



ORIGINAL ARTICLE

Medicine Science 2026;15(4):1522-33

Predictors of treatment response in a child and adolescent psychiatry inpatient unit: A retrospective chart review

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Received 20 May 2026; Accepted 03 August 2026

Available online 19 October 2026 with doi: 10.5455/medscience.2026.05.106

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Abstract

Predictors of treatment response in child and adolescent psychiatry inpatient units remain incompletely understood. This study examined predictors of treatment response, concordance between clinician-rated and patient-reported response criteria, and response patterns across diagnostic groups in a tertiary adolescent psychiatry inpatient unit. This retrospective single-center chart review included 127 adolescent inpatients with documented group information. The primary analysis group comprised 52 patients with matched admission and discharge Clinical Global Impression-Severity (CGI-S) data. Diagnoses were established according to Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria. Treatment response was defined as a ≥ 2 -point reduction in CGI-S. Overall, 59.6% of patients were classified as responders. CGI-S, Beck Depression Inventory, and Suicide Probability Scale scores improved significantly with large effect sizes. In the multivariable model, higher admission CGI-S (OR = 7.21; 95% CI: 2.20-23.63; $P = .001$) and male sex (OR = 0.16; 95% CI: 0.03-0.81; $P = .03$) were associated with treatment response; sensitivity analyses indicated that the association with baseline severity largely reflected baseline-change coupling, so both findings should be regarded as exploratory. Concordance between clinician-rated and patient-reported response definitions was at chance level (Cohen's kappa = -0.015; 95% CI: -0.36 to 0.34). Diagnostic group differences were at the threshold of statistical significance (Kruskal-Wallis $H = 11.08$; $P = .050$), with the lowest response rate in the personality disorder group (25%). Adolescent psychiatric inpatient treatment was associated with clinically meaningful improvement in most patients. Associations of baseline severity and sex with response were exploratory and need confirmation in prospective studies. The limited concordance between clinician and patient perspectives supports multi-informant response assessment. The low response rate in the small personality disorder subgroup was a preliminary observation that requires confirmation.

Keywords: Child; adolescent; inpatients; treatment outcome; psychiatric status rating scales; hospitals, psychiatric

Introduction

Child and adolescent mental health problems constitute a major public health burden worldwide, and severe cases may require inpatient treatment. Child and adolescent psychiatry inpatient units serve as a critical level of care for patients who are at risk of harming themselves or others, who cannot be managed through outpatient treatment, or who require diagnostic clarification [1,2]. The effectiveness of these services is closely related to the safety of clinical settings and the integration of structured multidisciplinary interventions.

Studies on the effectiveness of adolescent psychiatric inpatient treatment have shown that a substantial proportion of patients

demonstrate clinical improvement during hospitalization [3,4]. However, the factors predicting which patients benefit most from treatment remain incompletely understood. Such knowledge is important both for guiding clinicians in patient selection and treatment planning and for optimizing the allocation of limited inpatient care resources [2]. The literature suggests that baseline clinical severity, comorbid diagnoses, familial risk factors, length of stay, and psychosocial variables may influence inpatient outcomes [1,5].

Baseline clinical severity has been reported in several studies as one of the important predictors of inpatient outcome. Patients presenting with a more severe clinical picture may show greater

CITATION

Imrek Y, Sari M. Predictors of treatment response in a child and adolescent psychiatry inpatient unit: A retrospective chart review. Med Science. 2026;15(4):1522-33.



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functional improvement during hospitalization [3,5]; however, this pattern should be interpreted in light of methodological issues such as regression to the mean and baseline-change coupling. A recent naturalistic inpatient study in children and adolescents with schizophrenia spectrum disorders examined a range of clinical and developmental variables, including Positive and Negative Syndrome Scale subscales, comorbidities, and developmental factors, as potential predictors of treatment response; in the multivariable model, comorbid obsessive-compulsive disorder (OCD) and education level emerged as independent predictors [6].

Sex distribution is a notable feature of adolescent psychiatric inpatient populations. Female adolescents are more frequently admitted to inpatient units for internalizing disorders, including depression, anxiety, and suicidal behavior, whereas male adolescents more commonly present with psychosis spectrum disorders, conduct disorder, and impulse-control-related clinical pictures [7,8]. Whether treatment response differs by sex remains a matter of debate, and this question has been suggested to be insufficiently addressed because of underpowered samples.

How treatment response should be defined is an important methodological question. The Clinical Global Impression-Severity scale (CGI-S) is a widely used clinician-rated scale for assessing clinical severity; it is practical, easy to administer, and repeatable during hospitalization, which makes it suitable for inpatient studies [9]. In contrast, patient-reported scales in depression and other disorders rooted in internal experience, such as the Beck Depression Inventory (BDI) and the Screen for Child Anxiety Related Emotional Disorders (SCARED), are important tools that complement clinician assessment, particularly in the evaluation of internalizing symptoms. Whereas adult literature has reported moderate-to-high concordance between clinician-rated and patient-reported scales ($r = 0.57-0.68$) [10], concordance has been reported to be lower at baseline in adolescents and to increase with treatment [11]. The clinical meaning of discordance between these two perspectives during acute adolescent inpatient care remains insufficiently investigated.

It has also long been recognized that treatment response may vary across diagnostic groups. Although it is clinically suggested that short-term acute hospitalization may have limited effects in adolescents with personality pathology, adolescent inpatient studies directly examining this association are scarce. Nevertheless, findings on dialectical behavior therapy (DBT) adapted for adolescents (DBT-A) and inpatient DBT applications in adult samples with borderline personality disorder indicate the potential importance of structured psychotherapeutic approaches in this patient group [12,13]. Therefore, identifying personality pathology in the acute inpatient setting may be clinically important for planning specific and longer-term psychotherapeutic interventions after short-term stabilization.

In Türkiye, the number of child and adolescent psychiatry inpatient units is limited, and data derived from these units remain relatively scarce. This limited evidence base underscores the need to examine variables affecting inpatient outcomes in Turkish clinical populations systematically. The aims of the present study

were to: (1) describe changes between admission and discharge using clinical and psychometric scales among adolescents treated in the child and adolescent psychiatry inpatient unit of a tertiary hospital; (2) identify sociodemographic and clinical factors predicting treatment response; (3) evaluate concordance between clinician-rated and patient-reported response criteria; and (4) examine response patterns across diagnostic groups. Addressing these questions may support clinical decision-making and generate hypotheses for future intervention studies.

Material and Methods

Study Design and Setting

This was a single-center retrospective study conducted by reviewing the medical records of patients treated in the inpatient unit of the Department of Child and Adolescent Psychiatry, Faculty of Medicine, Bolu Abant İzzet Baysal University, Türkiye. A total of 127 patients with documented group information admitted to the unit during the relevant period were included. Ethical approval was obtained from the Bolu Abant İzzet Baysal University Non-Interventional Clinical Research Ethics Committee (Decision No: 2026/164, Date: 21.04.2026). Retrospective ethics approval covered the entire chart review period. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Inpatient Unit and Treatment

The unit is a semi-open, ten-bed inpatient ward dedicated to adolescents. Admissions come from the emergency department, the outpatient clinic, and referrals from other institutions, and most patients are admitted through outpatient referral. As a tertiary center, the unit accepts referrals from across the country. The decision to admit is based on clinical judgment rather than fixed severity thresholds. Common reasons for admission are suicidal risk or attempt, agitation and aggression, acute psychotic presentations, the need for diagnostic clarification, and inadequate response to outpatient treatment.

Care during admission is delivered by a multidisciplinary team through daily clinical rounds, regular team meetings, and routine laboratory investigations. Psychometric scales and additional tests are administered according to the clinical presentation and the needs of the individual patient. CGI-S ratings are part of routine clinical evaluation, but because CGI-S is not a mandatory structured field in the medical record, it was not documented consistently for every patient; this accounts for the missing outcome data in part of the cohort. Treatment is individualized rather than protocolized and includes daily individual psychotherapeutic contact, family interviews, psychoeducation, social work involvement, and occupational therapy, together with individualized pharmacotherapy. Length of stay is determined by clinical course. Discharge is decided by the treatment team on the basis of clinical improvement, team consensus, and family circumstances, and routine outpatient follow-up is arranged afterwards.

Analytic Subgroups

The sample consisted of all 127 adolescents with documented group information. The primary analysis group, used for admission-

discharge scale comparisons and the multivariable predictor models, comprised the 52 patients with matched admission and discharge CGI-S data. A further subgroup of 24 patients had both admission and discharge BDI scores and was used for the clinician-patient concordance analysis.

Missing Outcome Data and Comparison of Included and Excluded Patients

Of the 127 eligible patients, matched admission and discharge CGI-S scores were available for 52 patients, who formed the primary analysis group. The remaining 75 patients were excluded because CGI-S was not recorded at admission, at discharge, or at either point (neither point: $n = 68$; admission only: $n = 6$; discharge only: $n = 1$). Because the data were collected retrospectively from routine records, the reason for each missing rating could not be established with certainty. To assess the possibility of selection bias, included and excluded patients were compared on the available demographic and clinical variables using the Mann-Whitney U test, the chi-square test, and the Fisher exact test. Admission CGI-S was documented for only six excluded patients, so baseline severity could not be compared between the two groups.

Diagnostic Assessment and Data Collection

Admission and discharge diagnoses were established according to Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria by the treating child and adolescent psychiatrist on the basis of clinical interview and longitudinal observation during hospitalization. The following data were recorded from patient files: sociodemographic characteristics (age, sex, institutional care status, education level), clinical characteristics (admission and discharge diagnoses, symptom duration, comorbid medical illness, family history of mental illness, trauma history), indications for admission, medication-related information (use of antipsychotics, antidepressants, mood stabilizers, and benzodiazepines; chlorpromazine- and fluoxetine-equivalent doses), and psychometric scale scores. Chlorpromazine- and fluoxetine-equivalent doses were calculated using automated formulas based on standardized conversion tables. The psychometric instruments administered were selected according to diagnosis-oriented clinical judgment and were repeated at admission and discharge. The post-traumatic stress disorder (PTSD) symptom measure recorded in the dataset and reported in the Results corresponds to the clinician-administered Child PTSD Symptom Scale (CPSS).

CGI-S scoring was performed in real time at admission and discharge by the treating psychiatrist; for each patient, admission and discharge CGI-S ratings were performed by the same clinician, which limits possible interrater variance but cannot exclude within-rater drift across the admission period. Antipsychotic use was nearly universal in the primary analysis group (98.1%; 51/52); this reflects local prescribing practice for acute adolescent inpatient admission, in which a low-dose atypical antipsychotic is commonly prescribed as a short-term adjunct for agitation, insomnia, or affective dysregulation in addition to its use as a primary maintenance agent, and should be considered when comparing pharmacotherapy variables across studies.

Treatment Response Definition

The primary treatment response criterion was defined as a reduction of ≥ 2 points in the CGI-S score from admission to discharge. The robustness of this response definition was tested through sensitivity analyses using alternative thresholds (≥ 1 -point reduction and $\geq 30\%$ reduction from baseline) and a different assessment source ($\geq 50\%$ reduction in BDI score).

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows, version 24.0 (IBM Corp., Armonk, NY, USA). The normality of continuous variables was assessed using the Shapiro-Wilk test, which showed that distributions were non-normal ($P < .001$). Continuous variables were presented as mean $\pm$ standard deviation, and categorical variables as numbers and percentages. Admission-discharge comparisons were performed using the Wilcoxon signed-rank test, and effect size was calculated using the formula $r = |Z|/\sqrt{N}$ [14]. Mann-Whitney U tests and Fisher exact tests were used for between-group comparisons. To limit the increase in type I error due to multiple comparisons, false discovery rate (FDR) correction using the Benjamini-Hochberg method was applied [15]. Logistic regression analysis (a primary two-variable model and a four-variable exploratory model) was performed to evaluate multivariable predictors of treatment response. In models falling below the events-per-variable (EPV) rule, Firth penalized logistic regression was applied as a sensitivity analysis to evaluate the risk of overfitting [16]. Standardized coefficients were reported in an exploratory multiple linear regression analysis in which the CGI-S change score was the dependent variable. Concordance between clinician-rated (CGI-S) and patient-reported (BDI) response definitions was evaluated using Cohen's kappa coefficient; a 95% confidence interval (CI) for kappa was estimated using bootstrap resampling with 5,000 iterations. Comparisons between diagnostic groups were performed using the Kruskal-Wallis test. Statistical significance was set at $P < .05$. Because admission CGI-S contributed both to the definition of treatment response and to the predictor set, the association between baseline severity and change-based response may partly reflect mathematical coupling and regression to the mean [17]. Two further sensitivity analyses were therefore performed: a logistic regression in which response was redefined by an endpoint criterion (discharge CGI-S ≤ 3 , i.e., mildly ill or better) instead of change from baseline, and a linear regression of discharge CGI-S on admission CGI-S and sex, an approach recommended for baseline-adjusted analysis [18]. Change-based response definitions have recognized statistical limitations, which further supports the use of these complementary analyses [19].

Results

The findings are presented hierarchically: admission-discharge scale comparisons and univariable analyses that remained significant after correction for multiple comparisons constitute the primary inferences. Multivariable regression analyses were interpreted as exploratory and hypothesis-generating because of limitations related to the small sample size and the low number of EPV.

Sociodemographic and Clinical Characteristics of the Sample

A total of 127 patients with available group information were included in the study. The mean age of the overall sample was 15.96 ± 1.34 years; 73.2% (n = 93) were female and 26.8% (n = 34) were male. The rate of patients under institutional care was 20.3% (n = 25/123). Comorbid medical illness was identified in 15.6% of patients (n = 19/122). A family history of mental illness was reported in 63.4% (n = 59/93). The mean length of stay was 15.59 ± 12.98 days, and the mean number of medications used was 4.02 ± 1.82.

When admission diagnoses were examined, the most frequent diagnosis was major depressive disorder (MDD) (50.4%; n = 64). This was followed by adjustment disorder (8.7%; n = 11), bipolar disorder (8.7%; n = 11), psychosis (7.9%; n = 10), personality disorder (7.1%; n = 9), and anxiety disorder (4.7%; n = 6). Less frequent diagnoses included PTSD (3.9%; n = 5), OCD (2.4%; n = 3), conduct disorder (2.4%; n = 3), conversion disorder (1.6%; n = 2), and autism spectrum disorder (ASD) (0.8%; n = 1). Admission diagnosis data were missing for two patients. Primary admission indication data were documented for 74 patients; in this subgroup, the most common indication was self-harm/suicide attempt or suicidal ideation (n = 51), followed by treatment adjustment (n = 12), risk of homicide (n = 5), and other indications (differential diagnosis, treatment nonadherence, and increased impulsivity; total n = 6).

Comparison of Included and Excluded Patients

Patients included in (n = 52) and excluded from (n = 75) the primary analysis were similar in age, sex, institutional care status, comorbid medical illness, trauma history, length of stay, and rates of antipsychotic and antidepressant use (Figure 1; Table 1). The

groups differed in diagnostic composition (Fisher exact test, P < .001): adjustment disorder and personality disorder were more frequent, and MDD and bipolar disorder less frequent, among included patients. Excluded patients received a greater number of psychotropic medications (median 4.0 vs 3.0; P < .001) and more often had a family history of psychiatric disorder (74.0% vs 51.2%; P = .039). Because admission CGI-S was documented for only six excluded patients, baseline severity could not be compared. The analytic sample was therefore not fully representative of all admissions in diagnostic terms, and the results should be read with this in mind.

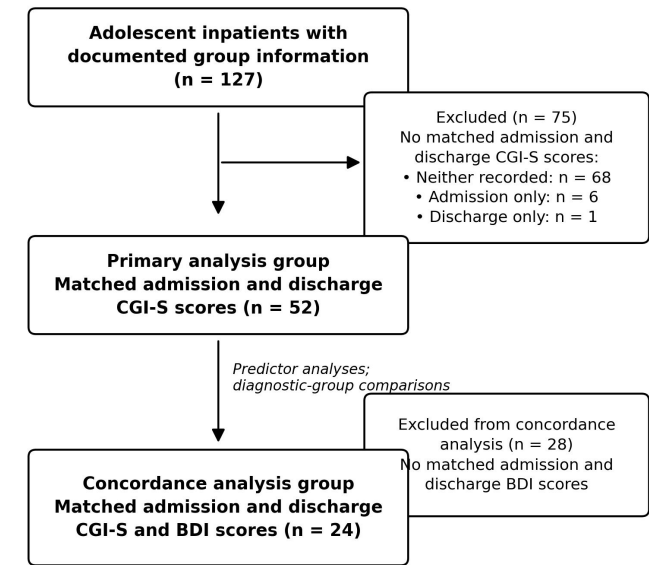


Figure 1. Flow of patients through the study. CGI-S: Clinical Global Impression–Severity; BDI: Beck Depression Inventory.

Table 1. Comparison of patients included in and excluded from the primary analysis.

Characteristic		Included (n = 52)	Excluded (n = 75)	Test statistic	P
Age, years, mean ± SD (median)		15.92 ± 1.26 (16.0)	15.99 ± 1.39 (16.0)	U = 1806.0	.584
Male sex, n/N (%)		15/52 (28.8)	19/75 (25.3)	χ² = 0.06	.814
Primary admission diagnosis, n (%)	Major depressive disorder	21 (42.0)	43 (57.3)	Fisher	< .001
	Adjustment disorder	9 (18.0)	2 (2.7)		
	Bipolar disorder	2 (4.0)	9 (12.0)		
	Psychotic disorder	4 (8.0)	6 (8.0)		
	Personality disorder	8 (16.0)	1 (1.3)		
	Other	6 (12.0)	14 (18.7)		
Institutional care, n/N (%)		6/52 (11.5)	19/71 (26.8)	χ² = 3.41	.065
Medical comorbidity, n/N (%)		7/51 (13.7)	12/71 (16.9)	χ² = 0.05	.823
Trauma history, n/N (%)		17/44 (38.6)	13/37 (35.1)	χ² = 0.01	.925
Family history of psychiatric disorder, n/N (%)		22/43 (51.2)	37/50 (74.0)	χ² = 4.26	.039
Length of stay, days, mean ± SD (median)		15.60 ± 8.67 (15.0)	15.59 ± 15.18 (9.5)	U = 1842.0	.126
Number of psychotropic medications, mean ± SD (median)		3.12 ± 1.22 (3.0)	4.65 ± 1.91 (4.0)	U = 1011.0	< .001
Antipsychotic use, n/N (%)		51/52 (98.1)	75/75 (100.0)	Fisher	.409
Antidepressant use, n/N (%)		36/52 (69.2)	59/75 (78.7)	χ² = 0.99	.319

Percentages for diagnosis are calculated among patients with a documented primary admission diagnosis. The P value for diagnostic composition was obtained by Fisher exact test (R×C). Denominators vary because of missing chart data. Admission CGI-S was documented for only six excluded patients, so baseline severity could not be compared. Abbreviations: U, Mann-Whitney U test; χ², chi-square test.

The primary analysis group consisted of 52 patients with matched CGI-S data at admission and discharge. Sociodemographic and clinical characteristics of this subgroup are presented in Table 2. Within this subgroup, denominators for variables with missing data are reported directly in Table 2 (e.g., trauma history available for 44 patients, family history of mental illness available for 43 patients); these subgroup denominators differ from the full-sample denominators reported above because data availability varied across the descriptive and primary-analysis samples.

Table 2. Sociodemographic and clinical characteristics of the primary analysis group (n = 52)

Variable	n (%) or mean ± SD	
Age, years (n = 51)	15.9 ± 1.3	
Sex, female	37 (71.2)	
Sex, male	15 (28.8)	
Under institutional care	6 (11.5)	
Admission diagnosis	MDD (depression)	21 (40.4)
	Adjustment disorder	9 (17.3)
	Personality disorder	8 (15.4)
	Psychosis	4 (7.7)
	Anxiety disorder	3 (5.8)
	Bipolar disorder	2 (3.8)
	OCD	2 (3.8)
	ASD	1 (1.9)
	Diagnosis missing	2 (3.8)
Trauma history (present) (n = 44)	17 (38.6)	
Family history of mental illness (present) (n = 43)	22 (51.2)	
Comorbid medical illness (n = 51)	7 (13.7)	
Symptom duration, months (n = 48)	19.0 ± 15.5	
Number of medications used	3.1 ± 1.2	
Antipsychotic use	51 (98.1)	
Antidepressant use	36 (69.2)	
Mood stabilizer use	24 (46.2)	
Benzodiazepine use	8 (15.4)	
Chlorpromazine-equivalent dose, mg	321.1 ± 320.3	
Fluoxetine-equivalent dose, mg	26.0 ± 24.0	
Length of stay, days (n = 45)	15.6 ± 8.7	

Denominators are 52 unless otherwise indicated in brackets. Values for variables with missing data are expressed as n/N (%) in the text; this table reports the count among non-missing observations. Abbreviations: ASD, autism spectrum disorder; MDD, major depressive disorder; OCD, obsessive-compulsive disorder; SD, standard deviation.

Changes in Admission and Discharge Scale Scores

Significant improvement from admission to discharge was observed in most scales; however, reductions in CPSS (P = .051) and Beck Hopelessness Scale (BHS) scores (P = .070) did not reach statistical significance (Table 3). The largest effects were observed for CGI-S, BDI, and Suicide Probability Scale (SPS) scores (r values: 0.87, 0.87, and 0.89, respectively; all large effects). The mean CGI-S score decreased from 4.81 ± 1.05 at admission to 2.88 ± 0.83 at discharge; no patient deteriorated, and 96.2% (n = 50/52) achieved at least a one-point reduction. BDI scores also showed significant improvement with a large

effect size (from 31.60 ± 15.03 to 11.07 ± 10.06; r = 0.87; P < .001). This finding is clinically important, given that half of the sample consisted of patients diagnosed with depression. Large effect sizes were also observed for SCARED (r = 0.61) and Dissociative Experiences Scale (DES) (r = 0.69) scores. Although the reduction in CPSS scores had a large effect size (r = 0.67), it remained at the threshold of statistical significance; the change in BHS scores had a medium effect size but did not reach statistical significance (r = 0.39; P = .070). These findings should be evaluated in light of the small subgroup sizes; in particular, the large SPS effect size rests on n = 11 and should be interpreted accordingly.

Table 3. Comparison of admission and discharge scale scores

Scale	n	Admission (mean ± SD)	Discharge (mean ± SD)	P	r	Effect
CGI-S	52	4.81 ± 1.05	2.88 ± 0.83	< .001*	0.87	Large
BDI	30	31.60 ± 15.03	11.07 ± 10.06	< .001*	0.87	Large
SPS	11	23.82 ± 8.44	12.45 ± 10.28	.002*	0.89	Large
SCARED	23	40.17 ± 20.05	28.65 ± 21.37	.004*	0.61	Large
DES	10	41.33 ± 22.20	25.70 ± 17.01	.02*	0.69	Large
CPSS	10	19.90 ± 10.66	10.10 ± 13.67	.051	0.67	Large
BHS	22	9.82 ± 6.05	7.23 ± 4.70	.070	0.39	Medium

Wilcoxon signed-rank test. Effect size $r = |Z|/\sqrt{N}$ (0.1 small; 0.3 medium; 0.5 large, according to Cohen [14]). * $P < .05$. The SPS estimate rests on a small subgroup ($n = 11$) and should be interpreted accordingly. Abbreviations: BDI, Beck Depression Inventory; BHS, Beck Hopelessness Scale; CGI-S, Clinical Global Impression-Severity; CPSS, Child PTSD Symptom Scale; DES, Dissociative Experiences Scale; SCARED, Screen for Child Anxiety Related Emotional Disorders; SD, standard deviation; SPS, Suicide Probability Scale.

Comparison of Treatment Responders and Nonresponders

Thirty-one patients (59.6%) who showed a reduction of two or more points in CGI-S scores were classified as treatment responders, whereas 21 patients (40.4%) were classified as nonresponders. The comparison of the two groups is presented in Table 4. FDR correction was applied to control for type I error inflation due to multiple comparisons.

Patients in the responder group had significantly higher

admission CGI-S scores (5.3 ± 0.9 vs. 4.1 ± 0.8 ; $P < .001$; FDR-adjusted $P = .002$). Responders also had a significantly longer length of stay (18.6 ± 8.5 days vs. 11.5 ± 7.3 days; $P = .003$; FDR-adjusted $P = .03$). These two variables were the only variables that remained significant after FDR correction. Trauma history was more frequently reported in the responder group (53.8% vs. 16.7%; odds ratio (OR) = 5.83; unadjusted $P = .03$), but this did not reach significance after FDR correction (FDR-adjusted $P = .15$) and should therefore be interpreted descriptively.

Table 4. Comparison of treatment responders and nonresponders

Variable	Responders (n = 31)	Nonresponders (n = 21)	P	FDR-adjusted P
Age (mean ± SD)	15.9 ± 1.1	16.0 ± 1.5	.46	.86
Male sex, n (%)	6 (19.4)	9 (42.9)	.12	.42
Under institutional care, n (%)	3 (9.7)	3 (14.3)	.68	.96
Trauma history, n (%)	14/26 (53.8)	3/18 (16.7)	.03*	.15
Family history of mental illness, n (%)	12/24 (50.0)	10/19 (52.6)	1.00	1.00
Admission CGI-S (mean ± SD)	5.3 ± 0.9	4.1 ± 0.8	< .001*	.002*
Admission BDI (mean ± SD)	27.0 ± 15.9	28.1 ± 14.2	.79	.96
Admission BHS (mean ± SD)	9.4 ± 6.1	9.6 ± 6.7	.96	1.00
Admission SPS (mean ± SD)	20.3 ± 10.5	19.7 ± 12.8	.91	1.00
Admission SCARED (mean ± SD)	38.8 ± 18.2	42.4 ± 20.3	.51	.87
Number of medications (mean ± SD)	3.2 ± 1.2	3.0 ± 1.2	.36	.77
Chlorpromazine eq., mg	307.4 ± 333.7	341.4 ± 306.4	.35	.77
AD use, n (%)	22 (71.0)	14 (66.7)	.77	.96
MS use, n (%)	17 (54.8)	7 (33.3)	.16	.46
BZD use, n (%)	7 (22.6)	1 (4.8)	.12	.42
Length of stay (mean ± SD)	18.6 ± 8.5	11.5 ± 7.3	.003*	.03*
Symptom duration, months	19.4 ± 15.7	18.5 ± 15.7	.69	.96

Mann-Whitney U test and Fisher exact test. FDR-adjusted P values were calculated using the Benjamini-Hochberg method. * $P < .05$. Abbreviations: AD: antidepressant; BDI, Beck Depression Inventory; BHS, Beck Hopelessness Scale; BZD, benzodiazepine; CGI-S, Clinical Global Impression-Severity; eq., equivalent; FDR, false discovery rate; MS, mood stabilizer; SCARED, Screen for Child Anxiety Related Emotional Disorders; SD, standard deviation; SPS, Suicide Probability Scale.

Of note, admission BDI, BHS, SPS, and SCARED scores did not differ significantly between the two groups (all unadjusted $P > .50$). Although half of the sample consisted of patients with depression, the finding that admission depression severity did not predict treatment response is clinically important. The number of medications used, chlorpromazine-equivalent dose, and rates of

antidepressant use were also similar between groups. Although male sex differed numerically between responders and non-responders (19.4% vs. 42.9%), this difference did not reach significance in the univariable analysis (unadjusted $P = .12$). The independent effect of sex emerged only after adjustment for admission CGI-S in the multivariable model (see below), reflecting confounding between sex and baseline severity in this sample.

Multivariable Predictors of Treatment Response

A two-level approach was adopted to evaluate treatment response at the multivariable level. The primary model included two variables that were clinically known at admission, contained no missing data, and met the EPV rule within the limited sample size: admission CGI-S and sex ($n = 52$, EPV = 10.5). Although sex did not reach significance in the univariable comparison, it was selected for the primary model on the basis of its prior clinical relevance and the absence of missing data; this pre-specified strategy permits unmasking of an effect that is partially confounded by baseline severity, as observed below. The exploratory model including a broader covariate set is presented as Supplementary Table S1.

In the primary two-variable model, admission CGI-S score was identified as a strong predictor of treatment response (OR = 7.21; 95% CI: 2.20-23.63; $P = .001$); each one-point increase was associated with an approximately seven-fold increase in the likelihood of responding to treatment. Male sex was associated

with a marked reduction in the likelihood of response (OR = 0.16; 95% CI: 0.03-0.81; $P = .03$). The model correctly classified 73.1% of the sample (Nagelkerke $R^2 = 0.524$). The results of this primary model were directionally consistent with both the univariable analyses and the expanded exploratory model shown in Supplementary Table S1.

Sensitivity Analyses for Predictors

When response was redefined by the endpoint criterion (discharge CGI-S ≤ 3 ; 42/52 patients, 80.8%), higher admission CGI-S was no longer positively associated with response, and the direction of the association reversed without reaching significance (OR = 0.50; 95% CI: 0.22-1.11; $P = .089$). In the linear model, higher admission CGI-S predicted higher discharge CGI-S ($B = 0.355$; 95% CI: 0.159-0.551; $P = .001$), which shows that patients with greater baseline severity had larger absolute reductions yet remained more severely ill at discharge. Male sex was linked to less favorable outcomes in the same direction across all three models, although the associations were attenuated and did not reach conventional significance in the sensitivity analyses (endpoint model OR = 0.26; 95% CI: 0.06-1.21; $P = .086$; linear model $B = 0.447$; 95% CI: -0.002 to 0.896; $P = .051$). Taken together, the association between baseline severity and change-based response largely reflects baseline-change coupling and should be treated as exploratory, whereas the sex effect was directionally consistent but hypothesis-generating (Table 5).

Table 5. Sensitivity analyses for predictors of treatment outcome (n = 52)

Predictor	Primary model: response = ≥ 2 -point CGI-S reduction	Sensitivity model 1: response = discharge CGI-S ≤ 3	Sensitivity model 2: linear model of discharge CGI-S
Admission CGI-S	OR = 7.21 (2.20-23.63), $P = .001$	OR = 0.50 (0.22-1.11), $P = .089$	$B = +0.355$ (0.159 to 0.551), $P = .001$
Male sex	OR = 0.16 (0.03-0.81), $P = .027$	OR = 0.26 (0.06-1.21), $P = .086$	$B = +0.447$ (-0.002 to 0.896), $P = .051$

The primary model and sensitivity model 1 are logistic regression models; sensitivity model 2 is a linear regression of discharge CGI-S, in which a positive B indicates greater severity at discharge. Values in parentheses are 95% confidence intervals. Abbreviations: B, unstandardized regression coefficient; CGI-S, Clinical Global Impression-Severity; CI, confidence interval; OR, odds ratio.

A parallel exploratory multiple linear regression model using the CGI-S change score as the dependent variable (admission – discharge; positive values indicate improvement) showed the same variable pattern, and the results are presented in Supplementary Table S2: admission CGI-S made the largest standardized contribution ($\beta = +0.682$), male sex was associated with less improvement, and trauma history and mood stabilizer use were not independently significant. As with the primary model, this change-score analysis is subject to baseline-change coupling and is reported for the direction of effects only; the corresponding endpoint-based and baseline-adjusted sensitivity analyses are given in Table 5.

Response Rates by Baseline CGI-S Stratum

To complement the multivariable analysis and to address the potential structural coupling between baseline CGI-S and the response definition, response rates were stratified by admission CGI-S score (Table 6). Response rates increased monotonically from 0% among patients with admission CGI-S = 3 to 100% among

those with admission CGI-S ≥ 6 . This stratification illustrates the strength of the gradient observed in the regression model and is interpreted with the methodological caveats discussed below.

Table 6. Response rate by admission CGI-S stratum (n = 52)

Admission CGI-S	n	Responders, n (%)
3	6	0 (0.0)
4	13	6 (46.2)
5	21	13 (61.9)
6	9	9 (100.0)
7	3	3 (100.0)

Treatment response defined as a ≥ 2 -point reduction in CGI-S from admission to discharge. The stratified distribution illustrates the gradient of response rates across baseline severity strata; together with the regression-to-the-mean and mathematical coupling considerations discussed in the text, this gradient is consistent with — though not proof of — a genuine clinical effect of baseline severity on response probability. Abbreviations: CGI-S, Clinical Global Impression-Severity.

Sensitivity Analysis of the Response Definition

Two separate sensitivity analyses were conducted to evaluate the robustness of the primary response definition (≥ 2 -point reduction in CGI-S).

First, sensitivity to the arbitrary choice of response threshold was evaluated. The response rate was 96.2% (50/52) using the criterion of a ≥ 1 -point reduction in CGI-S and 67.3% (35/52) using the criterion of a $\geq 30\%$ reduction from baseline CGI-S score. The response rate obtained using the primary definition of a ≥ 2 -point reduction (59.6%) was lower than the rates obtained using either alternative criterion. Although threshold selection affected the response rate, the pattern of clinical improvement was preserved across all definitions, and admission CGI-S and sex remained directionally consistent as independent predictors.

Second, sensitivity to the source of response assessment (clinician vs. patient report) was examined. In the subgroup with paired admission and discharge BDI data ($n = 24$), an alternative response definition based on a $\geq 50\%$ reduction in BDI score was used. The response rate was 79.2% (19/24) according to the CGI-S criterion and 58.3% (14/24) according to the BDI criterion. The cross-classification of the two response definitions is shown in Table 7. Concordance between the two response definitions was at chance level (Cohen’s kappa = -0.015; 95% CI: -0.36 to 0.34), indicating that the bootstrap CI includes a wide range of small positive and negative agreement values; the point estimate near zero indicates no agreement beyond chance, though the small subgroup limits the precision of this estimate. This finding suggests that the clinician-rated CGI-S and the patient-reported BDI reflect treatment response differently. In the analysis based on the BDI criterion, no predictor showed independent significance; however, the small subgroup size ($n = 20$; EPV = 2.0) limited the statistical power of this analysis. This limitation is addressed in the discussion.

Table 7. Cross-classification of clinician-rated (CGI-S) and patient-reported (BDI) response in the BDI subgroup ($n = 24$)

Clinician-rated (CGI-S) response	BDI nonresponder	BDI responder
CGI-S nonresponder ($n = 5$)	2	3
CGI-S responder ($n = 19$)	8	11

Clinician-rated response: ≥ 2 -point reduction in CGI-S. Patient-reported response: $\geq 50\%$ reduction in BDI. Cohen’s kappa = -0.015 (95% CI: -0.36 to 0.34, bootstrap with 5,000 iterations). Abbreviations: BDI, Beck Depression Inventory; CGI-S, Clinical Global Impression-Severity.

Correlation Analyses

Spearman rank correlations between CGI-S change and admission scale scores are presented in Supplementary Table S3. A strong positive correlation was found between admission CGI-S score and CGI-S change ($\rho = 0.659$; $P < .001$); patients with greater admission severity showed greater reductions in CGI-S. In contrast, none of the depression, anxiety, hopelessness, or suicidal ideation scales was significantly correlated with CGI-S change (all $|p| < 0.15$; $P > .39$). This finding suggests that, in this sample, patient-reported admission scales were not significantly

associated with CGI-S change and that clinician assessment and patient report may capture different dimensions of treatment response.

The moderate correlation between admission and discharge CGI-S scores (Spearman $\rho = 0.446$; $P < .001$) suggests that regression to the mean may have partially contributed to the observed improvement. In addition, operationalizing treatment response as a “ ≥ 2 -point reduction in CGI-S” and using admission CGI-S score as a predictor in the same model may create a structural link (coupling) between baseline level and change; this may mathematically increase the probability of meeting the response definition among patients with high baseline scores. Although the monotonic response gradient by admission CGI-S stratum (Table 6) suggests the possibility of a genuine clinical effect, regression to the mean and mathematical coupling effects cannot be fully excluded. This interpretation is supported by our sensitivity analyses: when response was redefined by an endpoint criterion (discharge CGI-S ≤ 3), the association with admission severity reversed direction and lost significance, and in the baseline-adjusted linear model higher admission CGI-S predicted higher discharge severity. The predictive value of baseline severity should therefore be regarded as exploratory rather than established [17,18].

When correlations among admission psychopathology scales were examined, all tested scale pairs (BDI, BHS, SPS, SCARED) showed significant positive correlations with one another (Spearman $\rho = 0.410$ -0.664; all $P < .02$). The strongest correlation was observed between BDI and SPS ($\rho = 0.664$; $P < .001$), followed by BHS-SPS ($\rho = 0.557$; $P = .004$), SPS-SCARED ($\rho = 0.487$; $P = .009$), BDI-SCARED ($\rho = 0.459$; $P = .002$), BDI-BHS ($\rho = 0.430$; $P = .01$), and BHS-SCARED ($\rho = 0.410$; $P = .02$). This pattern indicates that depression, anxiety, hopelessness, and suicidal ideation emerged as interrelated psychopathology dimensions in the sample.

Treatment Response by Diagnostic Groups

CGI-S change scores were compared across six diagnostic groups with sufficient sample sizes (Table 8). The difference between groups was at the threshold of statistical significance (Kruskal-Wallis $H = 11.08$; $df = 5$; $P = .050$). Although this result indicates a clinically noteworthy pattern, the small subgroup sizes ($n = 2$ -21) limit both the statistical power of the analysis and the reliability of pairwise comparisons between groups; therefore, the finding should be interpreted cautiously.

Clinically, the personality disorder group showed the lowest mean improvement (1.12 ± 0.64 points, below the response threshold) and the lowest response rate (2 of 8 patients; 25.0%), lower than the rates in the other diagnostic groups (33.3%-100%), though the small subgroup size limits this comparison. The anxiety disorder group also stood out with a low response rate (33.3%), although the sample size restricts this interpretation ($n = 3$). In contrast, response rates were 100%, 75%, 71.4%, and 66.7% in the bipolar disorder ($n = 2$), psychosis ($n = 4$), MDD ($n = 21$), and adjustment disorder ($n = 9$) groups, respectively. Mean

CGI-S reductions in the bipolar disorder, psychosis, MDD, and adjustment disorder groups were 3.50 ± 0.71 , 2.25 ± 1.26 , 2.10 ± 0.83 , and 2.22 ± 1.09 points, respectively. This distribution indicates that the personality disorder group differed from the other diagnostic groups in both response rate and mean CGI-S reduction; however, because of small subgroup sizes, this result should be considered hypothesis-generating.

This pattern generates the hypothesis that adolescents with personality pathology may have a limited response to acute inpatient treatment and suggests that the potential role of longer-term and structured psychotherapeutic approaches beyond standard acute inpatient interventions, such as DBT-A

and mentalization-based treatment, should be examined in future studies. In addition, according to discharge diagnoses, the number of personality disorder cases increased to 12 (from 8 at admission). Examination of the prior admission diagnoses of the four reclassified cases indicates that they had initially been diagnosed predominantly within the MDD and adjustment disorder groups; this suggests that clinical observation during hospitalization may allow diagnostic re-evaluation and that personality pathology may have been masked by acute affective psychopathology in some patients. This interpretation is a hypothesis suggested by the clinical pattern rather than a direct finding tested by the present data.

Table 8. Treatment response rates and CGI-S changes by diagnostic group

Diagnosis	n	Response rate, % (n/N)	CGI-S reduction (mean $\pm$ SD)
Bipolar disorder	2	100.0 (2/2)	3.50 $\pm$ 0.71
Psychosis	4	75.0 (3/4)	2.25 $\pm$ 1.26
MDD (depression)	21	71.4 (15/21)	2.10 $\pm$ 0.83
Adjustment disorder	9	66.7 (6/9)	2.22 $\pm$ 1.09
Anxiety disorder	3	33.3 (1/3)	1.67 $\pm$ 1.15
Personality disorder	8	25.0 (2/8)	1.12 $\pm$ 0.64

Treatment response: ≥ 2 -point reduction in CGI-S. Kruskal-Wallis $H = 11.08$; $df = 5$; $P = .050$. Abbreviations: CGI-S, Clinical Global Impression-Severity; MDD, major depressive disorder; SD, standard deviation.

Discussion

In this study, a retrospective review of 127 adolescents treated in a tertiary child and adolescent psychiatry inpatient unit was used to evaluate the pattern of clinical improvement during hospitalization, predictors of treatment response, and response differences across diagnostic groups. In the primary analysis group with matched CGI-S data ($n = 52$), 59.6% of adolescents were classified as treatment responders, and no patient deteriorated. Admission CGI-S score emerged as one of the strongest variables associated with treatment response, and sex also entered the model as an independent predictor. The low concordance between clinician-rated and patient-reported response definitions and the markedly low response rate in the personality disorder subgroup were clinically noteworthy findings.

Admission-Discharge Scale Changes

In our study, significant improvements with large effect sizes were found in CGI-S, BDI, and SPS scores. The observation that 96.2% of patients showed at least a one-point decrease in CGI-S supports the view that acute hospitalization provides substantial clinical improvement. This pattern is consistent with findings reported by Hanssen-Bauer et al., Kennedy et al., and Demigoren et al. [2,4,5]. Systematic reviews have shown that structured multidisciplinary interventions in inpatient units, including pharmacotherapy, individual and group psychotherapy, family meetings, education, and social support components, provide rapid stabilization in acute psychiatric presentations [1].

In contrast, reductions in BHS and CPSS scores did not reach statistical significance in our study ($P = .070$ and $P = .051$, respectively). Adult literature also suggests that hopelessness cognitions may respond more slowly to acute inpatient interventions; cognitive restructuring processes are thought to require more time and specific psychotherapeutic intervention. PTSD symptoms require structured trauma-focused treatment, and acute inpatient settings may not always provide optimal conditions for such interventions. These findings suggest that adolescent inpatient treatment is not equally effective across all symptom domains and that more targeted interventions are needed for cognitive and trauma-based symptoms.

Predictors of Treatment Response

One of the main findings of our study was that admission CGI-S score emerged as an independent variable associated with treatment response ($OR = 7.21$; 95% CI: 2.20-23.63; $P = .001$). The 0% response rate among patients with admission CGI-S = 3 and the 100% response rate among those with CGI-S ≥ 6 (Table 6) suggest a clear relationship between clinical severity and probability of response. This finding is consistent with reports by Green et al. and Demigoren et al.; both studies reported that patients with greater functional impairment or symptom severity at baseline showed greater improvement during hospitalization [3,5].

However, methodological caution is required when interpreting this relationship. Operationalizing treatment response as a “ ≥ 2 -point reduction in CGI-S” and including the baseline value of the same scale as a predictor creates a structural link

(mathematical coupling) between baseline level and change; this may mechanically increase the probability of meeting the response definition among patients with high baseline scores. In addition, the moderate correlation between admission and discharge CGI-S scores ($p = 0.446$) suggests a partial contribution of regression to the mean. Although the monotonic gradient of response rates across admission CGI-S strata (Table 6) suggests the possibility of a genuine clinical effect, regression to the mean and mathematical coupling effects cannot be fully excluded.

Sex was identified as the second independent predictor of treatment response in our study; male adolescents had a significantly lower likelihood of response than female adolescents (OR = 0.16; 95% CI: 0.03-0.81). Notably, sex did not differ significantly between responders and non-responders in the univariable comparison ($P = .12$), and the independent effect emerged only after adjustment for admission CGI-S. This pattern reflects confounding between sex and baseline severity in the sample and illustrates how a clinically meaningful effect can be obscured in univariable analyses when an important confounder is not accounted for. This finding is hypothesis-generating and may have several possible explanations. First, male patients in adolescent inpatient units are frequently reported to present with more externalizing profiles, such as conduct disorder and impulsivity [7,8], and these clinical pictures are thought to improve more slowly with acute inpatient interventions. Second, the greater prevalence of internalizing presentations among female adolescents, particularly depression and anxiety, and the possibility that these presentations may improve more rapidly with pharmacotherapy may partially explain the sex difference [8]. Third, the relatively small number of male patients in our study ($n = 15$) is reflected in the wide CI and limits the interpretation of the effect size in isolation. This finding requires confirmation in larger samples with balanced sex distributions.

Discordance Between Clinician and Patient Perspectives

The most original and clinically debatable finding of our study was that concordance between clinician-rated (≥ 2 -point decrease in CGI-S) and patient-reported ($\geq 50\%$ decrease in BDI) response definitions was at chance level (Cohen's kappa = -0.015; 95% CI: -0.36 to 0.34). This means that the two criteria overlapped no more than chance among the same patients; the cross-classification (Table 7) shows that a substantial proportion of patients classified as responders by the CGI-S criterion were not responders by the BDI criterion, and the reverse was also observed. The wide CI for kappa indicates that the precision of this estimate is limited by the small subgroup size ($n = 24$) and that values ranging from modest disagreement to modest agreement are statistically compatible with the data; the point estimate near zero, however, is clearly inconsistent with the moderate-to-high concordance values reported in adult literature.

This finding clearly contrasts with the generally moderate-to-high concordance reported in adult literature (clinician-patient scale correlations $r = 0.57$ - 0.68) [10]. Keller et al. [11] reported that clinician-patient concordance was moderate at baseline ($r = 0.40$) and increased to a strong level after four weeks of treatment

($r = 0.72$) in an adolescent inpatient treatment sample. When the lack of concordance observed in our study is considered alongside this literature, several possible explanations emerge. First, the ways in which adolescents express symptoms during hospitalization do not always align with clinician observation; possible confounders include developmental limitations in verbalizing internal experiences, somatization of depressive symptoms, and the tendency of adolescents to report their condition as "better than it is" or "worse than it is" in clinical settings. Second, while CGI-S is a multidimensional impression scale, BDI evaluates a narrower domain, namely depressive symptom burden; this difference in content may have contributed to the discordance. Third, the phenomenon of "response shift," in which symptomatic improvement and subjective well-being may occur at different times during acute hospitalization, has been described in the literature [11].

This discordance raises a fundamental methodological question regarding how treatment response should be defined. The recommendation to use multi-informant data in the measurement-based care literature also reflects awareness of this issue [20]. Our finding suggests that in clinical research, inferences based on a single response criterion may be misleading and that considering clinician assessment and patient self-report together may provide a more accurate representation of treatment response.

Response Pattern by Diagnostic Groups

A difference at the threshold of statistical significance was found across diagnostic groups in CGI-S change scores (Kruskal-Wallis $H = 11.08$; $P = .050$). Clinically, patients diagnosed with personality disorder had a response rate of 25%, markedly lower than the other diagnostic groups (33.3%-100%). Their mean CGI-S reduction (1.12 ± 0.64) remained below the response threshold (≥ 2 points). The anxiety disorder group also stood out with a low response rate (33.3%), but the small sample size ($n = 3$) limits interpretation of this finding.

Although it is clinically suggested that short-term acute hospitalization may be limited in adolescents with personality pathology, adolescent inpatient studies directly examining this association are scarce. Existing sources provide mostly indirect evidence regarding the effectiveness of structured psychotherapeutic interventions. Fleischhaker et al. [12] reported that a 16-24 week adapted DBT-A protocol significantly reduced suicide attempts and self-injurious behaviors in adolescents and that treatment gains were maintained at one-year follow-up. Kujovic et al. [13] showed that both 8- and 12-week adapted DBT protocols produced significant reductions in borderline symptoms in the context of routine psychiatric inpatient treatment in an adult borderline personality disorder sample. Therefore, the low response rate observed in the personality disorder group in our study should be interpreted as a hypothesis-generating finding suggesting that acute hospitalization may serve only as a short-term stabilization step for these patients and that the integration of specific psychotherapeutic interventions should be tested in future studies; the present data and the literature do not directly prove this association.

A notable finding in terms of diagnostic re-evaluation was that the number of personality disorder cases at discharge was higher than at admission (12 vs. 8). The four reclassified cases had initially been diagnosed predominantly within the MDD and adjustment disorder groups; this increase suggests that extended clinical observation during hospitalization allowed diagnostic clarification and that personality pathology may have been masked by acute affective psychopathology in some patients. However, this interpretation is not a directly tested result of the present study but rather a hypothesis derived from clinical observations during hospitalization.

The Role of Trauma History

In our study, trauma history was associated with treatment response in univariable analysis ($OR = 5.83$; $P = .03$), but this significance disappeared after FDR correction (FDR-adjusted $P = .15$). Trauma history was also not independently significant in multivariable models. The effect of trauma history on depression treatment response is debated in the literature; while some studies suggest that childhood trauma may alter the pattern of treatment response [21], the comprehensive meta-analysis published by Kuzminskaite et al. [22] showed that individuals with MDD and a history of childhood trauma respond to antidepressant medication and psychotherapy similarly to those without a trauma history. Sarnola et al. [23] reported that childhood trauma experiences limited the reduction in depressive symptoms over six months in an outpatient adolescent sample and that this association was partially explained by resilience. Because a substantial portion of this literature is derived from adult or outpatient adolescent samples, the findings cannot be directly generalized to acute inpatient adolescent treatment. Our findings are indirectly consistent with literature showing that trauma history does not unidirectionally determine treatment response across different clinical samples; the independent effect of trauma history on acute inpatient treatment response could not be demonstrated in this small sample.

Limitations

The findings of this study should be interpreted in light of several limitations. First, the study had a single-center retrospective design, and the primary analysis group was limited to 52 patients with matched scale data. This sample size may have led to violations of the EPV rule in multivariable models; therefore, the models were presented within a hypothesis-generating framework, and Firth penalized regression was applied as a sensitivity analysis. Second, the primary assessment of treatment response was based on use of the CGI-S by a single evaluator relying on clinical impression rather than on a structured assessment instrument; this prevented testing interrater reliability. The same psychiatrist rated each patient at both admission and discharge, which limits between-rater variance but does not eliminate within-rater drift in the clinician's reference frame during the admission period. Third, the use of the same CGI-S scale at admission and discharge may have created a structural link between baseline level and change; regression to the mean and coupling effects cannot be fully excluded. Fourth, the subgroup analysis evaluating

clinician-patient discordance was based on a limited sample ($n = 24$) and had low statistical power, as reflected in the wide bootstrap CI for kappa. Fifth, subgroup sizes in comparisons by diagnostic group were small ($n = 2-21$), and therefore differences between groups should be interpreted cautiously. Sixth, because the type and intensity of psychotherapeutic interventions were not systematically documented, their role in treatment response could not be analyzed. Seventh, female adolescents were markedly overrepresented in the study sample (73.2%), which limits the generalizability of the finding related to male sex. Eighth, antipsychotic use was nearly universal in the primary analysis group (98.1%), reflecting local prescribing practice in the unit; the homogeneity of pharmacotherapy in this respect both stabilizes treatment effects across the sample and limits the ability of the present analysis to disentangle the role of antipsychotic exposure from other pharmacological and psychosocial components of acute care. Finally, the absence of post-discharge follow-up data precluded evaluation of the durability of treatment gains and the course after discharge. Furthermore, outcome data were missing for a large proportion of admissions (75 of 127), and included and excluded patients differed in diagnostic composition, number of psychotropic medications, and family psychiatric history; selection bias therefore cannot be excluded, and the analytic sample was not diagnostically representative of all admissions. Finally, the absence of a control group means that the observed improvement cannot be attributed to inpatient treatment alone, since natural symptom fluctuation, regression to the mean, and nonspecific aspects of hospitalization may also have contributed.

Clinical and Research Implications

The findings of this study point to several clinical and research implications for child and adolescent psychiatric inpatient treatment. Clinically, the strong association between admission CGI-S and treatment response suggests that systematic assessment of overall clinical severity may be useful in admission decisions and treatment planning. The low response rate observed in adolescents with personality disorder suggests the potential benefit of supporting acute hospitalization with structured psychotherapeutic interventions in this group and the need to test this approach in future studies. The discordance between clinician-rated and patient-reported criteria highlights the importance of considering a multi-informant approach to response assessment in routine clinical evaluation, including clinician criteria, patient self-report, and family observation. From a research perspective, our findings are hypothesis-generating and require confirmation in larger, multicenter, prospective studies. In particular, differences between clinician and patient perspectives during acute adolescent hospitalization, long-term post-discharge follow-up data, and the effectiveness of structured psychotherapeutic interventions for adolescents with personality disorder stand out as priority research areas.

Conclusion

This study, conducted in a tertiary child and adolescent psychiatry inpatient unit, showed that approximately 60% of patients achieved clinically meaningful improvement during

acute hospitalization. Admission CGI-S and sex were associated with treatment response in multivariable analysis; sensitivity analyses indicated that the baseline-severity association largely reflected baseline-change coupling, so these associations are exploratory. The original contributions of our study include the chance-level concordance between clinician-rated and patient-reported response criteria ($\kappa = -0.015$; 95% CI: -0.36 to 0.34) and the low response rate in the small personality disorder subgroup (2 of 8 patients; 25%), which is a preliminary observation. These findings suggest that response assessment should be handled carefully from a methodological perspective and that the potential role of specific psychotherapeutic interventions in particular diagnostic groups should be tested in future studies.

Ethical Approval

Bolu Abant İzzet Baysal University Non-Interventional Clinical Research Ethics Committee (Decision No: 2026/164, Date: 21.04.2026).

Patient Consent

Written informed consent for the use of clinical data for research purposes was obtained from all patients and their parents or legal guardians.

Conflict of Interest

The authors confirm the absence of any conflicts associated with this work.

Funding

The authors declare that they have received no financial support for the study.

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