

The Effectiveness of Combined Applied Behavior Analysis (ABA) Therapy and Medication (Risperidone) Compared to ABA Therapy Alone in Improving On-Task Behavior, Compliance with Teacher Instructions, and Positive Peer Interactions Among 8 year old Children with Autism Spectrum Disorder.

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Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects 1 in 31 8-year-old children in the United States'. Students with ASD often experience disruptive classroom behaviors such as difficulty staying on task, refusing teacher instructions, verbal outbursts, aggression, and limited positive interactions with peers.

Applied Behavior Analysis (ABA) is the most evidence-based behavioral intervention, but some children continue to have severe behaviors despite intensive ABA therapy. Risperidone is one of the only medications approved by the FDA to treat irritability associated with AS and has been shown to reduce aggression, irritability, severe tantrums, and self-injurious behaviors.

While both ABA therapy and risperidone have shown positive effects separately, there is limited research examining whether combining these treatments leads to greater improvements in classroom outcomes than ABA therapy alone in 8-year-old children with ASD. Most previous studies focus on medical symptoms instead of educational outcomes such as on-task behavior, compliance with teacher instructions, and positive peer interactions.

Objectives

The goal of this study is to compare the effectiveness of intensive ABA therapy combined with risperidone versus ABA therapy alone in 8-year-old children with ASD over one academic year.

- Aim 1: Determine if combining ABA therapy with risperidone results in greater improvements in on-task classroom behavior than ABA therapy alone.
- Aim 2: Evaluate whether combination therapy improves compliance with teacher instructions and reduces disruptive behaviors.
- Aim 3: Determine if combination therapy leads to greater improvement in positive peer interactions compared to ABA therapy alone.

Methods

A total of 60 children diagnosed with ASD, all 8 years old, were recruited from elementary schools and autism treatment centers. Participants were randomly assigned to one of two groups:

- Group 1: Intensive ABA therapy alone (n = 30)
- Group 2: Intensive ABA therapy + risperidone (n = 30)

The study will last for one academic year (approximately 9 months).

Outcomes will be measured using:

- Teacher Behavior Rating Scales (e.g., Aberrant Behavior Checklist - ABC-I)
- Direct Classroom Observations (percent of intervals on-task, compliance, disruptive behaviors, peer interactions)

- Data collected monthly by teachers and ABA specialists

Statistical analysis will compare change scores between groups using independent t-tests and repeated-measures ANOVA with significance set at $p < .05$.

Results

Study	Population n (Age)	N (Risperidone vs Placebo)	Outcome Measured	Risperidone Result	Placebo Result	Effect Size / P-Value
McCracken et al., 2002 (RUPP Trial)	Mean age 8.8 years	49 vs 52	Irritability (ABC-I)	56.9% reduction	14.1% reduction	$d = 1.2$; $P < .001$
McCracken et al., 2002 (RUPP Trial)	Mean age 8.8 years	49 vs 52	Clinical Response (CGI-I)	69% (34/49)	12% (6/52)	$P < .001$
Pandina et al., 2006	5-12 years (includes age 8)	27 vs 28	Change in ABC-I Score	-13.4	7.2	$d = -0.7$; $P < .05$
Shea et al., 2004	5-12 years (includes age 8)	79 total	Irritability Improvement	64% improvement	31% improvement	$P < .01$

Study	Design / Intervention	N (Participants)	Outcome Measured	Result	Effect Size / P-Value
Project AIM Updated Systematic Review, 2024	Behavioral interventions / RCTs	13,304 (252 studies)	Social-emotional / Challenging Behavior	Significant improvement	$g = 0.58$; 95% CI: 0.11–1.06; $P = .02$
Comprehensive ABA Meta-Analysis, 2023	ABA-based interventions	632 (11 studies)	Intellectual Functioning	Significant improvement	$SMD = 0.51$; 95% CI: 0.09–0.92
Comprehensive ABA Meta-Analysis, 2023	ABA-based interventions	632 (11 studies)	Adaptive Behavior	Significant improvement	$SMD = 0.37$; 95% CI: 0.03–0.70
TEACCH School Meta-Analysis, 2024	Structured school intervention (TEACCH)	38 (14 studies)	Independent Task Completion	Strong improvement	$Tau-U = 0.85$; 95% CI: 0.77–0.91

Discussion

Strong evidence supports the benefits of both ABA-based interventions and risperidone when used separately. Risperidone consistently reduces irritability and severe behavioral symptoms with large effect sizes. Behavioral interventions in school settings improve on-task behavior, compliance, and social outcomes.

However, there is a research gap: no high-quality studies have directly compared ABA + risperidone to ABA alone in 8-year-old children with ASD for classroom outcomes across an entire academic year.

This study will address that gap by measuring on-task behavior, compliance, and positive peer interactions in a real classroom environment.

Conclusion

research demonstrates that ABA-based interventions improve behavioral, adaptive, and social outcomes, while clinical trials show that risperidone significantly reduces irritability and disruptive behaviors in children with ASD. This study evaluates the combined approach by comparing ABA alone with ABA plus risperidone in 8-year-old children, focusing on on-task behavior, teacher instruction compliance, disruptive behaviors, and positive peer interactions.

References

Centers for Disease Control and Prevention. (2025). *Prevalence and early identification of autism spectrum disorder among children aged 4 and 8 years—Autism and Developmental Disabilities Monitoring Network, 16 sites, United States, 2022.* <https://www.cdc.gov/mmwr/volumes/74/ss/ss7402a1.htm>

