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Recurrent out-of-hours psychiatric presentations in adolescents: Clinical characteristics and associated factors

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Abstract

Recurrent out-of-Hour's presentations among adolescents represent a high-risk group requiring targeted clinical attention. This study aimed to identify sociodemographic and clinical factors associated with repeated out-of-Hours psychiatric utilization. This retrospective study included adolescents aged 12-17 years who presented to the pediatric emergency department of a tertiary hospital between October 2022 and September 2024. Patients with three or more psychiatric visits were identified (n=50). Sociodemographic characteristics, psychiatric diagnoses, medication use, self-harm and suicide attempt history, and functional levels (CGAS) were extracted from electronic medical records. Of 1.355 psychiatric emergency evaluations, 15.64% (n=212) were recurrent visits, corresponding to 50 adolescents (32 girls, 18 boys). School non-attendance was significantly more common among boys (p=.018). Boys also had significantly higher numbers of admissions (Mann-Whitney U=348, p=.003). Although diagnostic distributions did not differ by sex, girls demonstrated a significantly higher rate of suicide attempts, consistent with global patterns of increased suicidal behavior among female adolescents. Short-acting intramuscular medications were administered more frequently to boys (55.6% vs. 31.3%; p=.016). No sex differences were found regarding inpatient referral or hospitalization outcomes. In regression analysis, a history of suicide attempt was a significant predictor of lower functioning, with an estimated 11-point decrease in CGAS scores (B=−11.22, p=.007). Adolescents with recurrent psychiatric visits represent a vulnerable subgroup with complex clinical and psychosocial needs. Beyond acute crises, repeated presentations appear to reflect broader difficulties including educational disengagement, family and socioeconomic factors, and gender-specific patterns of risk. The strong link between suicide attempts and impaired functioning highlights the need for thorough risk assessment and coordinated follow-up. Enhancing school support, family involvement, and access to mental health services may help reduce recurrent visits. Future multicenter prospective studies are required to further clarify contributing factors and guide effective interventions.

Keywords: Child and adolescent psychiatry, recurrent psychiatric presentations, suicide attempts, ADHD

Introduction

Pediatric out-of-hours psychiatric evaluations constitute a critical component of mental health service delivery, particularly for adolescents who face barriers in accessing routine outpatient care [1]. Limited awareness of mental health issues in the community, social interpretations of psychiatric symptoms, and the high demand on child psychiatry outpatient clinics contribute to increased reliance on emergency services for acute psychiatric assessment. Providing timely psychoeducation and appropriate referrals during these encounters is essential for ensuring that young people are effectively integrated into the mental healthcare system.

Epidemiological research in Türkiye indicates that the prevalence of psychiatric disorders among children and adolescents is approximately 17.1% [2]. International and national reports show that 6.7% of pediatric emergency department visits require psychiatric evaluation and that such presentations have been steadily increasing over recent years [3]. Furthermore, emergency psychiatric consultations are associated with longer lengths of stay compared to non-psychiatric emergency presentations, highlighting their clinical and operational burden on emergency departments [3].

Existing literature identifies several demographic and clinical factors associated with repeated psychiatric visits. Presenting

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complaints differ by sex and age, with self-harm behaviors being more prominent among girls, whereas aggression-related presentations are more common among boys [4]. Recurrent psychiatric presentations are associated with psychiatric comorbidities, substance use, and psychotic disorders [5]. The risk of recurrence within six months is higher among female adolescents, individuals aged 14-17 years, and those with a history of psychiatric hospitalization during the index visit [6]. Additional risk factors—such as prior or ongoing psychiatric treatment, previous hospitalizations, involvement with social services, suicide attempts, and behavioral problems—have also been associated with repeated presentations [7].

A clearer understanding of the clinical and sociodemographic characteristics of adolescents who repeatedly present to emergency psychiatry services is essential for developing more effective intervention strategies and reducing recurrent visits. Serving a broad and diverse population, our hospital provides emergency psychiatric evaluations through consultations requested by the general pediatric emergency department. The present study aims to examine the clinical features of adolescents with repeated psychiatric presentations and to contribute to the growing body of literature on factors associated with recurrent visits.

A clearer understanding of the clinical and sociodemographic characteristics of adolescents who repeatedly present to psychiatry services is essential for developing effective intervention strategies and reducing recurrent visits. Serving a broad and diverse population, our hospital provides emergency psychiatric evaluations through consultations requested by the general pediatric emergency department. Accordingly, this study aimed to examine the clinical features of adolescents with recurrent psychiatric presentations. We hypothesized that repeated presentations would be associated with a higher burden of psychiatric comorbidities and more severe clinical profiles. The novelty of this study lies in its real-world evaluation of recurrent emergency psychiatric use in Türkiye, with the potential to inform early identification and targeted intervention strategies.

Material and Methods

Study Design and Setting

This retrospective study was conducted at Marmara University Pendik Training and Research Hospital, a high-capacity tertiary medical center located on the Anatolian side of Istanbul. The hospital provides continuous child and adolescent psychiatric services, including out-of-regular-hours mental health evaluations. All children and adolescents presenting with psychiatric complaints outside regular working hours are first admitted to the pediatric emergency department and evaluated by a pediatrician, after which those requiring psychiatric assessment are referred for consultation to the Child and Adolescent Psychiatry clinic. Psychiatric evaluations are conducted in a dedicated private consultation room to ensure confidentiality, and adolescents awaiting inpatient admission are observed in a high-acuity area under joint pediatric and psychiatry supervision.

Sample and Procedure

The study included adolescents aged 12-17 years who presented to the pediatric emergency department with psychiatric complaints between October 1, 2022, and October 1, 2024. Hospital electronic medical records were reviewed to identify all patients with three or more psychiatric out-of-hours visits during the study period. The threshold of three or more visits was deliberately chosen to capture a clinically meaningful pattern of true recurrent psychiatric service use, rather than episodic or situational presentations. A total of 1.355 patients were referred for psychiatric evaluation during these two years. Among them, 33 girls and 20 boys had three or more psychiatric presentations. Three patients (two boys and one girl) were excluded due to incomplete records, resulting in a final sample of 50 adolescents. Given the retrospective design of the study, no a priori power analysis was performed. The sample size was determined by the total number of adolescents who met the predefined inclusion criteria within the specified study period.

Data Collection

Data were obtained retrospectively from the hospital's electronic medical record system. Sociodemographic variables included age, sex, school attendance status, parental ages, and parental marital/cohabitation status. Clinical information was extracted from psychiatry consultation notes and comprised the primary psychiatric diagnosis, duration of psychiatric symptoms, psychotropic medication use, dates and total number of emergency department visits, history of self-harm behavior, number and method of suicide attempts, and referral for inpatient psychiatric hospitalization. Functional status was determined using The Children's Global Assessment Scale (CGAS) scores recorded during psychiatric evaluations. CGAS was used to evaluate overall psychological and social functioning. The CGAS provides a clinician-rated score ranging from 1 to 100. Scores of ≤80 indicate the need for psychiatric follow-up, whereas scores of ≤60 suggest a requirement for both psychiatric follow-up and treatment [8].

Ethical Approval

The study protocol was approved by the Marmara University Faculty of Medicine Ethics Committee for Non-Interventional Clinical Research (Non-Drug and Medical Device Studies) (No: 09.2025.25.0026 Date: 18 April 2025).

Statistical Analysis

Descriptive statistics—including frequencies, percentages, means, and standard deviations—were used to summarize the data. The Kolmogorov-Smirnov test was applied to evaluate the normality of distribution. Categorical variables were

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analyzed using chi-square tests. For comparisons of parametric continuous variables, independent samples t-tests were performed.

Univariate regression analyses were conducted to examine associations between selected clinical and sociodemographic variables and CGAS scores. Given the retrospective design and limited sample size, no multivariable adjustment for potential confounders was applied, and regression findings were interpreted as associations rather than independent effects.

All analyses were performed using SPSS version 20.0, and the significance level was set at $p \leq 0.05$. Values above this threshold were considered statistically non-significant.

Results

During the study period, 15.64% (n=212) of the 1.355 emergency psychiatric evaluations were identified as recurrent admissions. These 212 admissions corresponded to 50 distinct adolescents who had three or more psychiatric visits. Among these individuals, 32 were female (14.60 ± 1.77 years) and 18 were male (15.06 ± 1.86 years).

Regarding sociodemographic and clinical characteristics, 62.5% of girls (n=20) and 27.8% of boys (n=5) were enrolled in formal education, with non-attendance being significantly more common among boys (p=.018). A family history of psychiatric consultation was present in 44% of the sample (n=22). The onset of psychiatric symptoms began 19.50 ± 16.45 months prior in girls and 25.56 ± 25.11 months prior in boys. The duration of psychiatric follow-up was comparable between the groups (girls: 13.52 ± 14.51 months; boys: 13.23 ± 25.10 months) (Table 1).

Boys demonstrated higher emergency admission counts compared with girls, and this difference was statistically significant (Mann-Whitney U=348, p=.003). Girls showed a narrow and relatively homogeneous distribution of admissions (Mean=3.63 ± 1.07; Median=3; Range=3-7), whereas boys exhibited a markedly wider and more variable pattern (Mean=5.33 ± 4.73; Median=4; Range=3-19), reflecting the presence of several high-frequency repeat users within the male group.

When psychiatric diagnoses were compared between girls and boys, no statistically significant differences were identified. Among girls, depressive disorder (56.3%), ADHD (31.3%), and anxiety disorders (31.3%) were the most frequent diagnoses, while boys most commonly presented with ADHD (50.0%), depressive disorder (38.9%), and conduct disorder (27.8%). Although certain conditions appeared more prevalent in one sex than the other, none of these variations reached statistical significance (all p>.05). Overall, the distribution of psychiatric diagnoses was similar across sexes, and no meaningful sex-related diagnostic differences were observed (Table 2). As shown in Table 3, most suicide attempt characteristics and methods did not differ significantly by gender; however, multiple suicide attempts were significantly more frequent among girls.

Medication use patterns were largely comparable between female and male adolescents, with no significant sex differences observed for most psychotropic agents (all p>.05). The only significant difference concerned short-acting intramuscular medications, which were administered more frequently to males than females (55.6% vs. 21.9%, p=.016). No sex-based differences were observed for intermediate-acting or long-acting injectable formulations (Table 4).

There were no significant sex differences in referral or hospitalization outcomes. The proportion of patients referred for inpatient admission was similar between girls (31.3%) and boys (27.8%) (χ^2=0.00, p=1.000). Completion of the referral process also did not differ significantly (15.6% vs. 11.1%; χ^2=0.00, p=0.986). Treatment refusal was rare and comparable in both groups (3.1% vs. 5.6%; χ^2=0.00, p=1.000). Outpatient follow-up due to the unavailability of inpatient beds showed no sex difference (6.3% vs. 11.1%; χ^2=0.00, p=0.948). Cancellation of referral or resolution of the need occurred only among girls (6.3% vs. 0%), but this finding was not statistically significant (χ^2=0.11, p=0.741).

In the regression analysis, a history of suicide attempt was significantly associated with lower CGAS scores. Adolescents with a prior suicide attempt exhibited poorer functional levels, corresponding to an estimated 11-point lower CGAS score compared to those without such a history (B=−11.22, SE=3.96, β=−0.38, t=−2.83, p=.007) (Table 5).

Table 1. Demographic and clinical characteristics by gender

Variable	Girls (n=32)	Boys (n=18)	p
Age (years)	14.60 ± 1.77	15.06 ± 1.86	0.397*
Enrolled in formal education	20 (62.5%)	5 (27.8%)	0.018**
Months since symptom onset	19.50 ± 16.45	25.56 ± 25.11	0.363*
Duration of psychiatric follow-up (months)	13.52 ± 14.51	13.23 ± 25.10	0.964**
CGAS	37.53 ± 13.46	40.72 ± 16.84	0.466*

Continuous variables were analyzed using independent samples t-tests (*). Categorical variables were analyzed using chi-square tests (**). Values are presented as mean ± SD or n (%)

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Table 2. Distribution of psychiatric diagnoses by gender in the study sample (n=50)

Diagnosis	Girls (n=32)	Boys (n=18)	p-value
Depressive disorder	18 (56.3%)	7 (38.9%)	0.377
ADHD	10 (31.3%)	9 (50.0%)	0.314
Anxiety disorder	10 (31.3%)	2 (11.1%)	0.209
Conversion disorder	7 (21.9%)	1 (5.6%)	0.267
Intellectual disability	3 (9.4%)	3 (16.7%)	0.758
Conduct disorder	3 (9.4%)	5 (27.8%)	0.193
Bipolar disorder	2 (6.3%)	4 (22.2%)	0.224
Psychotic disorder	2 (6.3%)	1 (5.6%)	1.000
Obsessive-compulsive disorder	2 (6.3%)	2 (11.1%)	0.948
Oppositional defiant disorder (ODD)	2 (6.3%)	1 (5.6%)	1.000
Dissociative disorder	1 (3.1%)	1 (5.6%)	1.000
Substance use disorder	1 (3.1%)	2 (11.1%)	0.602
Tic disorder	1 (3.1%)	1 (5.6%)	1.000
Post-traumatic stress disorder	1 (3.1%)	0 (0%)	1.000
Autism spectrum disorder	0 (0%)	1 (5.6%)	0.768
Gender dysphoria	0 (0%)	1 (5.6%)	0.768

Data are presented as n (%). p-values were calculated using Pearson Chi-square or Fisher's exact test where appropriate. ADHD=Attention-Deficit/Hyperactivity Disorder

Table 3. Gender differences in suicide attempts and methods

Variable	Girls (n=32)	Boys (n=18)	χ^2	p
≥1 suicide attempt	17 (53.1%)	3 (16.7%)	4.95	0.026*
Drug intoxication	12 (37.5%)	2 (11.1%)	2.78	0.096
Cutting	2 (6.3%)	0 (0%)	0.11	0.741
Hanging	1 (3.1%)	0 (0%)	0.00	1.000
Jumping from height	2 (6.3%)	0 (0%)	0.11	0.741
Running into traffic	0 (0%)	1 (5.6%)	0.09	0.768

Values are n (%). χ^2=chi-square test. $p<0.05$ indicates statistical significance. Percentages are calculated within each gender group

Table 4. Gender differences in medication use

Medication / Variable	Female (n=32)	Male (n=18)	p (Chi-square)
SSRI	20 (62.5%)	11 (61.1%)	0.923
Atypical antipsychotic	26 (81.2%)	17 (94.4%)	0.197
Typical antipsychotic	1 (3.1%)	0 (0.0%)	0.449
Methylphenidate	2 (6.2%)	4 (22.2%)	0.095
Atomoxetine	1 (3.1%)	0 (0.0%)	0.449
Mood stabilizer	4 (12.5%)	3 (16.7%)	0.684
Benzodiazepine	3 (9.4%)	4 (22.2%)	0.209
Short-acting injection	7 (21.9%)	10 (55.6%)	0.016*
Intermediate-acting injection	8 (25.0%)	5 (27.8%)	0.830
Long-acting injection	5 (15.6%)	3 (16.7%)	0.923

Values are n (%). χ^2=chi-square test. $p<0.05$ indicates statistical significance. Percentages are calculated within each gender group

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Table 5. Linear regression of independent variable on outcome

Independent variable	B	Std. error	Beta	t	p
Suicide attempt (0=No, 1=Yes)	-11.217	3.963	-0.378	-2.830	0.007*

B=unstandardized coefficient; Beta=standardized coefficient. $p<0.05$ indicates statistical significance

Discussion

In this study, we examined the clinical characteristics and contributing factors associated with recurrent psychiatric presentations among adolescents. Recurrent visits constitute a clinically important subgroup, yet the literature offers limited data on their sociodemographic features, diagnostic profiles, treatment patterns, and risk behaviors. By evaluating variables such as psychiatric diagnoses, educational and family characteristics, medication use, and histories of self-harm and suicide attempts, our study provides a broader understanding of factors linked to repeated emergency service utilization in this population.

In our study, depressive disorders and ADHD emerged as the most frequent psychiatric diagnoses among adolescents with recurrent out-of-hours presentations. Although diagnostic distributions did not differ significantly between sexes, clinically meaningful patterns were observed: girls more frequently presented with internalizing disorders such as depression and anxiety, whereas boys showed higher rates of ADHD and conduct disorder. These trends align with established gender differences in adolescent psychopathology and suggest that both internalizing and externalizing symptom clusters contribute to repeated emergency visits [9]. The presence of less common but clinically important conditions, such as psychotic disorders and substance use disorders, further highlights the heterogeneity and complexity of this population [9].

Treatment patterns demonstrated additional divergence between sexes. While SSRI and atypical antipsychotic use was common across groups, boys were significantly more likely to receive short-acting intramuscular medication during emergency evaluations, suggesting higher levels of acute behavioral dysregulation requiring rapid intervention. This finding is consistent with the higher frequency of externalizing disorders among boys. Overall psychotropic use in our sample was common, particularly regarding antipsychotic medications, and is consistent with reports in the existing literature, although the present study was not designed to examine prescribing trends over time [10,11]. Together, these findings indicate that adolescents with repeated presentations constitute a population with substantial and multifaceted treatment needs, involving both chronic pharmacotherapy and acute crisis management.

Suicidal behaviors were highly prevalent among the adolescents presenting recurrently to emergency services. Girls showed a significantly higher rate of suicide attempts than boys, consistent with global epidemiological data indicating that adolescent females exhibit higher rates of suicidal ideation and non-lethal attempts [12,13]. This pattern underscores the necessity of gender-sensitive approaches to suicide risk identification and intervention. The predominance of drug intoxication as a method among girls highlights the need for vigilant assessment of access to medications and environmental risk factors. Our regression analysis showed that suicide attempts were significantly associated with greater functional impairment, underscoring the importance of comprehensive risk assessment in adolescents with recurrent presentations. Adolescence represents a particularly vulnerable developmental stage in which early suicidal ideation can rapidly escalate into suicidal behavior if timely intervention is not provided [14,15]. The developmental pressures and social transitions characteristic of this period further heighten the risk, reinforcing the need for proactive identification and intervention among adolescents presenting with recurrent crises.

Lastly, girls constituted the majority of recurrent presenters, consistent with studies from Türkiye and Finland , though contrary to findings from Germany where boys present more frequently [16-18]. This divergence suggests that sociocultural and healthcare system factors may partly contribute to the observed differences and should be interpreted as contextual influences rather than directly measured determinants [16-18]. Furthermore, the significantly lower rate of school attendance in boys highlights educational disengagement as a clinically relevant issue, which may be associated with psychiatric morbidity and impaired functioning and warrants further investigation rather than causal interpretation [19].The clinical course of symptoms also revealed sex-related differences. Psychiatric symptoms began earlier in girls than in boys, and girls demonstrated slightly lower CGAS scores, indicating reduced functional capacity [20]. Given that most psychiatric disorders emerge during childhood and adolescence, early identification and longitudinal monitoring are critical [21].

In our study, including adolescents with three or more recurrent psychiatric presentations allowed for the examination of a more homogeneous and clinically relevant subgroup. The continuous 24/7 psychiatric emergency service and the broad catchment area of our institution further strengthened the study by ensuring consistent clinical evaluation and a diverse patient population.

However, several limitations should be acknowledged. The absence of a control group limits the interpretation of the findings, as it precludes direct comparisons between adolescents with recurrent out-of-regular-hours psychiatric presentations and those presenting only once or receiving routine outpatient care. Therefore, the observed associations should be interpreted descriptively rather than as comparative or causal inferences.

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The retrospective design may introduce information bias, and the single-center nature of the study restricts the generalizability of the findings. In addition, the relatively small sample size (n=50) may have limited statistical power and reduced the precision of subgroup analyses, and the findings should therefore be interpreted with caution. The inclusion criterion of three or more presentations represents a study-specific, operationally defined threshold and may have influenced sample composition and external validity. Furthermore, CGAS scores were extracted from clinical records obtained during out-of-regular-hours psychiatric evaluations. As the CGAS is intended to reflect overall functioning over a period of time rather than functioning during an acute crisis, scores recorded at the time of presentation may predominantly capture crisis-related impairment rather than baseline functional status.

Conclusion

Future multi-center, prospective studies incorporating longitudinal and outpatient-based functional assessments are needed to validate and expand upon our results. Overall, the findings highlight the need for comprehensive management strategies for adolescents with recurrent psychiatric emergencies. Addressing educational engagement, family dynamics, parental psychopathology, socioeconomic factors, gender-specific patterns, and broader social determinants is essential in planning effective interventions aimed at reducing repeated visits. Enhancing school support, family involvement, and access to mental health services may improve functioning and reduce crisis presentations. Prospective, multidisciplinary research integrating these factors will provide valuable guidance for clinicians working with this high-risk population.

Ethical Approval
Approved by the Marmara University Faculty of Medicine Ethics Committee for Non-Interventional Clinical Research (Non-Drug and Medical Device Studies) (No: 09.2025.25.0026 Date: 18 April 2025).

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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