

นิพนธ์ต้นฉบับ

ผลของการรักษาทางจิตเวชแบบสหวิชาชีพต่อการวินิจฉัยและการสั่งยาจิตเวชในเด็กและวัยรุ่นออทิซึม

สเปกตรัมที่มีปัญหาพฤติกรรมรุนแรง: การศึกษาเปรียบเทียบย้อนหลังแบบก่อนและหลัง

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²ศูนย์วิจัยและการศึกษาเพื่อการรักษาออทิซึมและความผิดปกติทางพัฒนาการ (TRE-ADD), เซอร์รีย์เพลซ, โทรอนโต, ประเทศแคนาดา

Received February 7, 2026 Revised June 25, 2026 Accepted June 26, 2026

บทคัดย่อ

ความเป็นมา: เด็กและวัยรุ่นที่มีภาวะออทิซึมสเปกตรัมร่วมกับภาวะสติปัญญาบกพร่องและมีปัญหาพฤติกรรมรุนแรง มักมีความซับซ้อนทางจิตเวชและได้รับยาจิตเวชหลายขนาน ขณะที่โรคร่วมทางจิตเวชอาจยังไม่ได้รับการวินิจฉัยอย่างเหมาะสม การรักษาทางจิตเวชแบบสหวิชาชีพอาจช่วยเพิ่มความแม่นยำในการวินิจฉัยและส่งเสริมการใช้ยาอย่างเหมาะสมมากขึ้น

วัตถุประสงค์: เพื่อศึกษาผลของการนำรูปแบบการรักษาทางจิตเวชแบบสหวิชาชีพ (Interdisciplinary Psychiatric Treatment Model: IPTM) มาใช้ต่อการวินิจฉัยโรคร่วมทางจิตเวชและรูปแบบการสั่งยาจิตเวชในเด็กและวัยรุ่นที่มีภาวะออทิซึมสเปกตรัม ร่วมกับภาวะสติปัญญาบกพร่อง และมีปัญหาพฤติกรรมรุนแรง

วิธีการศึกษา: การศึกษานี้เป็นการศึกษาแบบย้อนหลังเปรียบเทียบก่อนและหลังการนำรูปแบบ IPTM มาใช้โดยทบทวนเวชระเบียนผู้ป่วยที่เข้ารับการรักษาใน TRE-ADD program, Surrey Place, Toronto, Canada ระหว่างปี พ.ศ. 2553–2560 ซึ่งเป็นโปรแกรมบำบัดแบบไป-กลับที่เน้นการวิเคราะห์พฤติกรรม กลุ่มตัวอย่างมี 35 ราย แบ่งเป็น pre-IPTM 19 ราย และ post-IPTM 16 ราย เปรียบเทียบข้อมูลพื้นฐาน การวินิจฉัยโรคร่วมทางจิตเวช และการใช้ยาจิตเวช ณ วันแรกรับและเมื่อติดตามครบ 12 เดือน

ผลการศึกษา: กลุ่มตัวอย่างมีอายุ 8–17 ปี อายุเฉลี่ย 11.46 ± 2.67 ปี ข้อมูลพื้นฐานของทั้งสองกลุ่มไม่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ เมื่อติดตามครบ 1 ปี พบว่ากลุ่ม post-IPTM ได้รับการวินิจฉัยโรคจิตกังวลมากกว่ากลุ่ม pre-IPTM อย่างมีนัยสำคัญทางสถิติ (ร้อยละ 25.0 เทียบกับ 0.0; p value 0.035) และพบความแตกต่างเชิงตัวเลขในทิศทางของโรคร่วมทางจิตเวชโดยรวมที่มากขึ้น และการใช้ยาหลายขนานรวมถึง ยารักษาโรคจิตที่ลดลง แม้ไม่ถึงระดับนัยสำคัญทางสถิติ

สรุป: IPTM อาจช่วยเพิ่มการตรวจพบโรคร่วมทางจิตเวชและสนับสนุนการใช้ยาจิตเวชอย่างจำเพาะมากขึ้น
อย่างไรก็ตาม การศึกษานี้เป็นการศึกษาแบบ retrospective single-center ที่มีกลุ่มตัวอย่างขนาดเล็ก จึงควร
ตีความผลด้วยความระมัดระวัง

คำสำคัญ: ภาวะออทิซึมสเปกตรัม, ภาวะสติปัญญาบกพร่อง, การใช้ยาหลายขนาน, ยารักษาโรคจิต, เด็กและ
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Effects of an interdisciplinary psychiatric treatment model on psychiatric diagnosis and psychotropic prescribing in youth with autism spectrum disorder and severe maladaptive behaviors: A retrospective pre-post comparison study

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Abstract

Background: Children and adolescents with autism spectrum disorder (ASD) and co-occurring intellectual disability who present with severe maladaptive behaviors often have complex psychiatric needs. Psychiatric comorbidities may be under-recognized, and psychotropic medications are frequently prescribed, sometimes in multiple combinations. An interdisciplinary psychiatric treatment model (IPTM) may improve diagnostic clarification and support more targeted psychotropic prescribing.

Objective: To examine the effects of implementing an Interdisciplinary Psychiatric Treatment Model (IPTM) on psychiatric diagnoses and psychotropic prescribing patterns among children and adolescents with ASD, intellectual disability, and severe maladaptive behaviors.

Methods: This retrospective pre-post comparison study reviewed medical records of patients treated in the TRE-ADD program, Surrey Place, Toronto, Canada, between 2010 and 2017. TRE-ADD is an intensive outpatient program based on applied behavior analysis. Thirty-five patients were included, comprising 19 in the pre-IPTM group and 16 in the post-IPTM group. Data collected included demographic characteristics, psychiatric diagnoses, and prescribed psychotropic medications. Comparisons between the two groups were conducted at admission and after 12 months of follow-up.

Results: Participants were aged 8–17 years, with a mean age of 11.46 ± 2.67 years. Baseline demographic and clinical characteristics did not differ significantly between groups. At the 12-month follow-up, anxiety disorders were more frequently identified in the post-IPTM group than in the pre-IPTM group (25.0% vs. 0.0%, p value 0.035). Numerical differences were also observed in the direction of higher overall psychiatric

comorbidities and lower psychotropic polypharmacy and second generation antipsychotics (SGA) use, although these findings did not reach statistical significance.

Conclusions: IPTM implementation may improve identification of psychiatric comorbidities and support more diagnosis-informed psychotropic prescribing. However, this was a small retrospective single-center study, and the findings should be interpreted cautiously.

Keywords: Autism Spectrum Disorder; Intellectual Disability; Polypharmacy; Antipsychotic Agents; Child and Adolescent

Introduction

Children and adolescents with autism spectrum disorder (ASD) are frequently prescribed psychotropic medications, often to address maladaptive behaviors.¹⁻⁵ In one large study, 64% of 33,565 children with ASD had been prescribed at least one psychotropic medication.⁶ The most commonly prescribed classes in this population are antipsychotics, followed by stimulants and selective serotonin reuptake inhibitors (SSRIs).⁷⁻⁹

Psychotropic polypharmacy, defined as the concurrent use of two or more psychotropic medications in the same individual, is particularly common in children with ASD who exhibit maladaptive behaviors.^{10,11} This pattern may increase the risk of adverse drug effects and drug-drug interactions. Polypharmacy is of particular concern for individuals with ASD and intellectual disability (ID) as communication difficulties may limit their ability to report internal experiences or adverse effects. Older age, psychiatric comorbidities, aggressive behaviors and caregiver burden have been identified as predictors of polypharmacy.¹²⁻¹⁴ Recent systematic reviews also indicate that psychotropic polypharmacy remains highly prevalent, particularly among adolescents with ASD who exhibit aggression and self-injurious behaviors.¹⁵

Psychotropic medications are not risk-free; in particular, increasing evidence has highlighted the adverse effects of second-generation antipsychotics (SGAs) in children and adolescents, especially metabolic complications.^{16,17} Previous studies have shown that 56% to 84% of youth receiving SGAs experience significant weight gain as well as significant increases in cholesterol and low-density lipoprotein levels.¹⁸ Given that many individuals remain on these medications for prolonged periods, the long-term health consequences may be substantial. Furthermore, children with ASD who lack access to adequate behavioral services are more likely to receive psychotropic medications to manage challenging behaviors.¹⁹ Although one previous study found that access to psychiatric consultation was associated with a higher likelihood of polypharmacy⁶, we hypothesized that prescribing within an interdisciplinary psychiatric treatment model (IPTM) would be more data-driven and clinically targeted.

An IPTM is an approach designed to improve the quality and coordination of psychiatric care for individuals with complex developmental and behavioral needs by integrating psychiatry within an interdisciplinary team. Conceptually, such a model may influence diagnostic and prescribing patterns through several mechanisms: longitudinal observation of the patient across settings by the interdisciplinary team, cross-disciplinary input into the assessment of behavioral function and contributing factors, and shared

clinical decision-making between psychiatrists and behavioral clinicians. These processes may improve recognition of co-occurring psychiatric conditions and reduce reliance on less specific pharmacologic approaches.

The TRE-ADD (Treatment Research and Education for Autism and Developmental Disorders) program at Surrey Place in Toronto, Canada, is an intensive day-treatment program serving children and adolescents with ASD, intellectual disability and severe maladaptive behaviors. TRE-ADD admits patients for 6 to 18 months into day-treatment classrooms located in community schools. Each classroom serves up to four students supported by a staff-to-student ratio of 1: 1 or 2: 1. Patients in TRE-ADD are medically and psychiatrically complex. Nearly all have undergone trials of multiple psychotropic medications for behavioral management; many are followed by multiple medical and developmental professionals. Frequent emergency room visits related to dangerous behaviors are also common.

Prior to 2014, TRE-ADD functioned primarily as an applied behavior analysis (ABA)-based program in which treatment plans were created and implemented by a Board Certified Behavior Analyst (BCBA) and a teacher. Although patients had access to consultation from other disciplines, including psychiatry, psychology and speech-language pathology, these services were delivered within a consultation model rather than through a fully integrated interdisciplinary treatment plan.

In 2014, TRE-ADD was redesigned to establish a true interdisciplinary treatment model. Under the new model, each patient receives an interdisciplinary treatment plan co-developed by a team that includes a behavior analyst, child psychiatrist, nurse, special educator, social worker, psychologist, speech-language pathologist and occupational therapist. Unlike the previous consultation model in which psychiatrists were primarily involved in crisis management, the IPTM allows proactive psychiatric input to be integrated with behavioral and functional data. Team communication occurs both informally daily and formally during weekly interdisciplinary meetings. Given the ABA orientation of the program, treatment decisions continue to emphasize measurement-based practice. A more detailed description of TRE-ADD has been published previously.²⁰

Within an ABA-oriented program, the IPTM framework may facilitate measurement-based assessment and treatment of maladaptive behaviors arising from non-operant sources, including psychiatric conditions, medical problems, communication difficulties, learning challenges, and psychosocial stressors. This shift allows the program to become more family-centered, patient-centered, and evidence-based.

Evidence from Thailand and Asia regarding psychotropic prescribing and interdisciplinary psychiatric care in youth with ASD remains limited. Therefore, findings from specialized service models abroad may help inform the development of team-based care pathways for children with ASD and severe behavioral problems in Thai pediatric and child mental health services.

The present study compared psychiatric treatment patterns between two cohorts of patients enrolled in TRE-ADD: a pre-IPTM cohort treated under the earlier consultation model and a post-IPTM cohort treated after implementation of the redesigned interdisciplinary model. We focused specifically on psychiatric diagnoses and psychotropic prescribing patterns as indicators of the quality and specificity of psychiatric care. We hypothesized that implementation of the IPTM would be associated with improved identification of psychiatric comorbidities and more targeted psychotropic prescribing.

Objective

To examine the effects of implementing an interdisciplinary psychiatric treatment model (IPTM) on psychiatric diagnoses and psychotropic prescribing patterns in children and adolescents with autism spectrum disorder, intellectual disability, and severe maladaptive behaviors.

Methods

Study design and subjects

This retrospective pre-post comparison study was conducted using medical records from the TRE-ADD program at Surrey Place, Toronto, Canada, a specialized intensive treatment program for children and adolescents with ASD, intellectual disability, and severe maladaptive behaviors. The program is based on applied behavior analysis and provides intensive interdisciplinary assessment and treatment. Prior to 2014, care was delivered primarily through a consultation model. In 2014, the program was redesigned to establish an interdisciplinary psychiatric treatment model (IPTM). Under the redesigned model, patients received care from a team that included behavioral, psychiatric, nursing, educational, and allied health professionals working within a shared treatment framework.

This study included patients admitted to the TRE-ADD program before and after implementation of the IPTM in 2014. Patients admitted prior to the redesign were assigned to the pre-IPTM group, whereas those admitted after implementation of the IPTM were assigned to the post-IPTM group. Patients were grouped

according to the period of admission to the program. The pre-IPTM and post-IPTM groups therefore represented two admission cohorts defined by service era, rather than repeated observations of the same patients across both periods.

All patients admitted to TRE-ADD between 2010 and 2017 were screened for eligibility. Inclusion criteria were: (1) age younger than 18 years at admission, and (2) participation in the program for at least one year. Patients were excluded if their charts were incomplete with respect to the required study variables. Because TRE-ADD serves a highly specialized population, the study used a convenience sample consisting of all eligible patients during the study period. A formal sample size calculation was not performed.

Data Collection

Clinical charts and electronic databases were reviewed by the principal investigator, and predefined data elements were extracted using a structured chart review approach. For each subject, demographic and clinical data were collected, including age, sex, level of intellectual disability, and established psychiatric comorbid diagnoses documented in the medical record by the treating clinical team. Psychiatric diagnoses were based on routine clinical assessments conducted within the program and recorded in the chart according to contemporaneous diagnostic practice during the study period. Data were collected at admission to TRE-ADD, and again after one year in the program. Psychiatric comorbidities of interest included attention deficit/hyperactivity disorder (ADHD), mood disorders, anxiety disorders, tic disorders/Tourette syndrome, and oppositional defiant disorder (ODD). Prescription data were categorized by medication class, including second-generation antipsychotics (SGAs; risperidone, olanzapine, aripiprazole, and quetiapine), psychostimulants (methylphenidate, dexamethylphenidate, amphetamine and dextroamphetamine), alpha-2 agonists (clonidine and guanfacine), SSRIs (fluoxetine, escitalopram, citalopram, fluvoxamine, and sertraline).

Psychotropic polypharmacy was defined as the concurrent prescription of two or more psychotropic medications, consistent with definitions used in prior ASD psychopharmacology literature.^{6,11} For all subjects prescribed an SGA, an estimated dose equivalent was calculated.^{21,22} Occasional or as-needed (PRN) medications were not included in this calculation. Standardized severity measures for psychiatric comorbidities, core autism symptoms, and maladaptive behaviors were not consistently available in the chart data and therefore were not included in the analysis.

Statistical Analysis

The analysis included all patients with available data at both admission and the one-year follow-up. Continuous variables are presented as means and standard deviations (SDs), whereas categorical variables are presented as frequencies and percentages. Comparisons between the pre-IPTM and post-IPTM groups were performed using the chi-square test or Fisher's exact test for categorical variables (including demographic characteristics and the proportion of patients receiving psychotropic medications), and the independent t-test for continuous variables. SGA dose equivalents were analyzed using the Mann-Whitney U test because of the non-normal distribution of the data. All analyses were performed using SPSS version 23.0. Statistical significance was set at p value < 0.05 .

Because the study involved multiple exploratory comparisons across psychiatric comorbidities and medication classes, the results should be interpreted with caution. No formal adjustment for multiple comparisons was applied, given the small sample size and exploratory nature of the study.

Ethical considerations

This study was approved by the Surrey Place Centre Research Ethics Board (REB ID#180416VD). As this was a retrospective chart review using existing clinical records, the study was conducted using de-identified data in accordance with institutional requirements. The requirement for informed consent was waived by the ethics board in keeping with the retrospective design and minimal-risk nature of the study.

Results

Between 2010 and 2017, 41 patients admitted to TRE-ADD met the inclusion criteria, including 23 in the pre-IPTM group and 18 in the post-IPTM group. Six patients were excluded because of incomplete data, resulting in a final sample of 35 subjects: 19 in the pre-IPTM group and 16 in the post-IPTM group.

Participant characteristics are presented in Table 1. The pre-IPTM and post-IPTM groups did not differ significantly in age (11.2 ± 2.84 years vs. 11.8 ± 2.52 years, p value 0.560), sex (94.7% vs. 93.8% male, p value 1.000), or level of intellectual disability. Two patients in the pre-IPTM group had no formally documented level of intellectual disability in the available chart data. This likely reflects incomplete documentation in a retrospective chart review rather than a difference in the intended clinical population served by the program.

Table 1. Demographic and clinical characteristics at admission

Demographic data	Pre-IPTM group (n=19)	Post-IPTM group (n=16)	p value
Age (years): Mean (SD)	11.2 (2.8)	11.8 (2.5)	0.560
Age (months) at ASD diagnosis (SD)	45.63 (13.12)	39.44 (12.18)	0.160
Gender: n (%)			1.000
Male	18 (94.7)	15 (93.8)	
Female	1 (5.3)	1 (6.3)	
ID severity: n (%)			0.633
Mild	6 (31.6)	4 (25.0)	
Moderate	7 (36.8)	7 (43.8)	
Severe	4 (21.1)	4 (25.0)	
Profound	0 (0.0)	1 (6.2)	
No ID documented	2 (10.5)	0 (0.0)	
Psychiatric comorbidities: n (%)			
Overall psychiatric comorbidities	5 (26.3)	4 (25.0)	1.000
ADHD	3 (15.8)	2 (12.5)	1.000
Anxiety disorders	1 (5.3)	1 (6.3)	1.000

*p value < 0.05

As shown in Table 2, the frequency and pattern of psychiatric comorbidities at admission were similar between the two groups. At the one-year follow-up, anxiety disorders were significantly more frequent in the post-IPTM group than in the pre-IPTM group (25.0% vs. 0.0%, p value 0.035). The post-IPTM group also had a numerically higher proportion of overall psychiatric comorbidities at follow-up (62.5% vs. 31.6%, p value 0.095) and a numerically higher frequency of identified tic disorders/Tourette syndrome (25.0% vs. 10.5%, p value 0.379), although these differences were not statistically significant.

Table 2. Psychiatric comorbidities at admission and one-year follow-up.

Psychiatric comorbidities	Admission			One-year follow-up		
	Pre-IPTM (n = 19) n (%)	Post-IPTM (n= 16) n (%)	p value	Pre-IPTM (n = 19) n (%)	Post-IPTM (n= 16) n (%)	p value
Overall psychiatric comorbidities	5 (26.3)	4 (25.0)	1.00	6 (31.6)	10 (62.5)	0.095
ADHD	3 (15.8)	2 (12.5)	1.00	4 (21.1)	4 (25.0)	1.00
Tics/Tourette syndrome	0	0	1.00	2 (10.5)	4 (25.0)	0.379
Anxiety disorders	1 (5.3)	1 (6.3)	1.00	0	4 (25.0)	0.035*
Mood disorders	1 (5.3)	0	1.00	0	1 (6.3)	0.457
Oppositional defiant disorder	1 (5.3)	1 (6.3)	1.00	0	0	1.00

*p value < 0.05

Data are presented as n (%). P values compare the pre-IPTM and post-IPTM groups at each time point using Fisher's exact test.

Psychotropic prescribing patterns at admission and at the one-year follow-up are shown in Table 3. Although none of the between-group differences reached statistical significance, several numerical differences were observed. At one year, the post-IPTM group had lower psychotropic polypharmacy (37.5% vs. 47.4%, p value 0.557) and lower use of SGAs (50.0% vs. 68.4%, p value 0.268) than the pre-IPTM group. In contrast, SSRI prescribing was numerically higher in the post-IPTM group (37.5% vs. 10.5%, p value 0.105). These observed differences did not reach statistical significance. SGA dose equivalents were similar between groups at admission (mean 116.70 ± 13.77 vs. 111.64 ± 28.70 , p value 0.633) and at the one-year follow-up (130.98 ± 46.21 vs. 114.44 ± 29.61 , p value 0.645).

Table 3. Psychotropic prescribing patterns at admission and at one-year follow-up

Prescribing pattern	Admission			One-year follow-up		
	Pre-IPTM (n = 19) n (%)	Post-IPTM (n= 16) n (%)	p value	Pre-IPTM (n = 19) n (%)	Post-IPTM (n= 16) n (%)	p value
Polypharmacy	7 (36.8)	4 (25.0)	0.452	9 (47.4)	6 (37.5)	0.557
SGAs	10 (52.6)	8 (50.0)	0.877	13 (68.4)	8 (50.0)	0.268
SSRIs	1 (5.3)	2 (12.5)	0.582	2 (10.5)	6 (37.5)	0.105
Alpha-2 agonists	3 (15.8)	1 (6.3)	0.608	6 (31.6)	1 (6.3)	0.096
Stimulants	6 (31.6)	2 (12.5)	0.244	8 (42.1)	2 (12.5)	0.071

*p value < 0.05

Data are presented as n (%). Polypharmacy was defined as the concurrent use of two or more psychotropic medications. P value compare the pre-IPTM and post-IPTM groups at each time point using Fisher's exact test.

Discussion

This study examined the impact of implementing an interdisciplinary psychiatric treatment model within an intensive behaviorally oriented treatment program for youth with ASD and severe maladaptive behaviors. Under the IPTM, psychiatrists collaborated with the interdisciplinary team in admission decisions, comprehensive assessments, treatment formulation, and medication management. Our findings suggest that transitioning from the previous consultation model to an integrated interdisciplinary model may improve diagnostic clarification and support more targeted psychotropic prescribing.

The patients treated before and after the IPTM implementation did not differ significantly in baseline characteristics. Across both groups, psychotropic medication use was common, and a substantial proportion of patients received more than one psychotropic agent. However, at the one-year follow-up, the post-IPTM group showed numerically lower rates of polypharmacy and SGA use, and numerically higher rates of SSRI prescribing, than the pre-IPTM group. Because these differences were not statistically significant and the sample size was small, they should be interpreted cautiously. At most, these findings may be considered preliminary observations that warrant confirmation in larger studies with more rigorous designs.

Aggressive and other severe maladaptive behaviors in children with ASD are often multifactorial in origin. Contributing factors may include psychiatric disorders, communication difficulties, environmental triggers, medical conditions, and learning-related challenges. Within the IPTM, psychiatric comorbidities were more frequently identified at follow-up, particularly anxiety disorders, which were significantly more common in the post-IPTM group than in the pre-IPTM group at one year. One possible interpretation is that the interdisciplinary model facilitated more comprehensive assessment and improved recognition of co-occurring psychiatric conditions.

However, alternative explanations should also be considered. The higher rate of anxiety disorder diagnoses in the post-IPTM group may not solely reflect improved recognition. It may also have been influenced by changes in diagnostic practice over time, including broader clinical attention to internalizing symptoms in ASD during the DSM-5 era, differences in psychiatrists or diagnostic styles across study periods, or selection bias if patients admitted during the later period had somewhat different symptom profiles. In addition, because no adjustment was made for multiple comparisons, the possibility of a chance finding cannot be excluded. Therefore, the anxiety-related finding should be considered preliminary rather than definitive.

The increased identification of anxiety disorders in the post-IPTM group may nevertheless be clinically relevant. Recent reviews of psychopharmacological treatment in ASD highlight the importance of aligning medication selection with specific psychiatric comorbidities and target symptoms.²³ Anxiety symptoms are common and often under-recognized in autistic youth.²⁴ In our study, the post-IPTM group also showed a higher rate of SSRI prescribing at one-year follow-up, although the between-group difference did not reach statistical significance. Taken together, these findings may be consistent with the possibility that IPTM supported more diagnosis-informed prescribing, with treatment patterns becoming more aligned with identified internalizing symptoms rather than relying primarily on broader or less specific medication strategies. Nonetheless, this interpretation remains tentative and should be confirmed in adequately powered studies.

The finding of a significantly higher rate of anxiety disorders in the post-IPTM group is noteworthy; however, it should be interpreted cautiously. Given the number of exploratory comparisons performed in this study and the absence of adjustment for multiple comparisons, the possibility of a chance finding cannot be excluded. Therefore, this result should be considered preliminary and requires confirmation in larger studies with more robust analytic approaches.

We also observed numerically higher rates of identified tic disorders/Tourette syndrome in the post-IPTM group at one-year follow-up, although the between-group difference was not statistically significant. One possible explanation is that the interdisciplinary model improved the team's ability to distinguish tic symptoms from other stereotypic, disruptive, or maladaptive behaviors. More accurate diagnostic formulation may have supported closer monitoring, behavioral strategies, or more selective medication use, rather than automatic escalation of antipsychotic treatment.

Prior literature has raised concerns that psychotropic medications in individuals with ASD may at times be prescribed in the absence of clearly documented psychiatric indications.^{21,25} In our study, implementation of the IPTM was associated with a higher proportion of identified psychiatric comorbidities at follow-up and a prescribing pattern characterized by numerically lower SGA use and numerically higher SSRI use. Although these observations should be interpreted cautiously, they are consistent with the possibility that a specialized interdisciplinary psychiatric service model may support more targeted and individualized treatment planning.

A possible mechanism underlying these prescribing changes is that psychiatrists working outside an interdisciplinary framework may be more likely to prescribe medications primarily to manage outward behavioral crises, such as agitation or aggression, without the benefit of longitudinal functional, behavioral, and contextual data. In contrast, the IPTM allows psychiatrists to work within a team that observes the patient across settings and over time. This broader perspective may help improve diagnostic precision and promote better integration of psychopharmacologic and non-pharmacologic interventions.²⁶

The relevance of these findings to Thailand deserves consideration. In Thai clinical settings, children and adolescents with ASD and severe behavioral problems are often managed across fragmented systems involving developmental pediatrics, child psychiatry, psychology, schools, and rehabilitation services. A fully resourced IPTM similar to TRE-ADD may be difficult to implement directly because of constraints in workforce capacity, including the limited number of child and adolescent psychiatrists, behavior analysts, and other specialized professionals. However, the core principles of the model may still be adaptable to the Thai context. For example, stepped interdisciplinary case review, school-based or hospital-based collaborative care pathways, and closer integration between behavioral and psychiatric services may be feasible approaches. Thus, while the specific TRE-ADD model may not be directly generalizable, its underlying team-based framework may offer a useful direction for service development in Thailand.

This study has several limitations. First, the sample size was small, which limited statistical power and may have reduced the ability to detect clinically meaningful between-group differences. Second, the retrospective chart-review design limited available data to what had been recorded in routine clinical documentation. Third, this was a single-center study conducted in a highly specialized program, which may limit generalizability to other clinical settings. Fourth, because this was a pre-post service evaluation rather than a randomized study, factors other than the IPTM may have differed between the periods before and after 2014. Over a 3- to 4-year interval on either side of implementation, secular changes in diagnostic practice, prescribing culture, clinician experience, or program policies may also have influenced the findings. In addition, the higher rates of identified psychiatric comorbidities in the post-IPTM group may reflect improved recognition through more comprehensive assessment rather than a true difference in underlying prevalence. Finally, the study did not directly assess behavioral outcomes, caregiver satisfaction, or patient-reported outcomes.

Future research should build on these preliminary findings using larger and methodologically stronger designs. Multi-site prospective studies would help clarify the reproducibility and generalizability of the observed associations. Future studies should also incorporate standardized behavioral outcome measures, economic evaluation of IPTM implementation, and assessment of caregiver burden and family quality of life. In addition, implementation-focused studies examining feasibility, acceptability, and fidelity would be especially valuable in determining how interdisciplinary psychiatric service models could be adapted for different settings, including Thailand. Where feasible, stronger quasi-experimental approaches or pragmatic trial designs, such as interrupted time-series analysis or stepped-wedge implementation studies, may provide more robust evidence regarding the effects of IPTM on diagnosis, prescribing, and patient outcomes.

Conclusion

This was a small retrospective single-center study ($n = 35$), and its findings should therefore be regarded as preliminary. The results suggest that implementation of an interdisciplinary psychiatric treatment model may improve diagnostic clarification and was associated with numerical differences in the direction of more diagnosis-informed psychotropic prescribing. However, most between-group differences did not reach statistical significance, and these findings require confirmation in larger studies with more robust methodology.

In the Thai context, these findings may support the development of interdisciplinary teams and integrated care pathways that combine behavioral and psychiatric services for youth with autism spectrum disorder and severe maladaptive behaviors. Future research should include multi-site prospective studies and incorporate behavioral outcome measures, family-related outcomes, economic evaluation, and implementation outcomes such as acceptability, feasibility, and fidelity.

Acknowledgments

The authors would like to thank Ms. Julaporn Pooliam, Senior Statistician at the Clinical Epidemiology Unit, Office for Research and Development, Faculty of Medicine Siriraj Hospital, for her advice on statistical analysis. The authors also thank Ms. Napassanan Pakpeerawat for research assistance and all TRE-ADD staff for their support in retrieving medical records and facilitating this study.

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