



INTRODUCTION

- Neurodevelopmental (ND) and mental health (MH) conditions are commonly diagnosed among children and adolescents with Down Syndrome (DS)¹
- Because little evidence exists regarding the patterns of psychotropic medication use in DS, clinicians rely on expert opinion and experience-driven recommendations² and make decisions based on experience with other populations including children with intellectual disability (ID)³ or autism spectrum disorder (ASD)⁴

OBJECTIVES

- Characterize the use of psychotropic medications among children and adolescents with DS at a tertiary care center
- Explore the rates of psychotropic medication use across age and gender
- Compare the use of psychotropic medication based on the presence or absence of a co-occurring ND/MH conditions
- Investigate the rates of polypharmacy

PARTICIPANTS & METHODS

- Data were collected from a clinical cohort of children (N=670), adolescents, and young adults with from March 2021 to February 2024.
- At each visit, DS clinician confirmed diagnosis of a co-occurring ND/MH (using DSM-5 criteria) and psychopharmacological treatment class
- Descriptive statistics were used to analyze association between psychotropic medication use, co-occurring ND/MH conditions, and demographic data

Table 1. Characteristics of Total Sample

Characteristic	Any Psychotropic Medication (n=128)	No Psychotropic Medications (n=542)
Age, mean (SD)*	13.6 (4.6)	7.5 (5.5)
Sex, No (%)		
Female	47 (36.7)	243 (44.8)
Male	81 (63.3)	299 (55.2)
Any co-occurring ND/MH *	123 (96.1)	104 (10.2)

*p-value <0.001

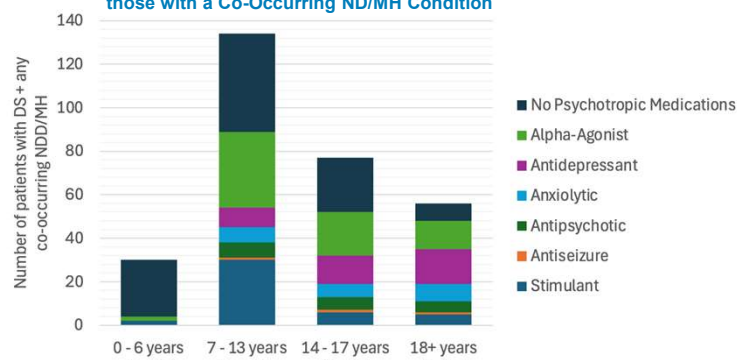
RESULTS

- 19.1% of patients were prescribed at least one psychotropic medication at their most recent clinical visit
- Nearly all (96.1%) had at least one co-occurring ND/MH condition
- Alpha-agonists were the most prescribed medication class (30.8%) followed by stimulants (18.9%), and antidepressants (16.7%)

Table 2. Psychotropic Medication Class Usage by Co-Occurring ND/MH Condition

	No.(%) of patients					
	Alpha-Agonist	Antidepressant	Antipsychotic	Antiseizure	Anxiolytic	Stimulant
No co-occurring ND/MH (n=443)	4 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)
Any co-occurring ND/MH (n=227)	70 (30.8)	38 (16.7)	18 (7.9)	3 (1.3)	21 (9.3)	43 (18.9)
Anxiety/OCD (n=53)	15 (28.3)	26 (49.1)	4 (7.5)	0 (0.0)	6 (11.3)	8 (15.1)
ASD(n=80)	25 (31.3)	7 (8.8)	8 (10.0)	0 (0.0)	7 (8.8)	4 (5.0)
ADHD (n=76)	35 (46.1)	14 (18.4)	3 (3.9)	0 (0.0)	7 (9.2)	39 (51.3)

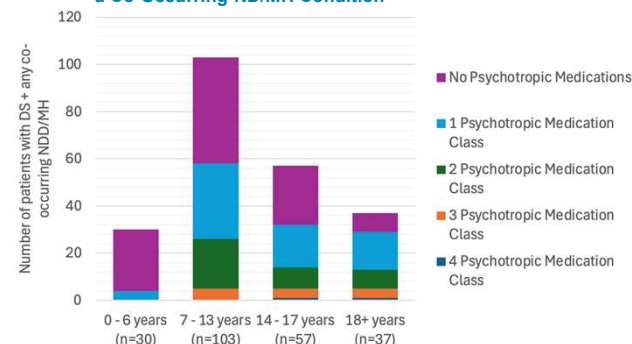
Figure 1. Psychotropic Medication Class Use among those with a Co-Occurring ND/MH Condition



*Subjects may have more than one prescribed psychotropic medication class; counts exceed subset size

- There was a significant difference in psychotropic medication use by age, with older children having increased odds of being prescribed a psychotropic medication

Figure 2. Polypharmacy Rates among those with a Co-Occurring ND/MH Condition



- Polypharmacy was common across the sample and increased with age. A quarter of the sample (23.3%) were prescribed more than one medication class

CONCLUSIONS

- In a clinical sample, approximately one fifth of patients with DS were prescribed psychotropic medications
- Nearly every individual with DS prescribed a psychotropic medication had a co-occurring ND/MH condition
- Overall, rates of psychotropic medication use in our DS sample were lower than reported use in children with ID, ASD, and ADHD
- Further research regarding medication use is needed for individuals with DS

REFERENCES

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²Palumbo, M.L., McDougle, C.J., 2018. Pharmacotherapy of Down syndrome. *Expert Opin. Pharmacother.* 19, 1875–1889. <https://doi.org/10.1080/14656566.2018.1529167>

³McLaren, J.L., Lichtenstein, J.D., Metcalfe, J.D., Charlot, L.R., Drake, R.E., Beasley, J.B., 2021. Psychotropic Use Among Youths With Intellectual and Developmental Disabilities. *Psychiatr. Serv.* 72, 988–997. <https://doi.org/10.1176/appi.ps.201900465>

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⁶McLaren, J.L., Lichtenstein, J.D., Metcalfe, J.D., Charlot, L.R., Drake, R.E., Beasley, J.B., 2021. Psychotropic Use Among Youths With Intellectual and Developmental Disabilities. *Psychiatr. Serv.* 72, 988–997. <https://doi.org/10.1176/appi.ps.201900465>