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Clinical experience in a child and adolescent psychiatry inpatient unit: A 20-month analysis of sociodemographic characteristics and diagnostic distribution

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Abstract

This study aimed to describe the key sociodemographic and diagnostic characteristics of female child and adolescents hospitalized in a psychiatry inpatient unit. We hypothesized that certain psychiatric diagnoses and clinical features would be particularly prominent in this population. A retrospective analysis was conducted on 250 female patients admitted to a child and adolescent psychiatry inpatient unit between February 2022 and October 2023. Sociodemographic data, psychiatric diagnoses, self-injury history, psychotropic medication use, and prominent personality traits were examined. Self-reported Strengths and Difficulties Questionnaire, Revised Child Anxiety and Depression Scale, and clinician-rated Clinical Global Impressions and Children's Global Assessment Scale scores were recorded. Diagnoses were assessed using the K-SADS-PL. Data were obtained from the hospital's electronic records and archive files. The mean age of the patients was 15.86±1.33 years, 74% were admitted through the emergency department. The length of hospitalization was 12.84±9.46 days. The most common diagnoses were, in order, major depressive disorder, attention-deficit/hyperactivity disorder, social phobia, post-traumatic stress disorder. Self-injury behaviors were present in 65.6% of patients. The rate of psychotropic medication was used 90.4% of cases, most frequently atypical antipsychotics and selective serotonin reuptake inhibitors. The inpatient female youth profile is characterized by major depressive disorder, complex comorbidities, and frequent self-injury behaviors. The diagnostic distribution differs from community samples. Strengthening preventive outpatient mental health services may help reduce the need for psychiatric inpatient admissions.

Keywords: Child and adolescent psychiatry, inpatient unit, diagnostic distribution, sociodemographics, self-injury

Introduction

Child and adolescent psychiatry inpatient units play a crucial role in providing comprehensive mental health services, including psychiatric evaluation, diagnosis, treatment, follow-up, and crisis management when necessary and under specific conditions. However, hospitalization in a psychiatric unit is a challenging decision for children, adolescents, and their families. Inpatient treatment carries potential risks, such as separation from the family, stigma, and exposure to maladaptive behaviors from other patients. Therefore, whenever possible,

intensive outpatient follow-up is preferred as a more cost-effective and less distressing treatment option for both children and their families [1].

A significant proportion of psychiatric disorders emerge during childhood and adolescence. While some psychiatric disorders can be managed on an outpatient basis through early diagnosis and treatment, others severely impair functioning, necessitating intensive inpatient care. Inpatient units are the most widely used acute element of adolescent mental health services internationally [2]. Inpatient mental health services play a

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critical role in the comprehensive assessment and intensive treatment of complex mental health problems that cannot be managed on an outpatient basis, thereby contributing to clinical improvement and ensuring patient safety. A cohort study from the UK demonstrated that adolescents admitted to psychiatric inpatient services showed improvements in both functioning and psychiatric diagnoses after discharge, and these improvements persisted for up to one year [3]. Beyond general prevalence data in community samples, cases requiring hospitalization in clinical practice exhibit distinct characteristics such as acute crisis, self-mutilative and suicidal behaviors, or psychotic symptoms. In a study conducted in a mixed adolescent psychiatry unit, both male and female patients with multiple previous hospitalizations were found to have higher rates of institutional care placement and self-mutilative behaviors [4]. Another study from a mixed adolescent psychiatry unit reported that patients who required psychiatric consultation prior to admission were admitted to the inpatient unit at a younger age. It was also found that self-mutilative behaviors were more common among girls, whereas conduct and anxiety disorders were more frequent among boys [5].

Studies on psychiatric hospitalizations of children and adolescents in our country indicate that major depressive disorder (MDD), mood disorders, and psychotic disorders are among the most frequent diagnoses [6-10]. One study highlighted that conduct disorder and borderline personality disorder were particularly prevalent among female inpatients [9]. However, another study suggested that no specific psychiatric diagnosis was more likely to result in hospitalization, as all psychiatric conditions carried an equal risk [11].

Due to the complexity and chronic nature of mental health disorders, as well as the high rates of comorbidity and the need for crisis intervention, psychopharmacological treatment is frequently employed in child and adolescent psychiatric inpatient settings, with a reported usage rate of 94.8% [12]. A study examining both male and female inpatients found that antipsychotics (84.9%) were the most commonly prescribed medications, followed by mood stabilizers (36.3%), anxiolytics (34.9%), and antidepressants (27.3%) [12]. Another study similarly reported that antipsychotics (94.6%) were the most frequently used drug group in inpatient settings [10].

The number of hospitals and clinics providing inpatient psychiatric care for children and adolescents in Türkiye remains insufficient, the experience of clinicians working in this field is limited, and research on psychiatric inpatient populations is scarce. It has been observed in the literature that most of the studies were conducted in mixed-gender wards and with smaller samples. Our study fills a gap in the literature by providing data from a limited number of female-only services that accept child and adolescents. The combined use of clinician-rated and self-report psychometric instruments in a large sample makes the

study original by allowing a multidimensional assessment of clinical functioning.

Furthermore, there is limited and inconsistent information regarding the sociodemographic factors and diagnoses associated with inpatient psychiatric admissions among child and adolescents. We hypothesize that certain psychiatric disorders and clinical characteristics will be prevalent in hospitalized girl child and adolescents, and that specific sociodemographic parameters will be prominent in this sample. For all these reasons, this study aims to identify the key sociodemographic and diagnostic factors associated with inpatients in a female child and adolescent psychiatry unit.

Material and Methods

The our child psychiatry inpatient unit, located in a tertiary hospital (a city hospital affiliated with a university located in a metropolis), Since February 2022, has been admitting female children and adolescents. The unit exclusively admits female patients aged 11–18 years. Patients are admitted to the inpatient unit from both the emergency department and the outpatient clinic for indications for admission, such as acute crisis management, suicidal risk, treatment noncompliance, and severe symptom severity. Only patients with homicidal tendencies are not admitted to the inpatient unit. Patient admissions are made from our own hospital's emergency and outpatient units, as well as from across the country, both within and outside the province, with referrals from a child and adolescent psychiatrist and the 'Emergency Health Coordination Center'. Although the unit is technically authorized to accept individuals between 0 and 18 years, no patients below the age of 11 were admitted during the study period. The unit has a capacity of ten beds and provides treatment based on pharmacotherapy (oral, parenteral if necessary), psychotherapy, and behavioral models within a multidisciplinary, multimodal, and interdisciplinary framework. The therapeutic environment is structured around peer groups and peer relationships. The treatment team includes child and adolescent psychiatrists, psychologists, social workers, and nursing staff from various disciplines. In addition to psychotropic medication, all patients receive psychotherapy tailored to their mental health needs, including social skills training, supportive therapy, cognitive-behavioral therapy, and psychodynamic approaches. Psychoeducation for both the patient and family is an essential part of treatment. Additionally, during their inpatient stay, patients follow structured daily routines, participate in scheduled activities, and adhere to sleep hygiene protocols.

This study retrospectively examined the sociodemographic characteristics and diagnostic distribution of patients hospitalized in our child and adolescent psychiatry inpatient unit between February 2022 and October 2023. Patients who refused treatment and left the service on the same day were

excluded; all 250 patients whose file data were available were included in the study. If the same case was re-hospitalized within the specified time period during which the study was conducted, these hospitalizations were also included in the sample. At the beginning of hospitalization, self-report scales were administered to the patients, while sociodemographic data and clinician-rated scales were recorded by the clinician during both admission and discharge. Data were collected by child psychiatry residents and specialists working in the unit at the time of hospitalization. The recorded data were retrospectively reviewed over a two-month period (October 15, 2023 – December 15, 2023) by the principal investigator and research assistants using the hospital's electronic records and archived patient files.

The sociodemographic data form, designed by the research team, included variables such as age, sex, school/work status, parental education level, parental marital status, psychiatric history (both personal and familial), psychiatric diagnoses, history of abuse/neglect, medication use, presence of self-harming behaviors, personal or familial history of suicidal behavior, pandemic-related symptom onset, developmental history, and academic performance. School status was categorized as regular education with good attendance, regular education with high absenteeism, open high school, school discontinued, and graduate based on information obtained from patient and parent interviews. In the abuse/neglect assessment, the type of abuse, the closeness to the abuser, the number of abuses, and the age of the child at the time of abuse were questioned. Initial psychiatric diagnoses were determined at the time of admission by the child psychiatry specialist on duty, either during regular working hours or emergency shifts. To evaluate psychiatric diagnoses, the Schedule for Affective Disorders and Schizophrenia for School-Age Children - Present and Lifetime Version, Turkish Adaptation (K-SADS-PL-DSM-5-T) was administered in a one-on-one interview by a child psychiatrist or resident during the hospital admission process. Because the study was a retrospective design, only cases that completed the K-SADS-PL-DSM-5-T interview and were recorded in the patient file were included in the analysis. The clinician's preliminary psychiatric diagnosis was confirmed by the treatment team at the first inpatient unit visit.

Additionally, throughout hospitalization, clinical interviews, periodic inpatient unit visits, psychological assessments, and structured observations during free time and therapeutic activities were used to evaluate the predominant personality traits of each patient. According to DSM-5, whichever personality trait from cluster A, B, or C was more dominant is stated in the patient's file with the consensus of the treatment team.

At the beginning of hospitalization, self-report instruments including the Strengths and Difficulties Questionnaire (SDQ) -

Adolescent Form and the Revised Child Anxiety and Depression Scale (RCADS) - Child Form were administered. The Clinical Global Impression Scale (CGI-S) and the Children's Global Assessment Scale (CGAS) were rated by clinicians at both admission and discharge. During the K-SADS-PL-DSM-5-T interview, additional psychiatric disorders not covered by the scale, such as autism spectrum disorder, specific learning disabilities, intellectual disability, acute stress disorder, adjustment disorder, and disruptive mood dysregulation disorder, were assessed based on DSM-5 criteria through clinical interviews.

All patients participated in therapeutic routines and received individual and group psychotherapy. Discharge decisions were made by the treatment team based on clinical stabilization, improved functioning, family readiness for family interviews, and the absence of acute risk factors such as suicidal ideation or aggression. Due to some families refused treatment and requested their children be removed before the end of treatment, some patients' length of stay was shorter than anticipated.

Ethical approval was obtained from the İstanbul Medeniyet University Faculty of Medicine, Göztepe Training and Research Hospital Ethics Committee on September 27, 2023 (No: 2023/0635; Date: 27 September 2023). Children, adolescents, and their families were invited to participate in the study upon hospital admission. All the participants, both patients and parents, provided written informed consent for inclusion in the study.

Data Collection and Assessment Instruments

Clinician-Rated Assessments

Sociodemographic Data Form

Sociodemographic data were collected using a structured form designed by the principal investigator. This form included variables such as age, education, family psychiatric history, suicide attempts, trauma history, academic functioning, and substance use.

Kiddie Schedule for Affective Disorders and Schizophrenia - Present and Lifetime Version, Turkish Adaptation (K-SADS-PL-DSM-5-T)

The K-SADS-PL-DSM-5-T is a semi-structured diagnostic interview developed by Kaufman et al. (1997) to assess psychiatric disorders in children and adolescents [13]. In this study, the K-SADS-PL-DSM-5-T was used to determine the psychiatric diagnoses of the participants. The Turkish adaptation and validation were conducted by Ünal et al. [14]. The K-SADS-PL-DSM-5-T covers a wide range of psychiatric disorders, except for learning disabilities, intellectual disability, developmental disorders, and negative symptoms of schizophrenia. It was conducted upon admission in this study.

Clinical Global Impressions Scale- Severity Scale (CGI-S)

The CGI is a semi-structured clinician-rated scale used to assess the severity of psychiatric illness and the degree of improvement during treatment [15]. It consists of three subscales: "Severity of Illness," "Global Improvement," and "Efficacy Index" (used for evaluating medication side effects). In this study, the "Severity of Illness" and "Global Improvement" subscales were utilized. The severity scale is rated from 0 (not ill) to 7 (most severely ill), while the improvement scale compares the patient's condition at follow-up to baseline, ranging from 1 (very much improved) to 7 (very much worse). Although the CGI-S is widely used in Turkish psychiatric research, no Turkish validity and reliability study has been conducted. It was used to assess illness severity at admission and improvement at discharge in this study.

Children's Global Assessment Scale (CGAS)

The CGAS is a semi-structured clinician-rated scale used to evaluate a child's overall functioning in social, academic, and adaptive domains [16]. It provides a global rating on a scale from 1 to 100, with higher scores indicating better overall functioning. While widely used in international research, no Turkish validity and reliability study exists for this scale. In this study, it used to assess psychosocial functioning at admission and discharge.

Self-Report Instruments for Adolescents

Strengths and Difficulties Questionnaire (SDQ)

The SDQ, developed by Goodman [17], assesses both positive and negative behavioral characteristics using 25 items. The questionnaire consists of five subscales: Hyperactivity/Inattention, Conduct Problems, Emotional Symptoms, Peer Relationship Problems, and Prosocial Behavior [17]. Items are rated on a three-point Likert scale: 0 (not true), 1 (somewhat true), and 2 (certainly true). Reverse-scored items follow the opposite pattern: 2 (not true), 1 (somewhat true), and 0 (certainly true). The SDQ has parent, teacher, and self-report (adolescent) versions. The Turkish validity and reliability study was conducted by Güvenir et al., with Cronbach's alpha coefficients ranging from 0.22 to 0.73 [18]. In this study, it was administered to assess externalizing and internalizing symptom profiles and prosocial behaviours.

The SDQ scores can be interpreted using two different approaches: (1) assessing mean subscale scores or (2) categorizing cases based on predefined cut-off values. The SDQ UK site provides the following cut-off values:

- Total difficulties score: 0–13 (normal), 14–16 (borderline), 17–40 (abnormal)
- Emotional symptoms: 0–3 (normal), 4 (borderline), 5–10 (abnormal)
- Conduct problems: 0–2 (normal), 3 (borderline), 4–10 (abnormal)

- Hyperactivity/Inattention: 0–5 (normal), 6 (borderline), 7–10 (abnormal)
- Peer relationship problems: 0–2 (normal), 3 (borderline), 4–10 (abnormal)
- Prosocial behavior: 6–10 (normal), 5 (borderline), 0–4 (abnormal)

Revised Child Anxiety and Depression Scale (RCADS) - Child Form

The RCADS, developed by Chorpita et al., consists of 47 items assessing six subscales: Generalized Anxiety Disorder (GAD), Separation Anxiety Disorder (SAD), Panic Disorder (PD), Obsessive-Compulsive Disorder (OCD), Social Phobia (SP), and MDD [19]. It also provides total anxiety and total anxiety-depression scores. Items are rated on a four-point Likert scale: 0 (never), 1 (sometimes), 2 (often), and 3 (always). The Turkish validity and reliability study for ages 8–17 was conducted by Görmez et al., with a Cronbach's alpha of 0.95 [20]. Both child and parent versions of the scale exist; in this study, the child version was used. ROC analysis in the Turkish validation study established optimal cut-off scores for each subscale as follows: GAD: 7.5, SAD: 5.5, PD: 6.5, MDD: 11.5, SP: 9.5, OCD: 7.5. It was administered to assess internalizing symptom profiles in this study.

Statistical Analysis

Descriptive statistics for continuous variables were reported as mean, standard deviation, median, minimum, and maximum values, while categorical variables were presented as frequency (n) and percentage (%). Normality assumptions were assessed using the Kolmogorov-Smirnov test. Comparisons of continuous variables between two groups were performed using the Mann-Whitney U test. All statistical analyses were conducted using IBM SPSS Statistics 25, with statistical significance set at $p < 0.05$.

Results

A total of 250 female patients (100%) were included in the study, with a mean age of 15.86 ± 1.33 years. The majority (185 patients, 74.0%) were admitted through the emergency department, while the remaining cases were elective admissions. The mean length of stay was 12.84 ± 9.46 days. A history of psychiatric illness was present in 237 patients (94.8%), while 194 patients (77.6%) had a history of psychotropic medication use. A prior psychiatric hospitalization was reported in 57 patients (22.8%), of whom 41 patients (69%) had been hospitalized only once. Regarding school attendance, 62.8% of patients were enrolled in regular education with good attendance, 12.4% in regular education with high absenteeism, 13.6% attended open high school, 6.4% had discontinued schooling, and 1.2% had already graduated. The medical and sociodemographic characteristics of the study sample are presented in Table 1.

Table 1. Sociodemographic and clinical characteristics of female inpatients in the child and adolescent psychiatry unit

Parameters		Frequency (n)	Percentage (%)
Gender	Female	250	100
Type of admission	Outpatient admission	63	25.2
	Emergency admission	185	74.0
School status	Regular education / Good attendance	157	62.8
	Regular education / High absenteeism	31	12.4
	Open high school	34	13.6
	School discontinued	16	6.4
	Graduate	3	1.2
Child's employment/engagement status	Employed/engaged in activities	30	12.0
	Not employed/engaged	211	84.4
Parental marital status	Together	162	64.8
	Separated	63	25.2
	Deceased	14	5.6
Mother's educational level	Illiterate	3	1.2
	Primary school	48	19.2
	Middle school	16	6.4
	High school	43	17.2
	University	23	9.2
Father's educational level	Primary school	39	15.6
	Middle school	21	8.4
	High school	31	12.4
	University	25	10.0
Family psychiatric history	Present	157	62.8
	Absent	73	29.2
Family history of psychotropic medication use	Present	112	44.8
	Absent	86	34.4
Family history of psychiatric hospitalization	Present	55	22.0
	Absent	146	58.4
Family history of suicide attempt	Present	40	16.0
	Absent	161	64.4

Upon admission, 164 patients (65.6%) had a history of self-injury, and 96 patients (38.4%) reported a recent suicide attempt. Additionally, 19 patients (7.6%) exhibited homicidal ideation or violent behavior at admission. Primary psychiatric diagnoses were identified in 212 patients (84.8%), with the most common diagnoses being MDD (162 patients, 64.8%), attention deficit and hyperactivity disorder (ADHD) (43 patients, 17.2%), SP (30 patients, 12.0%), and PTSD (24 patients, 9.6%). The remaining patients are those whose diagnosis cannot be clearly determined in the cross-sectional psychiatric interview at admission to hospital, and whose differential diagnosis will be made during the hospitalization process. Prominent personality organizations (DSM-5 Based Classification) were present in 131 patients (52.4%),

with 107 patients (42.8%) displaying Cluster B personality traits. Substance use was reported in 78 patients (31.2%) for cigarettes, 18 patients (7.2%) for alcohol, and 6 patients (2.4%) for illicit drugs. However, none of these patients were diagnosed with substance-related disorders according to the DSM-5. A pandemic-related onset or exacerbation of psychiatric symptoms was noted in 39 patients (15.6%), and a history of neglect or abuse was present in 49 patients (19.6%). The primary form of social support was family-based in 202 patients (80.8%). At admission, the mean CGAS score was 51–60, increasing to 71–80 at discharge. The CGI-S score decreased from a mean of 5 at admission to 3 at discharge. The distribution of diagnoses at admission and discharge, as well as CGI-S and CGAS scores, are detailed in Table 2.

Table 2. Diagnostic distribution, and personality organizations of patients at admission & clinic severity and functional scores at admission and discharge

Diagnostic categories		Diagnosis at admission n (%)					
At least one psychiatric disorder		212 (84.8)					
Neurodevelopmental disorders	Attention-deficit/Hyperactivity disorder	43 (17.2)					
	Tic Disorders	3 (1.2)					
	Autism spectrum disorder	4 (1.6)					
	Specific learning disorder	5 (2.0)					
	Intellectual disability	8 (3.2)					
Schizophrenia spectrum and other psychotic disorders		11 (4.4)					
RBipolar and related disorders		13 (5.2)					
Depressive disorders	Major depressive disorder	162 (64.8)					
	Disruptive mood dysregulation disorder	5 (2)					
Anxiety disorders	Specific phobia	18 (7.2)					
	Generalized anxiety disorder	14 (5.6)					
	Social anxiety disorder	30 (12.0)					
	Separation anxiety disorder	4 (1.6)					
	Panic disorder	12 (4.8)					
	Agoraphobia	1 (0.4)					
Obsessive-compulsive disorder		12 (4.8)					
Trauma- and stressor-related disorders	Post-traumatic stress disorder	24 (9.6)					
	Acute stress disorder	1 (0.4)					
	Adjustment disorder	5 (2.0)					
Eating disorders	Anorexia nervosa	12 (4.8)					
	Bulimia nervosa	13 (5.2)					
Elimination disorders	Enuresis	3 (1.2)					
Disruptive, impulse-control, and conduct disorders	Oppositional defiant disorder	15 (6.0)					
	Conduct disorder	4 (1.6)					
Personality organizations		131 (52.4)					
		Cluster A		Cluster B		Cluster C	
		10 (4.0)		107 (42.8)		20 (8.0)	
		Admission			Discharge		
		Mean	Min.	Max.	Mean	Min.	Max.
CGI-Severity Score		5	3	6	3	3	5
CGAS score		51-60	11-20	71-80	71-80	21-30	81-90
CGI: The clinical global impression CGAS: Children’s global assessment scale							

Psychotropic medication was administered to 226 patients (90.4%) during hospitalization. The most commonly prescribed medications were: Atypical antipsychotics (AAP): 205 patients (82.0%); Selective serotonin reuptake inhibitors (SSRI): 161 patients (64.4%); Mood stabilizers : 27 patients (10.8%); ADHD treatment agents (methylphenidate/atomoxetine/guanfacine): 16 patients (6.4%); Serotonin-norepinephrine reuptake inhibitors (SNRI): 16 patients (6.4%); Typical antipsychotics (TAP): 14 patients (5.6%) (Table 3).

Regarding academic background, 200 patients (80.0%) learned to read and write during the first semester of first grade, and 191 patients (76.4%) had no history of grade retention. The “High School Entrance Exam” scores of 32 patients (12.8%) were between 300 and 400 points.

No significant association was found between the number of prior psychiatric hospitalizations (single vs. multiple) and diagnoses at admission.

Table 3. Psychotropic medication use during hospitalization among female inpatients

Psychotropic medication categories	Patients (n)	Percentage (%)
Psychotropic medication use	226	90.4
Atypical antipsychotics	205	82.0
Selective serotonin reuptake inhibitors	161	64.4
Mood stabilizers	27	10.8
ADHD treatment agents (MPH/ATX/GXR)	16	6.4
Serotonin-norepinephrine reuptake inhibitors	16	6.4
Typical antipsychotics	14	5.6
Other medications (BDZ, NDRI, SARI, NaSSA, hydroxyzin, β-blocker, anticholinergic, melatonine)	35	14.0

MPH: methylphenidate, ATX: atomoxetine, GXR: guanfacine, BDZ: benzodiazepines, NDRI: norepinephrine–dopamine reuptake inhibitors, SARI: serotonin antagonist and reuptake inhibitors, NaSSA: noradrenergic and specific serotonergic antidepressants, ADHD: attention deficit and hyperactivity disorder

Associations between LoS and diagnostic category, polypharmacy, psychiatric comorbidities, RCADS and SDQ total scores, prominent personality organizations and clusters, MS use, and social support type were examined. Patients diagnosed with panic disorder (p=.003) and those with psychiatric comorbidities (p=.006) had significantly longer hospital stays. Significant differences in length of stay were observed across prominent personality clusters (p=.008). Post-hoc Dunn’s test revealed that patients with Cluster A personality traits had significantly longer hospital stays than those with Cluster B traits (p=.012) (Table 4).

Table 4. Comparison length of stay (LoS) across clinical variables

Clinical variables		Mean ± SD	Median (Min.-Max)	Mean ± SD	Median (Min.-Max.)	p-value
LoS		No MDD		MDD present		
		11.73 ± 7.93	11.00(1.00-49.00)	13.73 ± 10.06	13.00 (1.00-53.00)	.239
		No ADHD		ADHD present		
		13.37 ± 9.71	12.00(1.00-53.00)	12.00 ± 8.12	11.00(1.00 -40.00)	.523
		No PTSD		PTSD present		
		12.90 ± 9.37	11.00(1.00-53.00)	17.73 ± 10.31	18.00(1.00 -33.00)	.081
		No panic disorder		Panic disorder present		
		12.69 ± 9.10	11.00 (1.00 - 49.00)	21.25 ± 12.33	20.00 (2.00 - 53.00)	.003
		No social phobia		Social phobia present		
		12.88 ± 9.46	11.00 (1.00 - 53.00)	14.83 ± 9.33	13.50 (2.00 - 40.00)	.216
		No suicide attempt		Suicide attempt present		
		12.79 ± 9.17	11.00 (1.00 - 53.00)	19.00 ± 12.38	16.00 (4.00 - 40.00)	.067
		No self- injury		Self injury present		
		12.90 ± 9.37	11.00 (1.00 - 53.00)	17.73 ± 10.31	18.00 (1.00 - 33.00)	.081
	No comorbidity		Comorbidity present			
	11.67 ± 8.69	11.00 (1.00 - 49.00)	15.32 ± 10.57	14.00 (1.00 - 53.00)	.006	
	No personality organizations		Personality organizations present			
	13.61 ± 11.20	11.00 (1.00 - 53.00)	13.66 ± 7.96	14.00 (1.00 - 40.00)	.141	
Comparison of length of stay according to personality clusters*						
		Mean ± SD		Median (Min.-Max.)		P
Personality clusters	Cluster A	21.70 ± 11.23		18.50 (5.00 - 40.00)		.008
	Cluster B	12.37 ± 7.25		12.00 (1.00 - 37.00)		
	Cluster C	15.25 ± 7.61		14.00 (2.00 - 30.00)		
* Mann–Whitney U test. Post- Hoc Dunn test, LoS: Length of stay, MDD: major depressive disorder, ADHD: attention deficit and hyperactivity disorder, PTSD: post-traumatic stress disorder						

Self-report scales subscale and total scores were calculated. As shown in Table 5, the mean RCADS subscale scores were as follows: SAD: 7.58 ± 4.31 , SP: 15.96 ± 7.52 , OCD: 8.74 ± 4.42 , PD: 14.95 ± 7.42 , GAD: 10.35 ± 4.22 , MDD: 18.92 ± 7.41 , Total anxiety and depression score: 77.74 ± 29.11 , Total anxiety score: 58.07 ± 23.53 . The mean SDQ subscale scores were as follows: Hyperactivity/inattention: 6.36 ± 2.15 ,

Conduct problems: 3.29 ± 2.27 , Emotional symptoms: 6.15 ± 2.68 , Peer relationship problems: 4.37 ± 2.06 , Prosocial behavior: 7.71 ± 2.20 , Total difficulties score: 20.27 ± 6.58 . In Table 6 presents the comparison of total and subscale scores of RCADS and SDQ based on admission diagnoses, as well as the significance of the relationship according to the presence or absence of diagnoses.

Table 5. RCAD & SDQ subscale & total scores of female inpatients

Parameters		n	Mean $\pm$ SD	Median (Min.-Max.)
Age		250	15.86 ± 1.33	16.00 (11.08 - 18.72)
Length of stay		244	12.84 ± 9.46	11.00 (1.00 - 53.00)
Revised child anxiety and depression scale	Separation anxiety disorder	159	7.58 ± 4.31	7.00 (.00 - 20.00)
	Social phobia	155	15.96 ± 7.52	17.00 (.00 - 27.00)
	Obsessive compulsive disorder	161	8.74 ± 4.42	9.00 (.00 - 18.00)
	Panic disorder	151	14.95 ± 7.42	14.00 (.00 - 27.00)
	Generalized anxiety disorder	164	10.35 ± 4.22	11.00 (.00 - 18.00)
	Major depressive disorder	153	18.92 ± 7.41	21.00 (.00 - 30.00)
	Total anxiety depression	129	77.74 ± 29.11	83.00 (8.00 - 129.00)
	Total anxiety	135	58.07 ± 23.53	62.00 (5.00 - 102.00)
Strengths & difficulties questionnaire	Hyperactivity/inattention	169	6.36 ± 2.15	6.00 (.00 - 10.00)
	Behavioral problems	170	3.29 ± 2.27	3.00 (.00 - 10.00)
	Emotional problems	168	6.15 ± 2.68	6.50 (.00 - 10.00)
	Peer problems	169	4.37 ± 2.06	5.00 (.00 - 10.00)
	Prosocial behaviors	171	7.71 ± 2.20	8.00 (2.00 - 10.00)
	Total difficulty score	158	20.27 ± 6.58	20.50 (4.00 - 35.00)

Table 6. Comparison of RCADS and SDQ scores by psychiatric diagnoses at admission

Scale scores	No MDD		MDD present		P
	Mean $\pm$ SD	Median (Min-Max)	Mean $\pm$ SD	Median (Min-Max.)	
R-total	51.60 ± 22.23	54.00 (5.00 - 101.00)	61.35 ± 23.12	64.50 (5.00 - 102.00)	.016
R-total anx. depr.	68.19 ± 26.99	65.00 (13.0 - 129.0)	82.38 ± 28.32	91.00 (8.00 - 128.00)	.004
SDQ Emotional s.	5.52 ± 2.69	5.00 (.00 - 10.00)	6.52 ± 2.60	8.00 (.00 - 10.00)	.024
SDQ total	19.6 ± 6.0	19 (5.00-34.00)	20.9 ± 6.5	21 (6.00-35.00)	.232
Scale scores	No BPD		Present BPD		P
	Mean $\pm$ SD	Median (Min-Max)	Mean $\pm$ SD	Median (Min-Max.)	
R-total anx.	55.46 ± 12.04	63.00 (9.00 - 96.00)	69.22 ± 13.46	79.00 (55.00 - 98.00)	.266
R-total anx.dep	77.1 ± 27.9	78 (8.00-126.00)	80.4 ± 29.00	84 (10.00-128.00)	.301
SDQ Conduct s.	3.16 ± 2.24	3.00 (.00 - 10.00)	5.09 ± 2.26	6.00 (2.00 - 9.00)	.007
SDQ total	20.0 ± 6.5	20 (4.00-35.00)	21.4 ± 6.9	22 (7-35)	.274
Scale scores	No psychotic disorders		Present psychotic disorders		P
	Mean $\pm$ SD	Median (Min-Max)	Mean $\pm$ SD	Median (Min-Max.)	
R-total anx	56.46 ± 11.04	63.00 (9.00 - 94.00)	70.35 ± 16.12	83.00 (52.00 - 94.00)	.220
R-total anx. depr.	71.5 ± 26.4	76 (10.00-123.00)	74.5 ± 26.8	84 (14.00-124.00)	.354
SDQ Emotional s.	4.13 ± 2.36	4.50 (1.00 - 8.00)	6.28 ± 2.65	7.00 (.00 - 10.00)	.029
SDQ total	20.8 ± 5.6	19 (4.00-33.00)	22.4 ± 5.8	21 (6-33)	.373

*Mann-Whitney U test, RCAD: Revised child anxiety and depression Scale R: RCAD abbreviation SDQ: Strengths & difficulties questionnaire MDD: Major depressive disorder, GAD: Generalized anxiety disorder, BPD: bipolar disorder, *P<.05. **P<.01. ***P<.001

Table 6. Comparison of RCADS and SDQ scores by psychiatric diagnoses at admission

Scale scores	No MDD		MDD present		p
	Mean ± SD	Median (Min-Max)	Mean ± SD	Median (Min-Max.)	
No panic disorder					
R-total anx.	57.24 ± 22.87	61.00 (5.00 - 102.00)	80.12 ± 18.07	85.00 (51.00 - 101.00)	.004
R-total anx.depr.	76.87 ± 28.12	83.00 (8.00 - 128.00)	102.00 ± 27.14	112.00 (55.00 - 129.00)	.010
SDQ conduct p.	3.37 ± 2.30	3.00 (.00 - 10.00)	1.78 ± 1.20	2.00 (.00 - 4.00)	.029
SDQ total	22.1 ± 5.4	21.9 (5.00-34.00)	25.3 ± 5.7	21 (8.00-33.00)	.344
No social phobia					
R-total. anx.	56.53 ± 23.47	58.50 (5.00 - 102.00)	72.88 ± 15.38	77.00 (37.00 - 96.00)	.005
R-total.anx depr.	75.86 ± 29.04	81.50 (8.00 - 129.00)	95.24 ± 19.00	100.00 (55.00 - 124.00)	.006
SDQEmotional s.	5.97 ± 2.63	6.00 (.00 - 10.00)	7.43 ± 2.63	8.00 (.00 - 10.00)	.007
SDQ total	19.0 ± 3.5	17 (6.00-33.00)	21.4 ± 5.7	19 (9-33)	.574
No GAD					
R-total anx.	57.46 ± 23.09	61.00 (5.00 - 102.00)	79.43 ± 14.32	82.00 (54.00 - 101.00)	.010
R-total anx. depr.	77.02 ± 28.43	83.00 (8.00 - 128.00)	103.14±20.32	108.00 (64.00- 129.00)	.014
SDQ total	20.1 ± 6.4	20 (4.00-35.00)	21.3 ± 6.8	22 (7.00-35.00)	.194
No ADHD					
R-total anx.	58.46 ± 13.07	61.00 (8.00 - 98.00)	71.33 ± 12.12	80.00 (54.00 - 96.00)	.110
R-total anx.depr.	77.5 ± 28.7	78 (9.00–126.00)	79.9 ± 29.8	81 (10.00–129.00)	.224
SDQ ADHD s.	6.18 ± 2.13	6.00 (.00 - 10.00)	7.25 ± 2.03	7.50 (2.00 - 10.00)	.018
SDQ conduct s.	2.97 ± 2.03	3.00 (.00 - 9.00)	4.86 ± 2.81	4.50 (.00 - 10.00)	.001
SDQ total.	19.59 ± 6.09	20.00 (6.00 - 35.00)	23.21 ± 8.08	24.50 (4.00 - 35.00)	.012
*Mann-Whitney U test, RCAD: Revised child anxiety and depression Scale R: RCAD abbreviation SDQ: Strengths & difficulties questionnaire MDD: Major depressive disorder, GAD: Generalized anxiety disorder, BPD: bipolar disorder,*P<.05. **P<.01. ***P<.001					

Discussion

In this study, we retrospectively reviewed the sociodemographic characteristics, length of stay, admission diagnoses, pharmacological treatments, and psychometric scale scores of female children and adolescents receiving inpatient psychiatric care. Our findings revealed several key insights. The mean age of hospitalized female patients was predominantly within the adolescent range, consistent with previous studies on child and adolescent psychiatric inpatient units in Türkiye, which reported mean ages of 15.2 ± 1.6 years and 15.1 ± 1.8 years, similar to our findings (15.8 ± 1.3 years) [9,21]. Adolescence is a developmental period during which disorders such as enuresis and separation anxiety decline, while conditions more commonly seen in adulthood—including depression, social anxiety disorder, generalized anxiety disorder, panic disorder, and substance use disorders—become more prevalent. Additionally, adolescent females have higher rates of functional impairment and lower remission rates in psychiatric disorders compared to their male counterparts [22]. In studies conducted in a mixed adolescent psychiatric inpatient unit, 70% and 82% of patients were female, respectively, with mood disorders and externalizing disorders being the most common diagnoses [23,24]. While girls and boys

did not differ in the severity of mental health problems, female gender was a stronger predictor of hospitalization [25]. Regarding the mode of admission, we found that 74% of patients were admitted through the emergency department, highlighting acute psychiatric crises as a major reason for hospitalization in child and adolescent psychiatric inpatient units. The high proportion of ED referrals may also place a significant burden on pediatric emergency services. Studies comparing hospitals with and without child psychiatry units have shown that psychiatric ED visits are more frequent in hospitals with dedicated child psychiatry services, whereas patients tend to have longer ED stays in hospitals without these units [26]. These findings underscore the importance of improving psychiatric crisis intervention services in pediatric emergency settings, including stabilization strategies and early intervention programs to prevent unnecessary hospitalizations. It has been shown that there has been an increase in emergency department visits and hospitalizations, and that this rise is not solely due to suicide attempts or exacerbated psychiatric symptoms [27]. Due to the shortage of specialized clinicians and centers in child mental health services, families are increasingly turning to emergency departments and inpatient units where care can be accessed more quickly [24].

Self-injury and suicidal behaviors are among the most common reasons for admission to psychiatric inpatient units [28]. In our findings, the rates of self-injury (65.6%) and suicide attempts (38.4%) among admitted girls were remarkably high. Among adolescent girls, suicidal ideation and suicide attempts are significantly more frequent than in boys, whereas adolescent boys are more likely to exhibit behavioral problems and die by suicide [29]. The higher prevalence of internalizing disorders among girls results in a greater number of suicide attempts, though these attempts tend to be less lethal compared to those of boys [30]. In one study examining hospital admission diagnoses, disruptive disorders were equally distributed between genders; however, suicide risk was significantly higher in girls, while danger to others was more prominent in boys [25]. In a mixed-gender psychiatric inpatient unit, 58% of admitted patients presented with suicidal problems [23]. Addressing self-injury and suicide attempts is crucial from both prevention and intervention perspectives.

The distribution of psychiatric diagnoses at admission revealed that MDD was the most common diagnosis (64.8%). The CGAS scores at admission ranged between 51–60, indicating significant functional impairment in our inpatient sample. These findings align with previous studies on child and adolescent psychiatric inpatient populations in Türkiye, where MDD was consistently the most frequent diagnosis, sometimes categorized under mood disorders [10,21,31]. In contrast, prevalence studies in Turkish school samples have reported much lower rates of depression, with estimates of 12.55% in adolescents and 4.2% in combined child and adolescent samples [32,33]. This suggests that MDD is significantly more prevalent among psychiatric inpatients compared to community samples, likely due to greater severity and functional impairment in hospitalized cases.

In our study, ADHD (17.2%), social anxiety disorder (12.0%), and PTSD (9.6%) were also prevalent among inpatients. A community-based prevalence study in Türkiye found that when functional impairment was considered, the prevalence rates for ADHD (19.7%), anxiety disorders (6.7%) were lower than those observed in our inpatient sample [34]. A longitudinal study examining changes in psychiatric inpatient diagnoses over time reported an increase in ADHD, anxiety disorders, and depression [35]. Although ADHD was less prevalent in our inpatient population than in community samples, its occurrence was still notable (17.2%). Given the high rates of complex comorbidity among inpatients, the frequent co-occurrence of ADHD and social anxiety disorder (37%) is unsurprising [33]. A comparison of diagnostic distributions between community and inpatient populations suggests that psychiatric disorders in hospitalized patients exhibit distinct patterns and higher prevalence rates.

In our study, RCADS scores exceeded clinical cut-off values across all subscales, indicating high levels of anxiety and depressive symptoms in the sample. Furthermore, the SDQ

results showed that emotional problems, peer difficulties, and total difficulties scores were within the abnormal range, while ADHD and conduct problems scores were borderline, and prosocial behavior scores remained within the normal range. These findings are consistent with our most frequent primer psychiatric diagnoses—depression, anxiety, and ADHD—which encompass both internalizing and externalizing disorders. The significant impairment in peer relationships aligns with the high prevalence of borderline personality traits among inpatients, as difficulties in interpersonal relationships are a hallmark feature of borderline personality organization. Additionally, the history of neglect or abuse in 19.6% of patients highlights the strong association between childhood trauma and psychiatric disorders, particularly PTSD. The preservation of prosocial behaviors in many patients suggests that these children and adolescents may still have adaptive social skills, reinforcing the importance of early intervention and outpatient mental health support to prevent further deterioration.

A key finding of our study is that more than half of the patients exhibited personality organizations, with Cluster B, particularly borderline personality features, being the most prevalent. A study on adolescents with borderline personality organization reported higher rates of both internalizing and externalizing psychiatric disorders, as well as more complex comorbidity profiles [36]. Similarly, in our study, MDD and anxiety disorders were the most common internalizing disorders, while ADHD was the most common externalizing disorder. The co-occurrence of mood or anxiety disorders with impulsivity was also a frequent finding in our sample [36]. Since self-injury and suicidal behaviors are diagnostic criteria for borderline personality disorder [37], the high prevalence of self-injury (65.6%) and suicide attempts (38.4%) among inpatients can be understood within the context of complex comorbidity.

When analyzing length of stay (LoS) in child psychiatry inpatient units, prior studies in Türkiye have reported mean hospitalization durations ranging from 8–10 days to 26–29 days, with most stays lasting less than one month [8,12,21]. The shorter-than-expected hospital stay in our results is thought to be due to families' open requests to remove their children before the end of treatment, as compulsory admission is not an option in our inpatient unit. Although LoS varies widely across different countries, short-term hospitalizations are the predominant trend. In the U.S. and the U.K., mean LoS in child and adolescent psychiatry units has been reported as 19–32 days [38–40]. LoS is influenced by multiple factors, including individual patient characteristics, national healthcare policies, insurance systems, bed availability, and family decisions regarding early discharge.

In our study, patients with panic disorder ($p=.003$) and psychiatric comorbidities ($p=.006$) had significantly longer hospital stays. This finding supports previous studies showing that comorbid psychiatric disorders contribute to prolonged hospitalization

[39,41]. One study found that LoS was positively correlated with agoraphobia, but no significant association was identified for panic disorder alone [40]. The frequent outpatient hospital admissions of patients with panic disorder, the need to exclude urgent organic causes for somatic symptoms, and the time consuming effect of pharmacotherapeutic agents are thought to prolong the length of stay in these patients. Additionally, personality organizations were linked to differences in LoS, with Cluster A personality traits being associated with significantly longer hospitalization compared to Cluster B traits ($p=.012$). Since Cluster A personality traits are commonly linked to psychotic disorders, it is not surprising that longer LoS has been reported in patients with psychosis [39,41]. Indeed, one study found that psychotic disorder was the primary diagnosis associated with the longest LoS [8].

An important finding of our study is that 15.6% of patients reported the onset or exacerbation of psychiatric symptoms during the COVID-19 pandemic. The pandemic, with its infection risks, strict public health measures, and social restrictions, significantly altered the daily lives of children and adolescents. A longitudinal meta-analysis covering 1.5 years of the pandemic demonstrated that children and adolescents worldwide experienced a rise in mental health problems, with increases in anxiety and depressive symptoms [42].

Regarding treatment, 90.4% of inpatients received psychotropic medication, with AAPs (82.0%) and SSRIs (64.4%) being the most frequently prescribed. Mood stabilizers (10.8%) were the third most commonly used drug class. The high prevalence of pharmacological treatment in inpatient psychiatry units is well-documented, with studies in Türkiye reporting similar patterns of medication use. Previous studies found high rates of antipsychotic use (80.4%, 91.6%, 94.6%, 97%) with mood stabilizers and anxiolytics ranking third and fourth, and ADHD treatment agents (methylphenidate/atomoxetine/guanfacine) occasionally appearing in the top four [6-7,10,21]. One study found that anxiolytics were the second most commonly prescribed drug class, which was attributed to the use of benzodiazepines instead of electroconvulsive therapy in catatonic cases [9]. The high prescription rate of atypical antipsychotics (82.0%) compared to typical antipsychotics (5.6%) can be explained by better tolerability, lower risk of extrapyramidal side effects, and FDA approval for both psychotic disorders and mood disorders in children and adolescents [43,44]. Similarly, SSRIs were more commonly prescribed than SNRIs (6.4%), likely due to better tolerability, lower discontinuation rates, and FDA approval for MDD treatment in children and adolescents [45,46].

Our study demonstrated that patients showed significant improvements in functioning and symptom severity from admission to discharge. A longitudinal study on the evolving profile of psychiatric inpatients revealed that functional impairment and CGAS scores have worsened in more recent

samples, likely due to increased demand for inpatient services and prioritization of more severe cases [35]. In our study, CGAS scores at admission indicated significant functional impairment, while CGI-S scores reflected severe illness at baseline. These findings align with prior studies, which also reported functional improvements from admission to discharge, with increased CGAS scores and decreased CGI-S scores [47]. Özbaran similarly reported that CGI-S scores declined from 5 to 3 during hospitalization, consistent with our results [7]. Studies have shown improvement in adolescents during hospitalization and after discharge, particularly with reductions in self-injury and emotional symptoms [23,24].

Strengths and Limitations

Limitations

Since our inpatient psychiatry unit exclusively admits female patients, no data were obtained for male patients, preventing gender-based comparisons. The all-female sample may limit the generalizability of the findings. Because this is a retrospective study, there are limitations regarding whether the K-SADS-PL-DSM-5-T was applied uniformly to all patients. Some data were excluded due to incomplete records, and only cases with complete diagnostic evaluation were analyzed. The inclusion of self-report forms of the RCAD and SDQ scales, but not parent forms, may limit multi-informant validity. Additionally, due to the retrospective design of the study and the dynamic nature of medical record-keeping, certain data were added to patient files over time, resulting in incomplete records for some variables. Consequently, the total number of cases analyzed for each parameter varied, and some data points were missing.

Strengths

One of the major strengths of this study is that it provides inpatient data over an 20-month period, which is particularly valuable given the limited number of inpatient child and adolescent psychiatry units in Türkiye. Additionally, the large sample size enhances the robustness of our findings. The study's comprehensive approach, which examines sociodemographic characteristics, psychiatric diagnoses, hospitalization indications, and psychopharmacological treatment patterns, provides valuable insights into inpatient psychiatric care in children and adolescents.

Conclusion

Consequently, our findings revealed that the diagnostic distribution in inpatient psychiatry units differed from community samples. This difference may be due to the psychiatric diagnoses that are the indications for hospitalization and the fact that patients admitted for hospitalization exhibit more severe symptoms and have significant functional impairment.

The high frequency of psychiatric referrals in pediatric emergency departments and the length of emergency department stays

appear to be influenced by the availability of child psychiatry units. To reduce the burden of psychiatric cases in emergency settings, efforts should focus on enhancing outpatient mental health services and establishing structured crisis intervention protocols at earlier stages.

We emphasize the importance of detailed psychiatric evaluations for adolescent girls diagnosed with complex comorbid psychiatric disorders who are considered high-risk for self-injury in outpatient settings. Implementing supportive therapeutic interventions alongside may help reduce psychiatric crises and prevent hospitalization, which represents the final step in psychiatric care. In cases where hospitalization is necessary, adolescent psychiatric inpatient units effectively meet the important needs of young people with self-injury, suicide risk, or other serious mental health problems. Future multi-center studies will be essential to further explore and validate these findings, providing a more comprehensive understanding of inpatient psychiatric care needs in children and adolescents.

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Ethical Approval

Approved by the Istanbul Medeniyet University Faculty of Medicine, Göztepe Training and Research Hospital City Hospital Ethics Committee (No: 2023/0635; Date: 27 Septembe 2023).

Patient Consent

Informed consent was waived due to the retrospective design.

Conflict of Interest

The authors declare no conflict of interest.

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References

- James A, Worrall-Davies A. Provision of intensive treatment: intensive outreach, day units, and in-patient units. In: Thapar A, Pine DS, Scott S, et al, eds. *Rutter's Child and Adolescent Psychiatry*. 6th ed. Abingdon: John Wiley & Sons; 2015:648-60.
- Hayes C, Simmons M, Simons C, Hopwood M. Evaluating effectiveness in adolescent mental health inpatient units: a systematic review. *Int J Ment Health Nurs*. 2018;27:498-513.
- Green J, Jacobs B, Beecham J, et al. Inpatient treatment in child and adolescent psychiatry: a prospective study of health gain and costs. *J Child Psychol Psychiatry*. 2007;48:1259-67.
- Similä N, Hakko H, Riipinen P, Riala K. Gender specific characteristics of revolving door adolescents in acute psychiatric inpatient care. *Child Psychiatry Hum Dev*. 2018;49:225-33.
- Lukkari SH, Hakko H, Partanen MA, et al. Characteristics of adolescent psychiatric inpatients in relation to their history of preceding child psychiatric inpatient care. *J Nerv Ment Dis*. 2019;207:569-74.
- Taş FV, Güvenir T, Miral S. Psychotropic drug use in a child and adolescent inpatient psychiatry clinic. *Çocuk Gençlik Ruh Sağlığı Derg*. 2007;14:139-50.
- Özbaran B, Köse S, Yılmaz E, et al. Evaluation of the contribution of inpatient services and experiences on improvement in child and adolescent psychiatry practice. *Anadolu Psikiyatri Derg*. 2016;17:120-6.
- Usta MB, Ürer E, Aral A, Say GN. Factors effecting length of stay in child psychiatry hospital setting. *Klin Psikiyatri Derg*. 2017;20:263-7.
- Ayaydın H. The diagnoses and sociodemographic characteristics of children and adolescents treated in a university hospital psychiatry inpatient service. *Harran Üniv Tıp Fak Derg*. 2020;17:182-8.
- Karadağ M, Türk N, Gökçen C, Topal Z. Sociodemographic and diagnostic characteristics of inpatients in a university hospital child and adolescent psychiatry clinic. *Çocuk Gençlik Ruh Sağlığı Derg*. 2021;28:7-11.
- Bobier C, Warwick M. Factors associated with readmission to adolescent psychiatric care. *Aust N Z J Psychiatry*. 2005;39:600-6.
- Şentürk Pılan B, Bilaç Ö, Orhon Z, et al. Medication use in a child and adolescent inpatient unit of a mental health hospital. *Çocuk Gençlik Ruh Sağlığı Derg*. 2017;24:207-18.
- Kaufman J, Birmaher B, Brent D, et al. Schedule for affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL): initial reliability and validity data. *J Am Acad Child Adolesc Psychiatry*. 1997;36:980-8.
- Ünal F, Öktem F, Çetin Çuhadaroglu F, et al. Reliability and validity of the schedule for affective disorders and schizophrenia for school-age children-present and lifetime version DSM-5 Turkish adaptation (K-SADS-PL-DSM-5-T). *Türk Psikiyatri Derg*. 2019;30:42-50.
- Guy W. *ECDEU assessment manual for psychopharmacology*. Washington, DC: US Department of Health, Education, and Welfare; 1976.
- Shaffer D, Gould MS, Brasic J, et al. A children's global assessment scale (CGAS). *Psychopharmacol Bull*. 1985;21:747-8.
- Goodman R, Meltzer H, Bailey V. The strengths and difficulties questionnaire: a pilot study on the validity of the self-report version. *Eur Child Adolesc Psychiatry*. 1998;7:125-30.
- Güvenir T, Özbek A, Baykara B, et al. Psychometric properties of the turkish version of the strengths and difficulties questionnaire (SDQ). *Çocuk Gençlik Ruh Sağlığı Derg*. 2008;15:65-74.
- Chorpita BF, Yim L, Moffitt C, et al. Assessment of symptoms of DSM-IV anxiety and depression in children: a revised child anxiety and depression scale. *Behav Res Ther*. 2000;38:835-55.
- Gormez V, Kılınçaslan A, Oregul AC, et al. Psychometric properties of the Turkish version of the revised child anxiety and depression scale-child version in a clinical sample. *Psychiatry Clin Psychopharmacol*. 2017;27:84-92.
- Onat M, Akçay E, Demir A, et al. Clinical and sociodemographic characteristics of patients hospitalized in a child and adolescent psychiatry inpatient unit. *Türkiye Çocuk Hast Derg*. 2023;1-7.
- Costello EJ, Mustillo S, Erkanli A, et al. Prevalence and development of psychiatric disorders in childhood and adolescence. *Arch Gen Psychiatry*. 2003;60:837-44.
- Hanssen-Bauer K, Heyerdahl S, Hatling T, et al. Admissions to acute adolescent psychiatric units: a prospective study of clinical severity and outcome. *Int J Ment Health Syst*. 2011;5:1.
- Hayes C, Simmons M, Palmer VJ, et al. A profile of adolescents admitted to a private inpatient unit and mental health outcomes. *Australas Psychiatry*. 2020;28:563-7.
- Dil L, Mérelle S, Lommerse N, et al. Gender-specific pathways in mental health crisis in adolescents. *BMC Psychiatry*. 2024;24:235.

26. Sheridan DC, Johnson KP, Fu R, et al. Impact of an inpatient psychiatric unit on pediatric emergency mental health care. *Pediatr Emerg Care*. 2017;33:1-4.
27. Clisu DA, Layther I, Dover D, et al. Alternatives to mental health admissions for children and adolescents experiencing mental health crises: a systematic review. *Clin Child Psychol Psychiatry*. 2022;27:35-60.
28. Kronström K, Tiiri E, Jokiranta-Olkonemi E, et al. Suicidality among child and adolescent psychiatric inpatients: time trend study comparing 2000 and 2011. *Eur Child Adolesc Psychiatry*. 2019;28:1223-30.
29. Pattyn E, Verhaeghe M, Bracke P. The gender gap in mental health service use. *Soc Psychiatry Psychiatr Epidemiol*. 2015;50:1089-95.
30. Boyd A, Van de Velde S, et al. Gender differences in mental disorders and suicidality in Europe. *J Affect Disord*. 2015;173:245-54.
31. Serim Demirgören B, Özbek A, Gençer O. Factors affecting improvement of children and adolescents treated in the child and adolescent psychiatry inpatient unit. *J Int Med Res*. 2017;45:1318-23.
32. Toros F, Bilgin NG, Buğdaycı R, et al. Prevalence of depression as measured by the CBDI in a predominantly adolescent school population in Turkey. *Eur Psychiatry*. 2004;19:264-71.
33. Demir T, Karacetin G, Demir DE, Uysal O. Epidemiology of depression in an urban population of Turkish children and adolescents. *J Affect Disord*. 2011;134:168-76.
34. Ercan ES, Bilaç Ö, Uysal Özaslan T, et al. Prevalence of psychiatric disorders among Turkish children. *Child Psychiatry Hum Dev*. 2016;47:35-42.
35. Kronström K, Tiiri E, Vuori M, et al. Multi-center nationwide study on pediatric psychiatric inpatients 2000–2018. *Eur Child Adolesc Psychiatry*. 2023;32:835-46.
36. Ha C, Balderas JC, Zanarini MC, et al. Psychiatric comorbidity in hospitalized adolescents with borderline personality disorder. *J Clin Psychiatry*. 2014;75:e457-64.
37. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th ed. Washington, DC: APA; 2013.
38. Newman L, Harris V, Evans LJ, Beck A. Factors associated with length of stay in psychiatric inpatient services in London, UK. *Psychiatr Q*. 2018;89:33-43.
39. Zeshan M, Waqas A, Naveed S, et al. Factors predicting length of stay in an adolescent psychiatric unit. *J Can Acad Child Adolesc Psychiatry*. 2018;27:142.
40. Reddy R, Ha C, Newlin E, Sharp C. Predictors of length of stay in a psychiatric adolescent treatment program. *J Psychiatr Pract*. 2017;23:342-51.
41. Zanato S, Miscioscia M, Traverso A, et al. Factors associated with long-stay hospitalization in a child neuropsychiatry unit. *Healthcare (Basel)*. 2021;9:1241.
42. Wolf K, Schmitz J. Longitudinal effects of the COVID-19 pandemic on child and adolescent mental health. *Eur Child Adolesc Psychiatry*. 2024;33:1257-312.
43. Orsolini L, Tomasetti C, Valchera A, et al. An update of safety of clinically used atypical antipsychotics. *Expert Opin Drug Saf*. 2016;15:1329-47.
44. Vitiello B. Principles in using psychotropic medication in children and adolescents. In: Rey JM, ed. *IACAPAP e-Textbook of Child and Adolescent Mental Health*. Geneva: IACAPAP; 2012.
45. Garland EJ, Kutcher S, Virani A, Elbe D. Update on the use of SSRIs and SNRIs with children and adolescents in clinical practice. *J Can Acad Child Adolesc Psychiatry*. 2016;25:4-10.
46. Corponi F, Fabbri C, Serretti A. Antidepressants: indications, contraindications, interactions, and side effects. In: Riederer P, Laux G, Mulsant B, et al, eds. *NeuroPsychopharmacotherapy*. Cham: Springer; 2020.
47. Kennedy J, Hembry P, Green D, et al. Predictors of change in global psychiatric functioning at an inpatient adolescent psychiatric unit. *Clin Child Psychol Psychiatry*. 2020;25:471-82.