THE RELATIONSHIP BETWEEN INTELLIGENCE AND CAREGIVER RATINGS OF SOCIAL SKILLS FOR CHILDREN WITH AUTISM

Rachael E. Aiello, M.S.1 & Lisa A. Ruble, Ph.D.
Department of Educational, School, and Counseling Psychology

Correspondence Information1: rachel.aiello@uky.edu

ABSTRACT

The DAS was administered to 61 children with autism (Mage = 5.08 years old, SD = 1.52). 34.5% were boys. The ECSSS is a criterion-based questionnaire that assesses early social skills, it accounted for little of the variance in social skills as rated by caregivers. Although cognitive functioning is not part of the diagnostic criteria for autism, it is often a target for early intervention planning and outcome evaluation. For treatment planning, this may be problematic because educators may develop intervention goals or make educational placement decisions based on perceived abilities based on standardized test scores, rather than actual skills, of the child.

For outcome evaluation, improvements in IQ scores (Smith, 2001), may not result in improvements in the core features of autism (i.e., social and communication impairments; Anderson, 2001).

Behavioral interventions that impact IQ scores may be misleading because of an indirect effect of promoting test-taking strategies and encouraging behavior associated with better test performance (Lord & Schopler, 1989), rather than a true improvement on underlying cognitive functioning.

Despite these challenges, what remains unknown is the relationship between social behaviors and intellectual functioning.

Although cognitive functioning may not be part of the criteria for autism, it is often a target for early intervention planning and outcome evaluation. For treatment planning, this may be problematic because educators may develop intervention goals or make educational placement decisions based on perceived abilities based on standardized test scores, rather than actual skills, of the child.

For outcome evaluation, improvements in IQ scores (Smith, 2001), may not result in improvements in the core features of autism (i.e., social and communication impairments; Anderson, 2001).

Behavioral interventions that impact IQ scores may be misleading because of an indirect effect of promoting test-taking strategies and encouraging behavior associated with better test performance (Lord & Schopler, 1989), rather than a true improvement on underlying cognitive functioning.

Despite these challenges, what remains unknown is the relationship between social behaviors and intellectual functioning.

Although researchers have repeatedly documented the difficulties with social skills demonstrated by individuals with autism, few have assessed whether cognitive functioning is associated with social skills.

This information will help increase understanding of the multiple and complex influences on social development.

OBJECTIVES

The purpose of this study is to describe the relationship between cognitive functioning and parent ratings of social skills for young children with autism. One primary research question and two secondary questions include:

- What is the relationship between cognitive functioning as measured by the Differential Abilities Scale (DAS; Elliott, 1990) and caregiver ratings of social skills on the Early Childhood Social Skills Survey (ECSSS; Ruble & Dalrymple, 2005) and how much variance is accounted for in social skills by IQ?

- What is the internal consistency of the caregiver ratings on the ECSSS?

- What is the relationship between the ECSSS and established measures of social functioning- the Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, Cicchetti, 1984) and the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore, & Risi, 1999)?

METHODS

The DAS was administered to 61 children with autism (Mage = 5.08 years old, SD = 1.52). 34.5% were boys. The ECSSS is a criterion-based questionnaire that assesses early social skills, it accounted for little of the variance in social skills as rated by caregivers. Although cognitive functioning is not part of the diagnostic criteria for autism, it is often a target for early intervention planning and outcome evaluation. For treatment planning, this may be problematic because educators may develop intervention goals or make educational placement decisions based on perceived abilities based on standardized test scores, rather than actual skills, of the child.

For outcome evaluation, improvements in IQ scores (Smith, 2001), may not result in improvements in the core features of autism (i.e., social and communication impairments; Anderson, 2001).

Behavioral interventions that impact IQ scores may be misleading because of an indirect effect of promoting test-taking strategies and encouraging behavior associated with better test performance (Lord & Schopler, 1989), rather than a true improvement on underlying cognitive functioning.

Despite these challenges, what remains unknown is the relationship between social behaviors and intellectual functioning.

Although researchers have repeatedly documented the difficulties with social skills demonstrated by individuals with autism, few have assessed whether cognitive functioning is associated with social skills.

This information will help increase understanding of the multiple and complex influences on social development.

RESULTS

A bivariate correlation was conducted to determine the relationship between items on the ECSSS and items from the Socialization domain on the VABS, and items from the Social Interaction domain on the ADOS. Simple linear regression analysis was used to determine the relationship between and variance accounted by the General Cognitive Ability (GCA) scores obtained on the DAS with caregiver ratings of social skills from the ECSSS.

Validity Estimates

A bivariate correlation was also performed to determine the relationship between items on the ECSSS and items from the Socialization domain on the ADOS. A non-significant correlation (r = .172, p = .101) between the two measures was obtained.

A bivariate correlation and regression analysis was conducted using GCAs obtained on the DAS as a predictor of caregiver ratings of early social skills on the ECSSS. The model revealed that GCAs account for 8.6% of the variance (based on r-squared) in caregiver ratings of early social skills with a Pearson r = .294, R(1,59) = 0.587, p = .021.

Listwise deletion was used in the regression analysis, causing any participant with missing data to be dropped entirely from the analysis.

DISCUSSION

Results obtained from the regression model indicated that although cognitive functioning, as measured by the DAS, correlates with early social skills, it accounted for little of the variance in social skills as rated by parents. Despite varying levels of cognitive functioning, children with autism display remarked impairment in development of early social skills as rated by caregivers.

Based on the variance accounted for by the model (8.6%), it may be argued that using gains in cognitive functioning as an outcome measure for social skills interventions may be misleading because other residual variables may better predict and account for social skills development.

These results are supported by conclusions drawn from previous researchers who have explored different measures of cognitive functioning (i.e., WISC-IV and Stanford Binet) and social functioning (i.e., VABS and ADOS) as part of their model and found similar findings of a weak and non-predictive relationship between cognitive functioning and social skills ratings (Brito & Poustka, 2002; Freeman, Del Homme, Guthrie, & Zhang, 1999; Joseph, Tager-Flusberg, & Lord, 2002; Liss et al., 2001).

The ECSSS has excellent reliability for assessing caregiver ratings of early social skills in children with autism.

Although the ECSSS was not found to be correlated with the VABS, it can be argued that the ECSSS measures early social skills on a more discrete and precise level for children with autism.

The ECSSS takes into consideration the skills that children with autism have the most difficulty in obtaining, such as initiating and maintaining interactions; whereas, the VABS accounts for more global skills (Sparsø et al., 1984).

The ECSSS was indirectly correlated with the Social Interaction domain from the ADOS, indicating that items on the ECSSS tap into similar social skills as measured by the ADOS. While the results obtained lend support to the existing literature, the study is not without limitations from sample size as well as analysis techniques used to account for missing data.

REFERENCES


Lord, C., Rutter, M., Le Couteur, A., & Risi, S. (1999). Autism Diagnostic Observation Schedule. (ADOS; Lord, Rutter, DiLavore, & Risi, 1999). This work was supported by Grant Number R34MH073071 from the National Institute of Mental Health awarded to second author.

Listwise deletion was used in the regression analysis, causing any participant with missing data to be dropped entirely from the analysis.

This work was supported by Grant Number R34MH073071 from the National Institute of Mental Health awarded to second author.