

Predictors of Psychotropic Medication Use by Children with Intellectual and Developmental Disabilities (ID/DD)

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Intellectual or Developmentally Disability: Definition

- ⇒ Developmental Disability: Persons with severe, chronic disabilities attributable to mental and/or physical impairment which manifest before age 22 and are likely to continue indefinitely and...
- ⇒ Intellectual Disability: IQ below 70 and...
- ⇒ substantial limitations in three or more areas: self-care, receptive and expressive language, learning, mobility, (ADLs) self-direction, capacity for independent living (IADLs), and economic self-sufficiency

Use of Psychotropic Medication in Children

- ➔ Increasing use among children and youth
 - 1987-1996: 2-3x increase in most psychotropic medication classes medications from (Zito, 2003)
 - Youth 1994-2001: from 3.4% to 8.3% (Thomas et. Al, 2006)
 - Antipsychotic use increased 6x use from 1994 - 2002 (Olfson et. Al. 2006)
 - 8-10% on psychotropic medications; 2-3% on multiple medications (dosReis, et. Al, 2005)
- ➔ Increase in use among ID/DD children
 - 50% increase among persons with Autism (Aman, 2005)
- ➔ History of multiple psychotropic medication use in the ID/DD population (adult and children)

Continuity of Care

- ⇒ Continuity of care is defined as consistent access to a single provider or group over time
- ⇒ Increased access and continuity with a single provider is associated with
 - reduced emergency room utilization (Gill et al 2000; Christakis et al 2001)
 - Improved outcomes for persons with IDDM (Christakis et. Al. 2001)
 - Improved coordination of care (Christakis et. Al. 2003)
- ⇒ Little is known about continuity of care for children with ID/DD

Project Aims

- ⇒ Document prevalence of use of high risk Psychotropic medication regimens among children with ID/DD in Florida
- ⇒ To investigate the relationship between use of high risk Psychotropic medication regimens and access to and continuity of primary care and psychiatric care

Guidelines for Psychotropic Medication Use in Persons with MR/DD

- ➔ Reiss, S and Aman, M Eds. 1998 The International Consensus Handbook: Psychotropic Medications and Developmental Disabilities. Ohio State University Nisonger Center; Columbus, OH
- ➔ _____ . American Academy of Child and Adolescent Psychiatry. Practice parameters of the assessment and treatment of children, adolescents and adults with mental retardation and comorbid mental disorders. *J Am Acad Child Adolesc Psychiatry*. 1999;38:5S-31S.

Definition of High Risk Medication Regimen

1. Two antipsychotic medications concurrently*
2. Two benzodiazepines concurrently*
3. Two or more SSRIs concurrently**
4. Two or more antiepileptic drugs concurrently**
5. Valproic acid with other Psychotropic meds**
6. Any Mellaril or Moban
7. Tricyclic antidepressant and typical antipsychotic*
8. Antihistamine + any psychotropic**

⇒ * minimum overlap of 3 months **minimum overlap of 1 month

Identification of Children with ID/DD

- ⇒ Eligibility file of the Agency for Persons with Disability (APD)
- ⇒ Merged APD with Medicaid Claims Files by Medicaid ID number
- ⇒ Medicaid Claims
 - Clients 0-18 years of age
 - Continuously enrolled from July 1, 2000 – June 30, 2004
 - All Medicaid claims—outpatient visits, ER/Hospitalizations, pharmacy, waiver claims

Study Design

- ⇒ Person-level Outcome measures:
 - Any high risk medications regimen
 - On psychotropic medication(s) but no high risk
 - NO psychotropic medications
- ⇒ Predictor Variables
 - Number and Continuity of Primary care
 - Number and Continuity of Psychiatry Care
 - the two years prior to and including time of high risk medication use
 - Clinical and Demographic Factors
- ⇒ Analysis
 - Descriptive statistics, T-tests, ANOVA, Logistic Regression

Visit Definition/Continuity of Care

- ⇒ Primary Care and Psychiatry visits defined:
 - Provider specialty type—Medicaid Claims fields
 - CPT codes—specific for primary and mental health
 - One visit per day for primary care or psychiatry visits
- ⇒ Continuity of Care Index
 - 2 or more visits over 2 years
 - Modified Modified Continuity Index:
 - Ratio of visits to one providers/total visits; ranges from 0-1
 - Closer to 1 reflects more continuity with single provider

Florida DD Program Eligibility File for Home & Community Waiver

- ⇒ Medicaid ID
- ⇒ Gender, Race
- ⇒ Age group (0-10;11-17)
- ⇒ Living arrangement (family home, lg. Group home, small group home, independent living)
- ⇒ DD District (13)
- ⇒ IQ categories
- ⇒ Primary Disability
 - ID only
 - ID+CP
 - Cerebral Palsy Only
 - Spina Bifida
 - ID + Seizures

Data – Medicaid Claims

⇒ Medicaid Claims

- 6,494 children
- Enrolled from July 1, 2000 – June 30, 2004
- 77% enrolled continuously
- All Medicaid claims—outpatient visits, ER/Hospitalizations, pharmacy, waiver claims

The image features a landscape background. The top portion shows a sky with light, wispy clouds. Below the sky is a bright, glowing yellow horizon line. The foreground is a dark, solid grey color. The word "Findings" is centered in the middle of the image in a bold, yellow, sans-serif font with a black outline.

Findings

Population Characteristics

N=6,494

⇒ Gender

- Male 61.6%
- Female 37.4%

⇒ Age:

- 0-10 61.7%;
- 11-17 38.3%

⇒ Race:

- Black 27.2%
- White 67.4%
- Other 5.4%

Population Characteristics

⇒ Disability Type:

■ ID Only	28.0%
■ ID + Epilepsy	4.1%
■ ID + CP	11.8%
■ CP Only	9.8%
■ Autism	17.3%
■ Spina Bifida	6.0%
■ Other	23.1%

⇒ Intelligence Level:

■ Normal IQ	32.2%
■ Mild	14.6%
■ Moderate	19.8%
■ Severe	10.9%
■ Profound	12.6%
■ Untested	9.9%

Population Characteristics

⇒ Living situation:

- Family Home 83.2%
- Independent/supported, Small/Large Group Home, other 16.8%

⇒ District

- 14 districts/regions
- Population ranging in size from 182-1090

Frequency of Medication Combinations

Risk 1 = Two antipsychotic medications concurrently	4.6%
Risk 2. = Two benzodiazepines concurrently	3.4%
Risk 3. = Two or more SSRIs concurrently	0.5%
Risk 4. = Two or more antiepileptic drugs concurrently	16.0%
Risk 5. = Valproic acid with other psychotropics.	18.1%
Risk 6. = Any Mellaril or Moban	3.9%
Risk 7. = Tricyclic antidepressant and typical antipsychotic	0.5%
Risk 8. = Antihistamine + any Antipsychotic	1.9%
Any High Risk Psychotropic Medication Identified	31.1%
Psychotropic Medication but no high risk combination	38.1%
No Psychotropic Medications Identified	30.9%
Total Population	100.0%

Frequency of Multiple Medication Combinations

Number of Risk Combinations	Total	Percent
1 high risk combination	1199	18.5%
2 high risk combinations	581	8.9%
≥ 3 high risk combinations	237	3.7%
Total	2017	31.1%

Bivariate Analyses: Demographics

		Any High Risk Med	Psych Meds/Non-high risk	No Psych Meds	P-value
Gender	Female	29.4%	38.8%	31.8%	.0703
	Male	32.1%	37.6%	30.3%	
Race	Black	30.7%	38.6%	30.7%	.5227
	White	31.5%	37.7%	30.8%	
	Other	27.2%	39.3%	33.5%	
Age	0-10 yrs	27.7%	40.5%	31.8%	<.0001
	10 – 17 yrs	34.7%	35.5%	29.9%	

Bivariate Analyses: Program Area

	Any High Risk Med	Psych Meds/Non-high risk	No Psych Meds
District 1: Pensacola/W. Panhandle	29.8%	41.8%	28.4%
District 2: Tallahassee/Surrounding Co.	23.5%	42.5%	34.1%
District 3: Gainesville/N Central FL	37.1%	40.5%	22.4%
District 4: Jacksonville/Surrounding Co.	33.0%	37.4%	29.6%
District 7: Orlando/Central FL	32.2%	35.9%	31.8%
District 8: Ft Meyers/Surrounding Co.	31.3%	36.3%	32.4%
District 9: Palm Beach Co.	31.0%	33.3%	35.7%
District 10: Ft Lauderdale/Broward Co.	27.3%	40.6%	32.1%
District 11: Miami/Dade	31.6%	37.0%	31.4%
District 12: Daytona Beach/Surrounding Co.	31.8%	33.6%	34.5%
District 13: Ocala/Surrounding Co.	36.4%	34.0%	29.6%
District 14: Lakeland/Surrounding Co.	33.3%	37.3%	29.4%
District 15: Ft Pierce/Surrounding Co.	34.9%	41.4%	23.7%
District 23: Tampa Bay/Surrounding Co.	31.2%	39.0%	29.8%

P = .0032

Bivariate Analyses: Disability Type

	Any High Risk Med	Psych Meds/Non-high risk	No Psych Meds
MR Only	35.0%	36.3%	28.7%
CP Only	21.8%	41.4%	36.8%
MR and CP	34.6%	42.0%	23.5%
MR and Epilepsy	52.3%	33.7%	14.0%
Autism	30.2%	41.1%	28.6%
Spina Bifida	8.0%	35.7%	56.6%
Other incl. Prader Willi	31.3%	35.9%	32.9%

P = <.0001

Bivariate Analyses: Level of ID

	Any High Risk Med	Psych Meds/ Non-high risk	No Psych Meds
Normal Intelligence	24.1%	40.1%	35.8%
Mild Retardation (IQ: 70 – 55)	33.5%	34.5%	32.0%
Moder. Retardation (IQ: 54- 40)	31.5%	36.6%	31.9%
Severe Retardation (IQ: 39 – 24)	37.4%	37.8%	24.8%
Profound Retardation (IQ: <24)	42.2%	38.2%	19.6%
Untested (due to age not ID)	28.0%	39.7%	32.3%

P = <.0001

Bivariate Analyses: Living Situation

	Any High Risk Med	Psych Meds/ Non-high risk	No Psych Meds
Family Home (Parent, Relative, Guardian)	26.4%	39.0%	34.6%
Group Home, Foster Care, other	54.1%	33.2%	12.7%

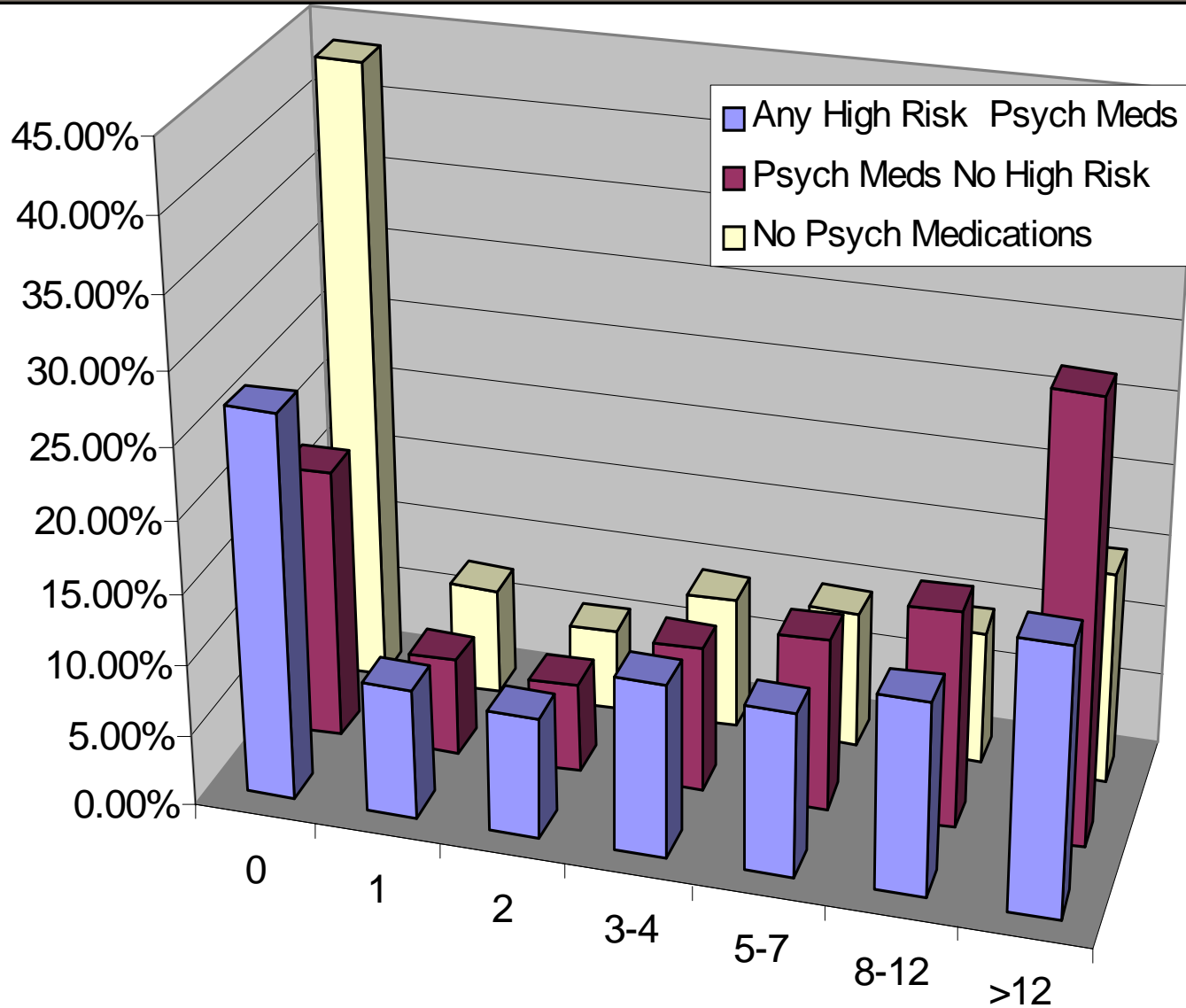
P = <.0001

Mean Number of Visits-Continuity Index

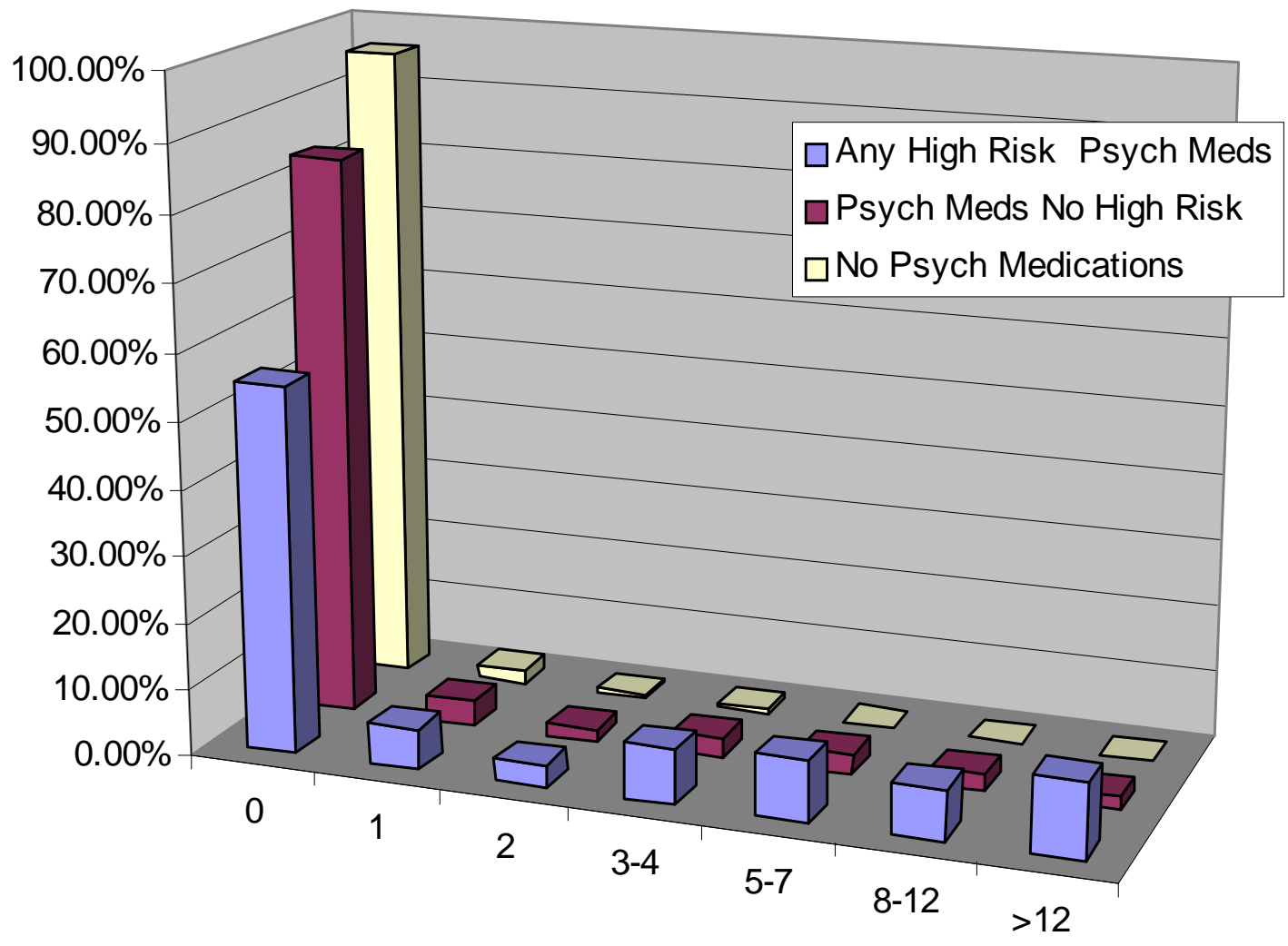
Any Risk Combo Drugs without Risk No Drugs

	MEAN	STD	MEAN	STD	MEAN	STD	ANOVA
# Primary Care Visits in Two Yrs	7.37	10.77	10.73	13.86	5.92	12.14	<.0001
# of Psychiatry Visits in Two Yrs	4.48	9.73	1.01	3.94	0.12	0.92	<.0001
Primary Continuity Care Score with 2 or more Visits in Two Yrs	0.33	0.39	0.34	0.41	0.33	0.41	<.2360
Psychiatry Continuity Care Score with 2 or more Visits in Two Yrs	0.43	0.45	0.57	0.44	0.6	0.43	<.0001

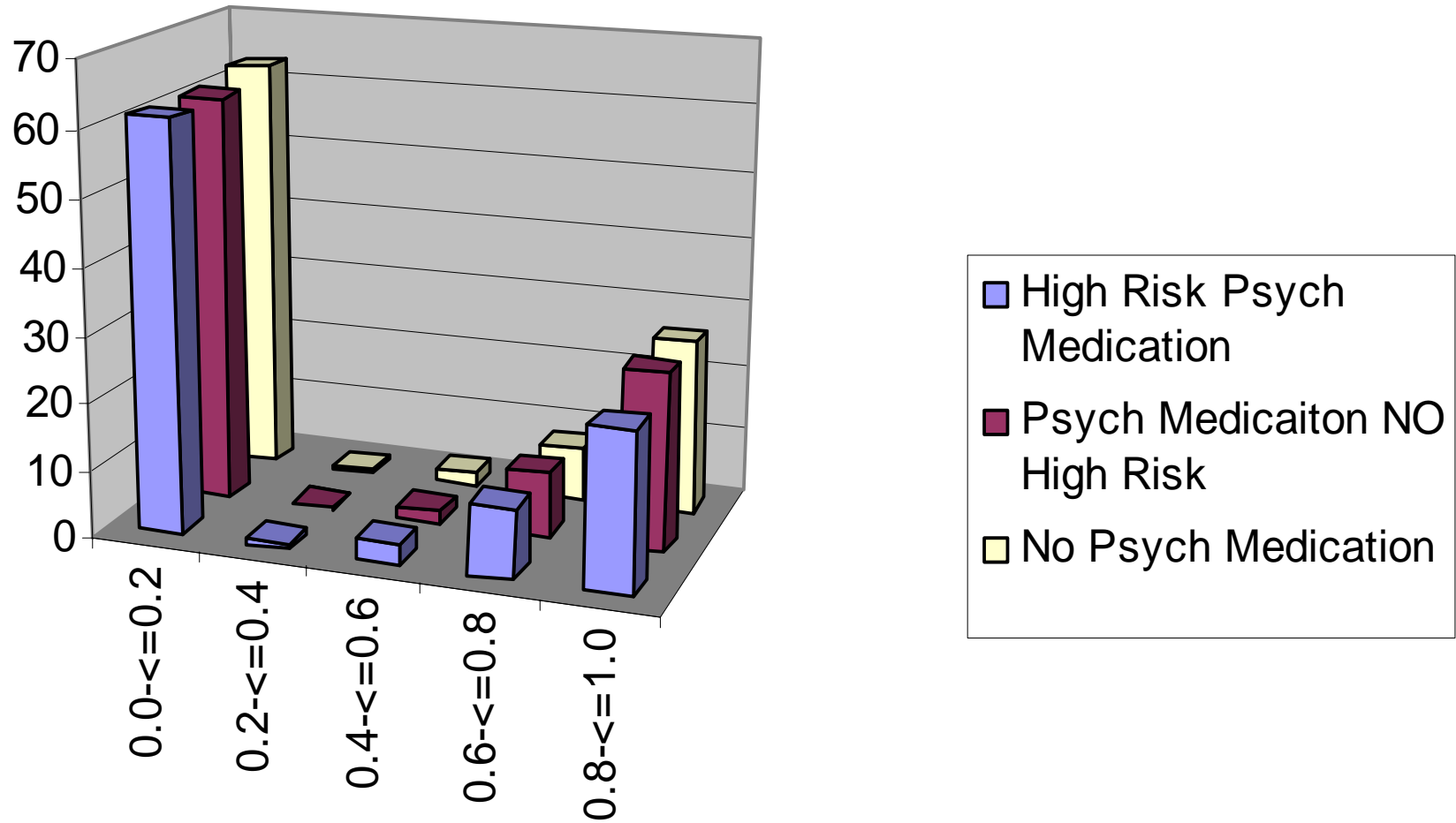
Number of Primary Care Visits by Medication Risk Group



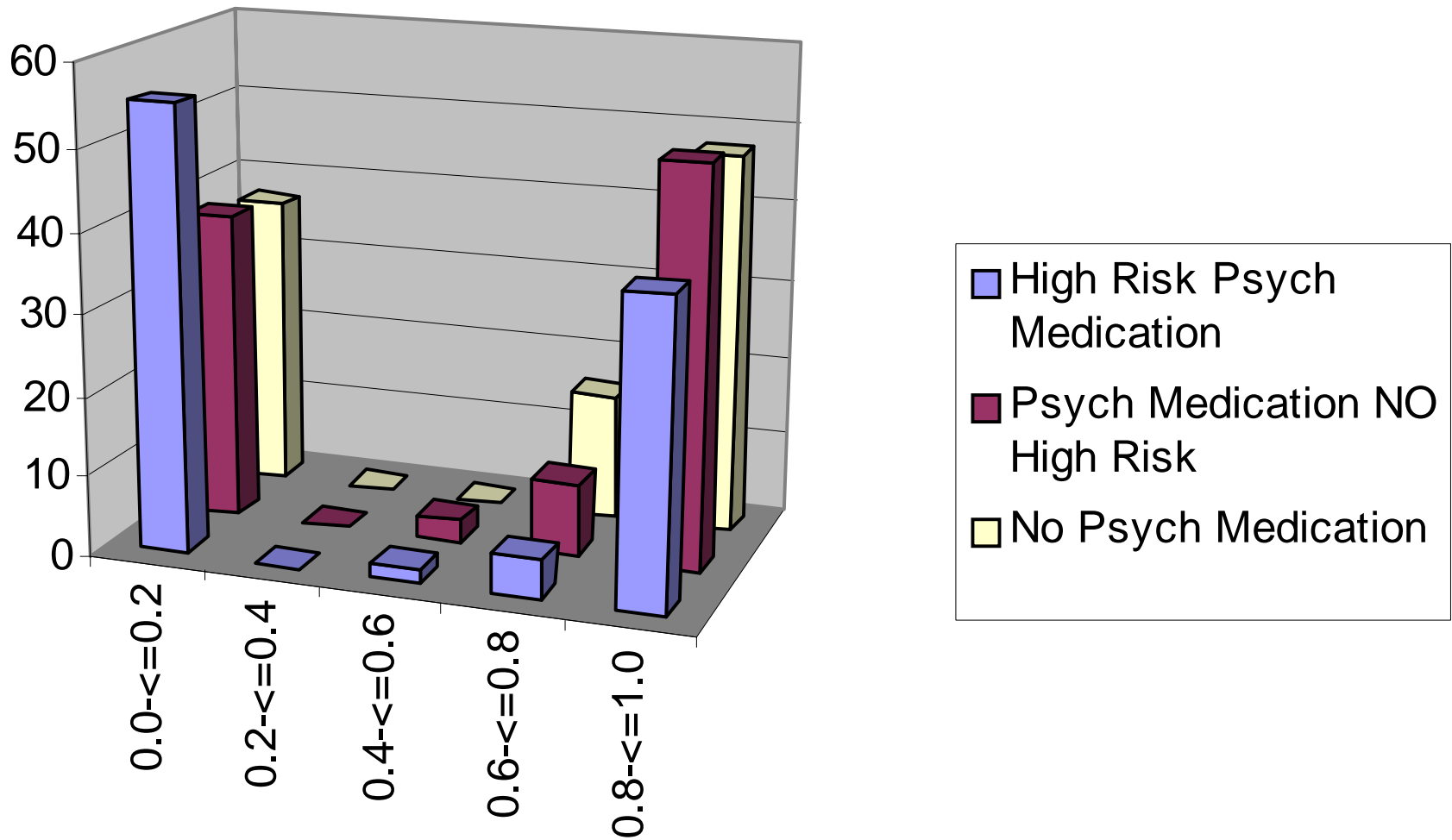
Number of Psychiatry Visits by Medication Risk Group



Continuity of Primary Care by Medication Risk Group



Continuity of Psychiatry Care by Medication Risk Group



Logistic Regression Predicting High Risk Medication Use vs. Low Risk/No Use*--base model only

	Odds Ratio	Confidence Interval
Race: Black Vs White	0.854	0.746 – 0.978
IQ Severe Retardation Vs Normal	1.331	1.072 – 1.652
IQ: Profound Retardation vs Normal	1.674	1.352 – 2.074
Living: Other Vs Family Home	3.020	2.602 – 3.505
Major Disability Category:: CP Only Vs MR Only	0.724	0.550 – 0.955
Major Disability Category: Spina Bifida Vs MR Only	0.216	0.138 – 0.339
Major Disability Category: MR and Epilepsy Vs MR Only	1.978	1.492 – 2.621

* Gender, Program Geographic Districts were not significant

Logistic Regression

	Point Estimate	95% Wald Confidence Limits	
Number of Primary care Visits in two years	1.00	0.99	1.01
Number of Psychiatry Visits in two years	1.12	1.10	1.15
Continuity Score of Primary Care in two years	1.10	0.81	1.50
Continuity score of Psychiatry visits in two years	0.47	0.31	0.73

Limitations

- ⇒ Can not identify visits to providers paid by other insurances or by parents out-of-pocket
- ⇒ Definition primary care and psychiatric visits is imprecise & May influence continuity measure
- ⇒ Medicaid claims may not account for all medications prescribed/taken

Discussion

- ⇒ High risk psychotropic medication regimens are common in the child ID/DD population
- ⇒ Access to psychiatric care is limited even for those on high risk medication regimens
- ⇒ Continuity of primary care is largely inadequate
- ⇒ Continuity of psychiatric care is uneven and very low for half of those accessing psychiatric care

Discussion

- ⇒ Continuity of Psychiatric Care is associated with very decreased the likelihood of being on High risk psychotropic medication combinations
- ⇒ Improved access to and continuity of psychiatric care is important because the management of mental health/behavioral issues in persons with ID/DD is very complex
 - Diagnostic issues, lack of guidelines for care;
 - Drug side effects common/ drug-drug interactions
 - Potential for increased impairment is great

Opportunities to Improve Care

- ⇒ Increase access/continuity of psychiatric care
 - Increase reimbursement for mental health care
 - Psychologists as well as psychiatrists
 - Implement intensive mental health targeted case management of children on Medicaid Waiver
 - Jacksonville Pilot in Adults on High Risk Psychotropic Medications
 - Build on existing APD Support Coordination Model
 - Improve integration with Children's Medical Services Care Coordination Model

Opportunities to Improve Care

- ➔ Increase training in diagnosis and management of mental health issues by primary care providers
 - AAP Task Force on Mental Health
 - Bright Futures/Mental Health
 - Training in mental health diagnosis and management of children with ID/DD
- ➔ Increase continuity of primary care
 - Primary Care Reimbursement
 - Children's Medical Services/Ped-I-Care Model



Thank you!

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**Districts/Region
Department of
Developmental Disabilities**

