



Multilevel Modeling: Student, School and Community Characteristics that Impact Predictors of Postsecondary Outcomes for High Schoolers with Autism Spectrum Disorder



Alice Verstrat, M.Ed. & Tara Regan, M.S.W.

Frank Porter Graham Child Development Institute, University of North Carolina, Chapel Hill

alice14@live.unc.edu & teregan@live.unc.edu

Introduction

Studies find that anywhere from 4 to 13% adults with autism spectrum disorder (ASD) are competitively employed (Taylor & Seltzer, 2011) and are among the lowest of any disability group engaged in postsecondary employment and education settings (Morgan & Riesen, 2016; Shattuck et al., 2012).

Focus has now shifted to identifying high school programs and predictors to improve postsecondary outcomes for individuals with ASD. One theme that emerges is the importance of students identifying and setting goals, otherwise known as self-determination, an identified evidence-based practice in the transition planning process.

Purpose

To identify and examine models of variables that predict students voicing post-graduation goals with their parents and teachers.

Study Aims:

- Establish how student-level variables predict the frequency of shared goals.
- Include school-level and community-level variables to examine whether student-level predictors vary as a result of school and community characteristics.

Method

Data were drawn from a larger ongoing study of high school students with ASD, the Center for Secondary Education for Students with Autism Spectrum Disorders (CSESA). School-and community-level data was collected from the National Center for Education Statistics (NCES) on schools. For the present study, data were available from the first cohort of students, with a teacher- and parent/caregiver-report proximal measure.

Multilevel modeling techniques assessed:

Level 1: Student-level characteristics

Level 2: School- and community-level characteristics

Student-Level Characteristics (n=167)

Race and Gender	Vineland-II Adaptive Behavior	Leiter-3 Nonverbal IQ	Household Income
White 80.72%	30-45 1.14%	70-85 80.72%	10K 10.84%
Non-white 19.2%	46-60 3.43%	86-100 30.2%	30K 9.64%
	61-75 32.57%	101-115 25.53%	50K 11.54%
Male 85.37%	76-90 49.72%	116-130 11.45%	70K 15.06%
Female 14.63%	91-105 9.71%	131-145 4.17%	90K 10.24%
	106-120 3.43%		110K 42.77%
	Mean 79.5	Mean 97.3	Mean \$76,500

School- & Community-Level Characteristics (n=167)

Student-Teacher Ratio	School's locale	Proportion of students qualified for Free & Reduced Lunch
13-16 33.17%	Urban 36%	0-15 19.51%
17-20 30.24%	Suburban 50%	16-30 29.77%
21-24 15.13%	Rural 14%	31-45 27.8%
25-28 21.46%		46-60 9.27%
		61-75 5.8%
		75-90 5.9%

Multilevel Regression Results Predicting Goal Sharing (Conditional Model)

Effects	Goal Sharing	
	β	SE
Intercept	2.26	.138
Non-white	.179	.256
Gender	.136	.312
Household Income	.000	.003**
Vineland	.033	.009**
NV IQ	.002	.006

** p < 0.05

Multilevel Regression Results Predicting Goal Sharing (Random Coefficient Model Results)

Effects	Goal Sharing	
	β	SE
Urban	.135	.325
Suburban	.103	.670
Student-Teacher	.004	.005
Free-Reduced Lunch	.000	.000
Vineland X Student-Teacher	.002	.000**
Household Income	.000	.000**

** p < 0.05

Variance Within and Between Schools Based on Reporter

Reporter	Goal Sharing	
	SD Residual	SE
<i>Teacher</i>		
Within School	1.098	.078
Between School	.380	.154
<i>Parent</i>		
Within School	1.35	.091
Between School	.203	.280

Findings

Student level: Gender, race, non-verbal IQ, and household income returned insignificant results in predicting post-secondary goal sharing. The Vineland-II adaptive behavior composite score was the only significant student-level predictor of sharing post-secondary goals. The adaptive score variable explained 12.5% of the variance in the outcome variable.

School and Community level: Shared goal frequency increased by approximately 20% for both urban and suburban students as compared to their peers in rural communities. High-poverty schools and student-teacher ratio in this sample did not impact the frequency of students' shared goals. Interaction effects between socioeconomic school and student indicators, and between the Vineland-II score and student-teacher ratio warrant further analysis with the larger data sample.

Conclusion

The barriers to post-secondary success lay in the adaptive-social domain, rather than intelligence for individuals with ASD and no ID. We need to refocus or add supports and programs to develop the adaptive/functional domains for even cognitively high-functioning individuals with ASD.

A student diagnosed with autism in a rural community should trigger increased efforts and programming to prevent isolation and dependency after high school.

References

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