Examining the Trajectory of Students with ASD in a Large Public School District

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Background

- Little is known about long-term treatment response among children with ASD; specifically, do initial treatment gains maintain or are they predictive of future trajectory?
- Growth mixture modeling can assess intervention effects in longitudinal trials, by grouping students by different growth trajectories.

Objectives

- To determine if children with ASD participating in a standardized intervention trial could be characterized by IQ trajectory as measured by the DAS.
- To examine classroom variability in changes in DAS and ADOS scores.
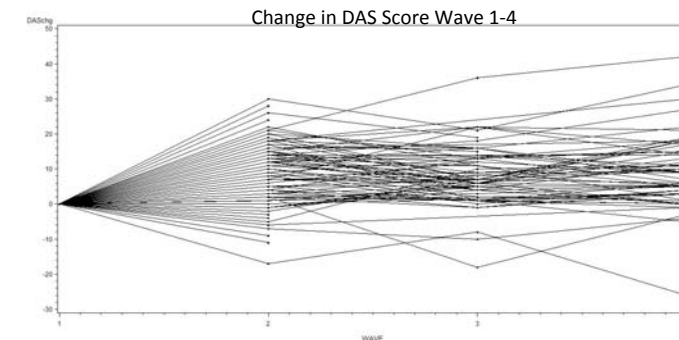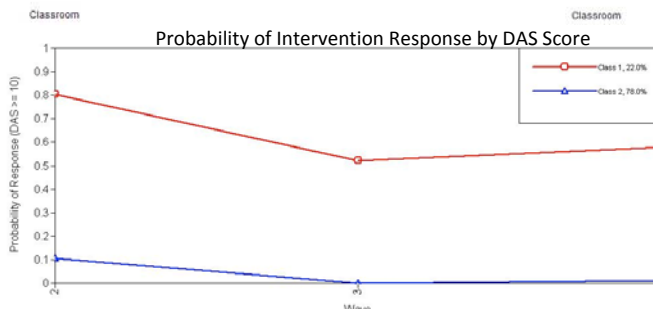- To examine predictors of treatment response among the groups.

Methods

- 363 students in 64 classrooms were assessed over two years, with a maximum of four time points per student, as part of an intervention study in the School District of Philadelphia.
- Students were administered the ADOS and DAS at the beginning and end of the school year to measure changes over time in communication, socialization and cognitive functioning.
- Growth mixture modeling was used to examine if children could be profiled by their change in DAS score. These groups were then compared to examine the associated trajectory of ADOS symptom severity scores.

Results

Change in DAS Score by Classroom

Change in ADOS Score by Classroom
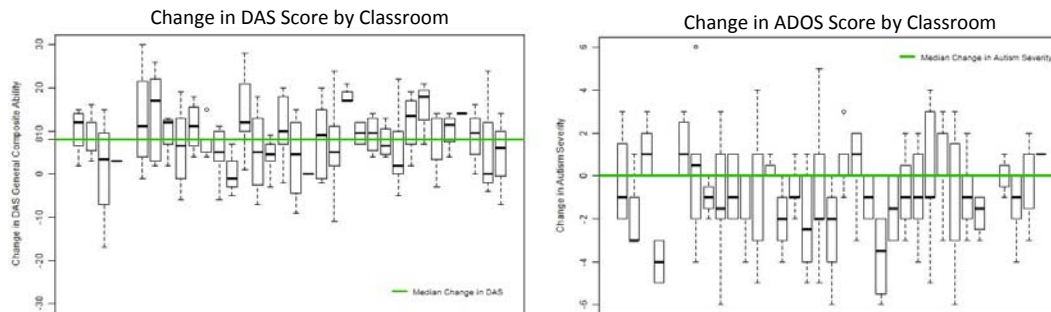
Unadjusted Odd Ratios and 95 % Confidence Intervals

Covariates	Responders v. Non-responders	Severe ASD symptoms vs. Mild or No symptoms
Age (years)	1.39 [1.04, 1.85]	0.84 [0.44, 1.52]
Female	1.11 [0.42, 2.92]	1.69 [0.26, 11.02]
Race/Ethnicity		
White	reference	reference
Minority	0.92 [0.41, 2.05]	0.29 [0.02, 5.52]
Unknown	0.04 [0.01, 0.32]	0.12 [0.01, 3.06]
DAS (Wave 1)	0.99 [0.96, 1.01]	0.95 [0.92, 0.98]

Probability of Intervention Response by DAS Score

Change in DAS Score Wave 1-4

Discussion

- 22% of the sample were "positive responders" to intervention as measured by the DAS.
- Variability in response was greatest between Waves 1 & 2, followed by relative maintenance of gains.
- Some loss was noted over the summer between Years 1 and 2.
- Intervention response as measured by the DAS and ADOS varied considerably by classroom.
- Sex, ethnicity and baseline DAS score did not predict response class.