir et al. reported mood disorders

(37.7%), psychotic disorder (24.3%), abuse (11%), and anxiety disorders (11%) as the most frequently seen diagnoses among patients hospitalized for treatment (16). Conduct disorder (44.3%) predominated in another study (18). Substance abuse (24.8%), substance addiction (15.4%), depression (19.3%), bipolar disorder (12.3%), and psychotic disorder (8%) were also reported (18). This may be due to the mental health and diseases hospital where the study was performed being a regional hospital and to chronic patients and those who cannot be treated on an out-patient basis being referred to it (18). The prevalence of conduct disorder in the present study was at a moderate level of 8.2%. Neurodevelopmental disorders were observed at a rate of 10.6%, and comorbid conditions rather than these disorders were generally the reason for admission. Hospitalization with dissociative identity disorder (DID) was observed at a rate of 10.6%. Some unit studies have reported no diagnoses of DID (14, 18), while others have reported rates of up to 20% (12, 13). These differences suggest that the type and nature of in-patient unit affects patients' diagnosis distributions.

Eray et al. described suicidal ideation or suicide attempts (26.3%), unhappiness (12.4%), irritability (10.8%), psychotic symptoms (15.7%) and refusal to eat or binge eating (7.6%) as the symptoms most commonly responsible for hospitalization (28). In another study, suicidal ideation, attempted suicide (27.3%), hallucination (auditory/visual) (20%), irritability and aggression(19%), and unhappiness, anhedonia and withdrawal (17.8%) were reported as the symptoms most commonly responsible for hospitalization (12). In agreement with these studies, sleeplessness, hyperactivity, irritability (21.2%), hallucination (auditory/visual) (18.8%), suicidal ideation, attempted suicide (15.3%), and refusal to speak, eat, or drink (14.1%) were the symptoms most commonly responsible for hospitalization in the present study. The frequencies of the main symptoms responsible for hospitalization and discharge diagnoses (mood disorders and psychotic disorders) in the present study were also compatible with previous research.

In the present study, schizophreniform disorder and substance-related disorders were seen at significantly higher rates in boys, while rates of conduct disorder and borderline personality disorder were significantly higher in girls. In another study, psychotic diagnoses were common among boys, while dissociative disorder and mood disorders were more common among girls (12). In a different study, substance dependence and ADHD were more frequent in boys, and depression and PTSD diagnoses in girls (18). Since patients were not admitted if the accompanying individual was unable to stay with them, further studies are needed to assess whether these diagnostic variations are significant. In addition, the structure and type of the inpatient ward appear to affect the distributions of diagnoses in terms of gender.

Table 3. Diagnostic data for in-patients

Diagnosis	N (%)	Female N (%)	Male N (%)	*p*
Depressive disorders;	30(35.3%)			
Major depressive disorder	30 (35.3%)	21 (37.5%)	8 (27.5%)	.361
Bipolar and related disorders;	21(24.7%)			
Bipolar 1 disorder	21(24.7%)	14(25%)	7(24.1%)	.930
Schizophrenia spectrum and other psychotic disorders;	16(18.8%)			
Schizophrenia	8(9.4%)	4(7.1%)	4(13.7%)	.313
Schizophreniform disorder	8(9.4%)	2(3.5%)	6(20.6%)	.01
Neurodevelopmental disorders;	9(10.6%)			
Intellectual disability	4(4.7%)	3(5.3%)	1(3.4%)	.694
Autism spectrum disorder	1(1.2%)	1(1.7%)	0(0%)	.469
ADHD	6(7.1%)	6(10.7%)	0(0%)	.067
Dissociation disorders;	9(10.6%)			
Dissociative identity disorder	9(10.6%)	7(12.5%)	2(6.8%)	.426
Borderline personality disorder	7(8.2%)	7(12.5%)	0(0%)	.047
Conduct disorder	7(8.2%)	7(12.5%)	0(0%)	.047
OCD and related disorders;	6(7.1%)			
OCD	6(7.1%)	4(7.1%)	2(6.8%)	.966
Body dysmorphic disorder	1(1.2%)	1(1.7%)	0(0%)	.469
Anxiety disorders;	5(5.9%)			
Panic disorder	2(2.4%)	1(1.7%)	1(%3.4)	.632
Generalized anxiety disorder	4(4.7%)	2(%3.5)	2(%6.8)	.493
Somatic symptom and related disorders;	1(1.2%)			
Conversion disorder	1(1.2%)	1(1.7%)	0(0%)	.469
Factitious disorder	1(1.2%)	1(1.7%)	0(0%)	.469

Chi-square p. ADHD; attention deficit hyperactivity disorder, OCD; obsessive compulsive disorder

A study from the USA evaluating children and adolescents in terms of mental state in inpatient services in respect of lengths of admission and psychotropic use reported a three-fold increase in in-patient admission in the previous 10 years and an eight-fold increase in psychotropic use, with a decrease being observed in mean length of stay on the inpatient services (10). Another study from Europe evaluating a six-year period reported an incidence of presentations to inpatient services of 0.2 per thousand at the age of 10, rising to 2.2 per thousand at the age of 19, indicating an increase in admissions during the course of adolescence (11). The mean length of stay in the present study was 20.6 ± 19.6 days. Other studies from Turkey have reported mean stays of 22.2 (12), 24 (28), and 29 (18) days. Studies from various other countries (the USA, Australia, and New Zealand) have also reported mean lengths of stay of less than 30 days (29-31), while durations of stay may be as high as four months in studies from Europe (32). A study from the UK (within Tier 4 inpatient settings) revealed that girls were more frequently hospitalized, with mean lengths of stay ranging from one to 609 days (mean = 162.12) (33). In another study from the UK, girls represented the majority among 112 adolescents hospitalized for treatment. Duration of hospitalization was 118 days for boys and 196 days for girls. In addition, longer admissions led to greater improvement and compliance with treatment, and these and female gender were both significant predictors of positive change during hospitalization (34). Additionally, in a study from Japan, the mean length of inpatient

stay was approximately 11 months (335.4 days, SD = 336.2) and ranged from 10 days to 5 years (median = 245 days). Many children with long lengths of stay were reported not only to have severe psychiatric problems, but also tended to have family problem, such as abuse and poor upbringing ability (23). Length of hospitalization may be as short as four weeks in countries such as the USA, depending on the health system, while in Turkey, for reasons such as limited space and/or relatives wishing to remove patients before they enter into remission, the length may be as short as three weeks. Approximately one in six of our patients were discharged at the request of the family before entering remission.

Table 4. Psychotropic use rates and doses

Psychotropics	N (%)	*Min-Max (mg/day)*
Antipsychotics;	*83(97.6%)*	
Quetiapine	*49(57.6%)*	*50-1200*
Olanzapine	*48(56.6%)*	*2.5-30*
Risperidone	*29(34.1%)*	*1-6*
Chlorpromazine	*10(11.8%)*	*100-300*
Aripiprazole	*9(10.6%)*	*2-25*
Clozapine	*5(5.9%)*	*400-900*
Amisulpride	*2(2.4%)*	*300-1200*
Anxiolytics;	*56(65.9%)*	
Lorazepam	*63(74.1%)*	*2-7.5*
Alprazolam	*2(2.4%)*	*0.5-1.5*
Clonazepam	*1(1.2%)*	*-*
Antidepressants;	*51(60%)*	
Fluoxetine	*29(34.1%)*	*10-60*
Mirtazapine	*18(21.2%)*	*15-30*
Sertraline	*8(8.4%)*	*25-150*
Paroxetine	*6(7.1%)*	*20-80*
Escitalopram	*6(7.1%)*	*5-30*
Venlafaxine	*5(5.9%)*	*75-225*
Duloxetine	*2(2.4%)*	*30-60*
Clomipramine	*2(2.4%)*	*225-300*
Trazodone	*1(1.2%)*	*-*
Mood stabilizers;	*17(20%)*	
Lithium	*9(10.6%)*	*600-1500*
Valproate	*8(9.4%)*	*500-1250*
Topiramate	*2(%2.4)*	*25-50*
Psychostimulants;	*6(7.1%)*	
Methylphenidate	*6(7.1%)*	*18-54*

Although a frequency of 94.8% was reported in one study (18), in accordance with the others (15, 27) all the patients in this study used psychotropics during hospitalization. The most commonly used group, at 97.6%, was antipsychotics. In addition, this study is consistent with antipsychotic use rates in other research from Turkey reporting frequencies of 91.6% (15), 84.9% (18), 87.8% (16), 83% (12), 80.4% (27) and 67% (28). This high rate in the use of antipsychotics may have resulted from the use of these drugs for antidepressant and mood stabilizer use as well as antipsychotic effect. Quetiapine, olanzapine and risperidone represented the three most frequently used antipsychotics, and these results were also consistent with the majority of previous studies), although Aripiprazole was preferred over olanzapine in addition to risperidone in two other studies (16,18). In agreement with other studies, atypical antipsychotics predominated over typical medications. This may be due to atypical antipsychotics having better toleration than typical antipsychotics, to their causing fewer extrapyramidal side-effects, and to their being approved in the treatment of non-psychotic disorders such as mood disorders and OCD (18).

Anxiolytics (65.9%) were the second most commonly used psychotropic group in this study. Benzodiazepines were generally used in addition to other therapies and to treat anxiety, insomnia, or for agitation associated with other psychiatric conditions. Although diazepam was most widely used as an anxiolytic in two previous studies (16, 27), in agreement with Şentürk et al. (18) lorazepam was our first choice anxiolytic in the present study of choice. The more frequent use of anxiolytics in this study than in previous research (47.8% (27), 42.2% (16), 34.9% (18), 26.1% (12), 12.9% (15), 0.5% (28)) may be related to lorazepam use instead of electroconvulsive therapy in cases of catatonia (an additional diagnosis of catatonia was present in 14.1% of the patients in the present study).

Antidepressants (60%) were the third most commonly used group. This may be due to the greater incidence of manic and psychotic disorders than total depression in our in-patients. Some studies have reported antidepressant use in second place at 65.7% (15), 56.5% (27), 54% (28), 53.3% (16), 33.3% (12), while in one study antidepressant use was in fourth place (27.3%) (18). These differences may be related to variation in patients' diagnostic profiles. The antidepressant most used by us was fluoxetine, consistent with two previous studies (16, 27). Venlafaxine (12) and sertraline (18) were the two most employed in two other studies in terms of antidepressant used. The predominance of venlafaxine may be due to treatment on psychiatric units being performed by adult (12). However, when examined in more general terms, selective serotonin reuptake inhibitors (SSRIs) predominate. This was attributed to SSRIs being better tolerated, with significantly lower rates of treatment discontinuations (35) and significantly more effective than tricyclic antidepressants (TCAs) in depressed children, adolescents, and young adults (36).

Mood stabilizers ((20%) were the fourth most commonly used group, in agreement with previous studies ((19.6%) (27), 22.2% (16), and 13.8% (15)). However, these were reported to be in second place in terms of use (36.3%) in only one previous study (18). Although valproate has generally been reported in first place as a mood stabilizer lithium use was determined in first place in the present study. We attribute the preference for lithium compared to valproate to the majority of our patients being girls of childbearing age and to the potential harmful effects of valproate on the developing brain (37). In addition, the National Institute for Health and Care Excellence recommends that it should not be given to girls and women with mental disorders who are pregnant or have childbearing potential (38).

The limitations of this study include the retrospective

examination of the data and the relatively low patient number. Other limitations include the fact that factors such as psychotherapy administered to patients and family therapy were not considered.

Conclusion

In conclusion, psychotropic use among in-patients in this study was high, and the mean length of hospital stay was three weeks. Since child and adolescent in-patient units are not available in all provinces in Turkey, in clinical practice treatment is administered on an inpatient basis in adult psychiatric units. It is important for patients to be admitted to adult psychiatric in-patient units where there are no such units for children and adolescents, and for them to be followed-up by child and adolescent psychiatry specialists so they can be treated under emergency conditions without having to wait for treatment. Although studies in this field have increased in the last decade, they are still relatively few in number. An increase in of studies on this subject will make an important contribution to the field of child and adolescent mental health.

Declaration of interest

The author report no declarations of interest.

Financial Disclosure:

No financial support was received.

Ethical Approval: This study was approved by the Harran University Medical Faculty Ethics Committee (session No.09, decision No.04, dated 09-06-2018).

References

1. Kessler RC, Avenevoli S, Costello EJ, Georgiades K, Green JG, Gruber MJ, et al. Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. Arch Gen Psychiatry. 2012;69(4):372-80.
2. Ravens-Sieberer U, Wille N, Erhart M, Bettge S, Wittchen H-U, Rothenberger A, et al. Prevalence of mental health problems among children and adolescents in Germany: results of the BELLA study within the National Health Interview and Examination Survey. Eur Child Adolesc Psychiatry. 2008;17(1):22-33.
3. Merikangas KR, He J-P, Brody D, Fisher PW, Bourdon K, Koretz DS. Prevalence and treatment of mental disorders among US children in the 2001–2004 NHANES. Pediatrics. 2010;125(1):75-81.
4. Merikangas KR, Nakamura EF, Kessler RC. Epidemiology of mental disorders in children and adolescents. Dialogues Clin Neurosci. 2009;11(1):7.
5. Kessler RC, Avenevoli S, Costello J, Green JG, Gruber MJ, McLaughlin KA, et al. Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. Arch Gen Psychiatry. 2012;69(4):381-9.
6. Barkmann C, Schulte-Markwort M. Prevalence of emotional and behavioral disorders in children and adolescents in Germany--a systematic literature review. Psychiatr Prax. 2004;31(6):278-87.
7. Ercan ES, Polanczyk G, Akyol Ardıc U, Yuce D, Karacetın G, Tufan AE, et al. The prevalence of childhood psychopathology in Turkey: a cross-sectional multicenter nationwide study (EPICPAT-T). Nord J Psychiatry. 2019;73(2):132-40.
8. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005;62(6):617-27.
9. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustun TB. Age of onset of mental disorders: a review of recent literature. Curr Opin Psychiatry. 2007;20(4):359.
10. Meagher SM, Rajan A, Wyshak G, Goldstein J. Changing trends in inpatient care for psychiatrically hospitalized youth: 1991–2008. Psychiatr Q. 2013;84(2):159-68.
11. James A, Clacey J, Seagroatt V, Goldacre M. Adolescent inpatient psychiatric admission rates and subsequent one-year mortality in England: 1998–2004. J Child Psychol Psychiatry. 2010;51(12):1395-404.
12. Coşkun M, Bozkurt H, Ayaydın H, Karakoç S, Süleyman F, Üçok A, et al. Bir Üniversite Hastanesi Psikiyatri Servisinde Yatarak Tedavi Edilen Ergen Hastaların Klinik ve Sosyodemografik Özellikleri. Turk J Child Adolesc Ment Health. 2012;19(1):17-24.
13. Arslan SH, Evlice YE, Alparslan NZ, Diler RS. Yatarak sağaltım gören ergenlerin sosyodemografik özellikleri: Yatış süresini etkileyen faktörler. Düşünen Adam. 1996;9:44-9.
14. Usta MB, Ürer E, Aral A, Say GN, Karabekiroğlu K. Factors Effecting Length of Stay in Child Psychiatry Hospital Setting. J Clin Psychiatry. 2017;20(4):263-7.
15. Özbaran B, Köse S, Yilmaz E, Aydin AN, Aydin C. Çocuk ve ergen psikiyatrisi uygulamasinda yatakli servis deneyimi ve yatisin iyilesmeye katkisinin degerlendirilmesi/Evaluation of the contribution of inpatient services and experiences on improvement in child and adolescent psychiatry practice. Anadolu Psikiyatri Derg. 2016;17(2):120.
16. Güvenir T, Taş FV, Özbek A. Child and adolescent mental health inpatient services in Turkey: Is there a need and are they effective? Arch Neuropsychiatry. 2009;46(4).
17. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5®). 5th ed. Arlington, VA: American Psychiatric Pub; 2013.
18. Şentürk Pilan B, Bilaç Ö, Orhon Z, Özek Erkuran H. Bir Ruh Sağlığı ve Hastalıkları Hastanesinin Çocuk ve Ergen Psikiyatrisi Kliniğinde Yatarak Tedavi Gören Hastalarda İlaç Kullanımı. Turk J Child Adolesc Ment Health. 2017;24(3):207-18.
19. Green J, Jacobs B, Beecham J, Dunn G, Kroll L, Tobias C, et al. Inpatient treatment in child and adolescent psychiatry–a prospective study of health gain and costs. J Child Psychol Psychiatry. 2007;48(12):1259-67.
20. Park C, McDermott B, Loy J, Dean P. Adolescent admissions to adult psychiatric units: patterns and implications for service provision. Australas Psychiatry. 2011;19(4):345-9.
21. Hayes C, Simmons M, Palmer VJ, Hamilton B, Simons C, Hopwood M. A profile of adolescents admitted to a private inpatient unit and mental health outcomes. Australas Psychiatry.0(0):1039856219875068.
22. Salmond CH. Use of self-report outcome measures in an acute inpatient CAMHS setting. Clin Child Psychol Psychiatry. 2020;25(1):174-88.
23. Setoya Y, Saito K, Kasahara M, Watanabe K, Kodaira M, Usami M. Evaluating outcomes of the child and adolescent psychiatric unit: A prospective study. Int J Emerg Ment Health. 2011;5(1):7.
24. Dobson ET, Keeshin BR, Wehry AM, Saldana SN, Mukkamala LR, Sorter MT, et al. Suicidality in psychiatrically hospitalized children and adolescents: Demographics, treatment, and outcome. Ann Clin Psychiatry. 2017;29(4):258-65.
25. Bonnell W, Alatishe YA, Hofner A. The effects of a changing culture on a child and adolescent psychiatric inpatient unit. J Can Acad Child Adolesc Psychiatry. 2014;23(1):65-9.
26. Llanes-Álvarez C, Andrés-de Llano JM, Álvarez-Navares AI, Pastor-Hidalgo MT, Roncero C, Franco-Martín MA. Trends in Psychiatric Hospitalization of Children and Adolescents in Spain between 2005 and 2015. J Clin Med. 2019;8(12):2111.
27. Varol Taş F, Güvenir T. Bir Çocuk Ve Ergen Psikiyatrisi Kliniğinde Yatarak Tedavi Gören Hastalarda İlaç Kullanımı. Turk J Child Adolesc Ment Health. 2007;14(3):139-50.
28. Eray Ş, Akkuzu N, Yıldırım Ö, Vural AP. Bir Çocuk Psikiyatri Kliniğinde Yatarak Tedavi Gören Çocuk ve Ergenlerin Klinik ve Sosyode-

mografik Özelliklerinin Değerlendirilmesi. Turk J Child Adolesc Ment Health. 2018;25(3):223-35.
29. Gavidia-Payne S, Littlefield L, Hallgren M, Jenkins P, Coventry N. Outcome evaluation of a statewide child inpatient mental health unit. Aust NZ J Psychiatry. 2003;37(2):204-11.
30. Mayes SD, Calhoun SL, Krecko VF, Vesell HP, Hu J. Outcome following child psychiatric hospitalization. J Behav Health Serv Res. 2001;28(1):96-103.
31. Swadi H, Bobier C. Hospital admission in adolescents with acute psychiatric disorder: how long should it be? Australas Psychiatry. 2005;13(2):165-8.
32. Tulloch S, Lelliott P, Bannister D, Andiappan M, O'Herlihy A, Beecham J, et al. The costs, outcomes and satisfaction for inpatient child and adolescent psychiatric services (COSI-CAPS) study. London: National Coordinating Centre for NHS Service Delivery and Organisation R&D; 2008.
33. Lee Y, Martin P, Hembry P, Lewis S. Outcomes of inpatient psychiatric treatment for adolescents: A multiple perspectives evaluation. Clin Child Psychol Psychiatry. 2018;23(3):409-24.
34. Kennedy J, Hembry P, Green D, Skuse D, Lewis S. Predictors of change in global psychiatric functioning at an inpatient adolescent psychiatric unit: A decade of experience. Clin Child Psychol Psychiatry. 2020;25(2):471-82.
35. Anderson IM. Selective serotonin reuptake inhibitors versus tricyclic antidepressants: a meta-analysis of efficacy and tolerability. J Affect Disord. 2000;58(1):19-36.
36. Qin B, Zhang Y, Zhou X, Cheng P, Liu Y, Chen J, et al. Selective serotonin reuptake inhibitors versus tricyclic antidepressants in young patients: a meta-analysis of efficacy and acceptability. Clin Ther. 2014;36(7):1087-95. e4.
37. Christensen J, Grønborg TK, Sørensen MJ, Schendel D, Parner ET, Pedersen LH, et al. Prenatal valproate exposure and risk of autism spectrum disorders and childhood autism. Jama. 2013;309(16):1696-703.
38. Antenatal and postnatal mental health: clinical management and service guidance (CG192) [Internet]. National Institute for Health and Care Excellence. 2014 [cited 14.02.2019]. Available from: https://www.nice.org.uk/guidance/cg192.