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Title

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Permalink

<https://escholarship.org/uc/item/8h809800>

Journal

Autism Research, 13(12)

ISSN

1939-3792

Authors

DaWalt, Leann Smith
Taylor, Julie Lounds
Bishop, Somer
[et al.](#)

Publication Date

2020-12-01

DOI

10.1002/aur.2348

Peer reviewed



Published in final edited form as:

Autism Res. 2020 December ; 13(12): 2155–2163. doi:10.1002/aur.2348.

Sex Differences in Social Participation of High School Students with Autism Spectrum Disorder

Leann Smith DaWalt¹, Julie Lounds Taylor², Somer Bishop³, Laura J. Hall⁴, Jessica Dykstra Steinbrenner⁵, Bonnie Kraemer⁴, Kara A. Hume⁵, Samuel L. Odom⁵

¹Waisman Center, University of Wisconsin-Madison

²Vanderbilt University Medical Center

³University of California-San Francisco

⁴San Diego State University

⁵University of North Carolina-Chapel Hill

Abstract

There is lack of consensus in the literature regarding sex differences in social outcomes for individuals on the autism spectrum. Further, little research has focused on the social experiences of high school students with ASD during the school day. Using a large racially/ethnically diverse sample of high school students with ASD receiving special education services (n=547; 76 females, 471 males), we examined sex differences in social interactions of youth both during and after school. We also tested for sex differences in background and phenotypic characteristics including autism severity, IQ, adaptive behavior, and mental health. Results indicated few statistically significant differences between males and females in social interactions and phenotypic characteristics (including raw scores of autism symptom severity). However, analysis of standardized scores of autism symptoms suggested that symptom scores for females with ASD diverged more from same-sex peers in the normed sample than scores of males with ASD. Lack of sex difference in social participation for youth with ASD in this study stands in contrast to patterns of sex differences in the general population. Findings suggest that few differences between males and females with ASD, both in social participation and autism symptom severity, might result in females with ASD being more dissimilar to their same-sex peers than males with ASD. Implications of findings for understanding sex differences in ASD across the life course are discussed.

Lay Abstract

The present study examined sex differences in social participation in a large, diverse sample of high school students with ASD. Males and females were very similar in their social interactions both at school and outside of school, based on reports by teachers and parents. Level of autism symptoms was also similar for males and females. However, standardized scores of autism symptoms, which take into account age and sex specific norms, suggested that females with ASD may have behaviors that are more divergent from their same-sex peers than males with ASD.

Corresponding author: Leann Smith DaWalt, 1500 Highland Ave., Madison, WI 53705, lesmith2@wisc.edu.

Keywords

autism spectrum disorder; sex differences; adolescence; social interactions

Introduction

Autism spectrum disorder (ASD) is a lifelong developmental disability marked by significant impairments in social communication and the presence of restricted interests and repetitive behavior. ASD is estimated to affect approximately 1 in 54 children in the US (Maenner et al., 2020) and is 2–5 times more common in males than females (Lai, Lombardo, & Baron-Cohen, 2014). Although studies have suggested that females with ASD might have different support needs than males with ASD in adulthood (Sung et al., 2015; Taylor & Mailick, 2014; Taylor, Henninger, & Mailick, 2015), research on how sex might affect social behaviors has been inconsistent and limited, often due to sample sizes that are too small to examine sex differences. Furthermore, few studies have focused on sex differences specifically during the adolescent period. The present study addressed this gap by examining sex differences in social participation in a large, diverse sample of high school students with ASD.

Adolescence is an optimal time for studying sex differences in social participation. The social milieu during adolescence is notably more complex than in childhood, with demands and opportunities becoming increasingly more comparable to the adult social world. Adolescence is the last developmental period prior to the transition into adult roles, making it a salient time for understanding possible differences in social experiences that are precursors for activities during adulthood. Furthermore, females are diagnosed with ASD later than males, and thus studies examining sex differences in early childhood are likely biased toward inclusion of females with more severe impairments (Andersson, Gillberg, & Miniscalco, 2013; Dworzynski, Ronald, Bolton, & Happe, 2012). Most females will be diagnosed by the time they are in high school (Sheldrick, Maye, & Carter, 2017), providing a sample more likely to represent the full range of functioning of females with ASD.

A limited number of studies have examined sex differences in social participation for adolescents with ASD, with findings largely inconsistent. In a large, nationally-representative dataset (The National Longitudinal Transition Study – 2), youth with ASD were more likely than youth with other disabilities to *never* see friends outside of school (43.3%) and *never* be invited to social activities (50.4%); in this study, sex was not a significant correlate of social participation (Shattuck et al., 2011). In contrast, using an online survey to examine summer social activities in a sample of 91 adolescents with ASD, Kuo and colleagues found sex differences in the nature of social participation. Males more frequently played video games with friends whereas females more frequently had conversations with friends (Kuo et al., 2011).

Notably, these studies did not examine social experiences during the school day. Adolescents with ASD spend the majority of their waking hours in school, and this time may be marked by multiple social challenges which could have implications for later adult outcomes. For instance, in a study of social networks, over 70% of youth with ASD were isolated or

peripheral in the classroom social structure compared to less than 10% of typically developing students. Sex differences were not examined in this study, however, given the small sample size (Locke et al., 2010).

In one of the only studies to examine sex differences in school-based peer relationships of children with ASD, Dean et al. (2014) found that girls with ASD were more similar to boys with ASD than to their typically-developing same-sex peers in terms of friendship nominations---with both males and females with ASD having fewer nominations than typically-developing children. Further, girls with ASD had preferences for socializing and friendships similar to their same-sex peers but skills more like boys with ASD than girls without ASD (Dean et al., 2014). Dean and colleagues noted that given general sex differences in socializing (e.g., reciprocal friendships and social nuances being particularly important for girls), females with ASD may be at more of a disadvantage in these interactions than males (Dean et al., 2014). Children in this study ranged from 6 to 10 years of age. Given the increasingly complex social landscape of adolescence, it is unclear whether findings from younger children would be relevant to the social experiences of adolescents with ASD. Taken together, these studies suggest that high school students with ASD as a group have more limited social opportunities than their peers without ASD, but questions remain regarding the degree to which there are sex differences in these experiences.

Present Study

Using a large sample of high school students with ASD, we tested for potential sex differences in social interactions during the school day and outside of school. This study addresses important gaps in the literature by utilizing both parent and teacher reports of social behavior to capture social activities in and outside of school. Given pervasive patterns of sex differences among typically-developing adolescents (Larson & Verma, 1999; McHale et al., 2004; Way & Silverman, 2012), we hypothesize that females with ASD will have more social interactions than males with ASD both in and out of school.

To better understand and characterize the sample, we also tested for sex differences in background and phenotypic characteristics utilizing standardized measures, including direct testing with the youth, parent-report, and teacher-report. Finally, this study uses a sample that is larger and more heterogeneous than most other studies focused on sex differences in ASD.

Methods

Participants

Participants for the present study were drawn from an ongoing study of a comprehensive treatment model for high school students with ASD (Hume et al., 2018). For the larger study, 60 high schools from three states in the US (NC, CA, and WI) were randomly assigned to an intervention (CSESA) or service-as-usual control condition. To participate, schools had to serve both general education students and special education students (e.g.,

high schools exclusively serving students with ASD did not participate). All data for the present analysis were collected at baseline prior to the implementation of the intervention.

Adolescents (n=547) and their parents were recruited at each high school site. Notably, students were recruited at the level of the high school and not through individual teachers or classrooms. Consent packets for adolescent and parent participants were sent to all eligible adolescents at each school and signed forms were returned to research staff. All adolescents and parents consented to their participation and the study was conducted in compliance with the University of North Carolina's IRB (IRB# 13-3002). Adolescents were enrolled in the study if they met the following inclusion criteria: a) were between 13-22 years old, b) had an educational classification of autism, c) planned to remain in high school for two years after enrolling in the study, d) did not have a significant uncorrected vision/hearing impairment, and e) had a parent who consented to participate and could complete a series of assessments in English or Spanish (less than 2% of the sample completed forms in Spanish). Importantly, as all students who met the above criteria were given the opportunity to participate, no student was excluded based on cognitive, language, or adaptive skills, or the presence of psychiatric problems or other behavioral challenges.

At time of enrollment, adolescents ranged in age from 14 to 21 years (M=16.16, SD=1.44); this wide age span reflects the range of ages served in high schools settings through special education in the US. The sample was 86% male. For educational programming, 239 (43.7%) of the students were on a path to receive a modified diploma and 308 (56.3%) were on a path to receive a standard diploma. Almost half of students (43.5%) spent less than 40% of the school day in general education settings, with 24.8% spending 40%-79% of their day in general education settings and 31.7% spending 80% or more in general education settings. Approximately 45% of the students are racially or ethnically diverse (non-white and/or Hispanic). There was a range of family household incomes represented in the sample. The median household income for the sample was between \$60,000 and \$79,000; almost a quarter of the sample (23.6%) had income less than \$40,000 and 35% of the sample had income greater than \$99,000. There were no statistically significant differences between male and female students in age, diploma type, time spent in general education, race/ethnicity, family income or state of residence (CA, NC, or WI). However, females were first diagnosed with ASD at older ages than males (6.87 years vs 5.46 years, respectively, $t=2.37$, $p<.05$) based on parent report.

Procedures

An assessment battery was administered to adolescents in the fall of their school's first year of participation with CSESA prior to any study-related intervention. The battery consisted of standardized measures and a probe of student skills and learning needs developed for the project (see Hume et al., 2018 for more detail). Parents received two survey packets via mail or through an online survey site in English or Spanish (parent preference): the first packet contained measures regarding demographic information and phenotypic characteristics of the son or daughter with ASD and the second packet contained measures regarding current activities including social participation in the past four weeks. A key teacher with knowledge of student skills, such as a case manager or autism classroom teacher, completed two similar

surveys about the assigned student via paper or through the online survey site: one packet contained measures of phenotypic characteristics and one packet contained measures of current activities. In some cases, school staff completed surveys on multiple students if appropriate. Teachers and parents completed measures of current activities over a 2–3 month period after the completion of phenotypic measures. Given the rolling nature of enrollment across the fall semester (i.e., not all students were consented at the same time within a school), each student had a different timeline during the year of direct testing and subsequent collection of teacher and parent reports. Teachers were encouraged to consult with other professionals to assist with accuracy of reporting and were compensated for their time. Teachers were also provided autism-specific professional development opportunities as part of the project, which further supported teacher engagement and additional focus on target students.

Measure of Social Participation

School-based social participation was measured using *teacher report of peer interactions* in the past two weeks. Teachers completed a peer network grid in which they reported about the peers at school with whom the person with ASD had social interactions across a two-week period. Questions probed if the peer had a disability, the location of interaction within the school building, and the number of interactions. Based on work by Asmus et al. (2017), for the present study the following summary variables were calculated: total number of social interactions, total number of unique peers with whom there had been social interactions, and the presence of at least one frequent social partner (i.e., greater than or equal to 5 interactions with the same peer across the two-week period; yes = 1).

Social participation outside of the school was measured using *parent report of social activities* during the past four weeks. Parents reported the frequency of the following social activities on a 5-point Likert scale (1 = never to 5 = several times/week): get together with friends/peers in an organized group or activity; get together with friends/peers outside of school not in an organized group or activity; call or send text messages to friends or peers; interact with others using the internet (e.g., email, gaming, Facebook).

Measures of Phenotypic Characteristics

Intelligence.—*Leiter International Performance Scale- 3 (Roid, Miller, Pomplun, & Koch, 2013)*: The Leiter-3 is a test of nonverbal intelligence and cognitive abilities. The Brief IQ screener was administered, which includes four subscales: Figure Ground, Form Completion, Classification/Analogies, and Sequential Order. These yield a nonverbal IQ score (M=100, SD=15). The Leiter-3 was administered entirely nonverbally and did not require any spoken or written output from the adolescents. The Leiter-3 is both valid and reliable, with internal consistency reliability ranges for the subtests between .67 and .95 (Roid et al, 2013). Adolescent participants were administered the Leiter during their school day by trained research staff.

Adaptive Behavior.—*Vineland Adaptive Behavior Scale – 2nd Edition (Vineland-II) - Teacher Rating Form (Sparrow et al., 2005)*: The Vineland-II was used to assess adaptive behavior observed in the classroom setting. It was completed by teachers who rated the

degree to which the adolescents demonstrated skills from 0 (Never) to 2 (Usually) in three domains: Communication, Daily Living, and Socialization. An Adaptive Behavior Composite score is provided (M=100, SD=15) with higher scores indicating better adaptive functioning. The measure is valid and reliable, with content validity established for the subdomain and domain structure (Sparrow et al., 2005), and reliability coefficients for the Adaptive Behavior Composite score are in the .90+ range.

Autism Symptoms.—Autism symptoms were measured by parent report on the lifetime *Social Communication Questionnaire* (SCQ; Rutter et al., 2001). The lifetime ratings index the most severe autism symptoms of the individual. Items are scored dichotomously, 0 (*does not display this behavior*) or 1 (*exhibits this behavior*) and summed. Higher scores indicate greater severity of impairments during early childhood. Coefficient alpha values were .84 for the total SCQ. *Social Responsiveness Scale-2* (SRS; Constantino & Gruber, 2012): The SRS is a measure of the various dimensions of interpersonal behavior, communication, and repetitive/stereotypic behavior characteristic of ASD. In this study we used the teacher report form. The SRS has 65 items using a 4-point rating scale (Constantino et al., 2003). Raw scores (summed across all items) and t-scores (normed by age and sex) can be generated from the SRS. A total T-score of 76 or higher is considered severe and strongly associated with a clinical diagnosis of ASD, 66 through 75 = moderate deficiencies related to ASD, and 60 to 65 = mild deficiencies related to ASD. T scores of 59 and below are considered to be within typical limits. In the present study both raw scores and T-scores were examined. Cronbach's alpha for the raw score total in the present study was .96.

Co-Occurring Conditions.—Parents responded to a checklist of current mental health diagnoses, checking if the adolescent was diagnosed with any of the mental health conditions listed. If parents indicated any of the following conditions, the son/daughter was given a code of "1" for presence of internalizing diagnoses: anxiety, depression, obsessive compulsive disorder, bipolar disorder. A score of "0" was given to reflect the absence of these conditions. If the parent endorsed any of the following conditions, the son/daughter was given a code of "1" for the presence of externalizing diagnoses: oppositional defiant disorder, attention deficit disorder/attention deficient hyperactivity disorder. A score of "0" was given to reflect the absence of these conditions.

Data Analysis

First, to describe the sample, we used independent sample t-tests to test for sex differences in phenotypic variables. Second, to examine potential sex differences in social participation, we conducted a series of independent sample t-tests. Though some of our variables are ordinal, for large samples such as in the present study, the t-test is robust to violations of the normality assumption (Lumley et al., 2002).

For all analysis we employed multiple imputation for missing data in IBM SPSS 25. Multiple imputation is a method for replacing missing values with predicted values based on available information for those cases and is robust even in cases of large amounts of missing data (Little & Rubin, 2002). The greatest missingness was found for the variable measuring number of school-based social interactions (37%). The results present the estimates pooled

across 37 imputed datasets given the recommendation to impute at least one data set per percentage of data missing (Anderson, 2010). The analytic results with missing values and those with imputed values did not differ substantially and the latter were presented in the paper.

Results

Tests for differences in phenotypic variables for females and males are presented in Table 1. Females were more likely than males to have an internalizing diagnosis (38% with internalizing diagnosis for females vs. 23% for males). Relative to males, females also had significantly higher levels of current autism symptoms based on age and sex-normed standardized scores of the SRS. Not shown in Table 1, based on the standardized scores of the SRS, 54.3% of females were in the severe range of autism symptom severity vs 29.5% of males. However, when examining the raw scores of the SRS, males and females did not significantly differ. There also were no statistically significant differences between groups in IQ, adaptive behavior, lifetime autism symptoms, or having an externalizing diagnosis. Given the lack of statistically significant differences in the majority of phenotypic measures, these variables were not included as covariates in subsequent analyses.

Tests for differences in school-based social participation are presented in Table 2. There were no statistically significant differences between females and males for the number of social interactions in the past two weeks, the number of peers, or the presence of a frequent social partner.

Tests for differences in social participation outside of school are presented in Table 3. There were no statistically significant differences between females and males in terms of frequency of participation with friends in an organized group, frequency of participation with friends outside of an organized group, or frequency of interacting with friends on the internet. However, relative to males, females had significantly higher frequency of calling or texting friends.

Regardless of sex, rates of social participation were low (see Tables 2 and 3). Participants had an average of 8 social interactions in school over a two-week period – less than one per school day. On average, students interacted with only two peers during that same two-week period, and about two-thirds did *not* have a peer that they interacted with on a regular basis (i.e., 5 times or more over two weeks, or once every other day).

Discussion

Despite being adequately powered to detect small to medium effects¹, the present study found overwhelming patterns of similarities between adolescent males and females with ASD in phenotypic and behavioral profiles and in social participation. However, it is

¹A sensitivity analysis was conducted using G*Power software. With a sample size of 471 males and 76 females, using a two-tailed test at alpha = .05, this study has 80% power to detect a difference between groups with a Cohen's d effect size of .35 or greater. According to Cohen (1992), a d of .20 indicates a small effect and .50 indicates a medium effect. Further, medium effect sizes or greater are typically considered to be clinically meaningful. Thus, this study is powered to detect a small-medium effect, and well-powered to detect a clinically-meaningful effect.

important to interpret sex differences in behavior for adolescent males vs females with ASD (or lack thereof) in light of normative development and social relationships during this time. Though we were not able to directly compare adolescent males and females with ASD to peers in the general population (as this was an analysis of an existing dataset), discussion and thinking can be informed by sex-specific norms in standardized measures as well as the extensive research on sex differences in social interactions in the general population.

In our analyses, similar to prior work which did not find significant associations of sex with social outcomes (Shattuck et al., 2011), there were no statistically significant differences between males and females with ASD in indicators of social interaction such as spending time with friends, how often one interacted with others at school, the number of social partners, and the likelihood of having at least one regular social partner. These lack of differences, however, take on a different meaning when considering patterns of social interactions for typically developing adolescents. Compared to males, typically developing females tend to spend more time socializing with peers (Larson & Verma, 1999), and are more likely to have close friendships (Way & Silverman, 2012). Further, sex differences in social interactions increase with age (McHale et al., 2004).

A similar pattern was observed when examining autism symptoms. Consistent with recent work conducted with children (e.g., Tillman et al., 2018; Constantino et al., 2003; Rodgers et al., 2018), in the present study we found that average autism symptom scores were very similar between males and females when examining raw scores. Although the presentation of autism symptoms was similar between males and females, the level of social impairment compared to peers of the same gender (using sex-normed standardized scores) was significantly greater for females relative to males. Thus, similar to findings on social participation, similarities between males and females on an absolute level may lead to greater divergence from typically-developing peers for females with ASD compared to males with ASD.

Taken together, these findings suggest that an investigation of sex differences in ASD has the potential to lead to erroneous conclusions without taking typical development into account. If only raw scores of symptoms and behaviors are examined, one interpretation of the data may be supported - in this case that autism severity or social behavior are similar for males and females. But if one only examines sex-normed indicators of these constructs, a completely different conclusion might be reached – in this case, that females have more severe autism symptoms or more limited social behavior than do males. Future research on sex differences should include both comparisons between males and females with ASD, as well as comparisons with typically-developing peers. Understanding differences in absolute levels of symptoms and behaviors, as well as how these reflect sex differences in the general population are both necessary to accurately discern the unique and common needs of females with ASD.

Findings from the present study provide support for new hypotheses that might help explain sex differences in postsecondary vocational and educational outcomes for adults with ASD. Studies suggest that compared to men with ASD, women have a more difficult time maintaining postsecondary educational and vocational positions (Taylor & Mailick, 2015;

Taylor, Henninger, & Mailick, 2015), are more likely to voluntarily withdraw from the labor market (Taylor, DaWalt, Marvin, Law, & Lipkin, in press), and are less likely to benefit from the current range of vocational rehabilitation services (Sung et al., 2015). These differences in functional outcomes might not be manifesting because women with ASD have more severe autism and related symptomatology relative to men, but instead because their symptoms and behaviors are more dissimilar to their typically-developing peers. For women with ASD, the way that their autism symptoms interact with typical patterns of female social behavior may be significantly more impairing than their autism symptoms alone (e.g., Bargiela, Steward, & Mandy, 2016; Kanfisz, Davies, & Collins, 2017). The interactions of autism symptoms with societal expectations for women might explain difficulties women face in maintaining job and educational placements. This additional psychosocial vulnerability likewise may place women at greater risk for mental health challenges (Oswald et al., 2016).

Consistent with prior research on adolescents with ASD (DaWalt et al., 2019; Shattuck et al., 2011), the amount of social interaction in our sample was strikingly low for both males and females. These limited social interactions during the school day are similar to findings from Locke and colleagues (2015) showing that high school students with ASD experienced significantly greater loneliness, lower friendship quality, and lower social network status compared to peers without disabilities. The implications of social isolation on mental health, health, and other outcomes, and possible interactions with sex, is an important direction for future research.

Overall, findings from the present study are consistent with other research suggesting that sex differences across a range of outcomes in adolescents and adults with ASD are likely subtle, but may be important (e.g., Sung et al., 2015; Taylor et al., 2019, Tilt et al., 2017). Similar to other studies (e.g., Solomon et al., 2012), we found that females had higher rates of internalizing conditions but we did not find overwhelming differences in autism symptoms or social behavior. Adaptive behavior and IQ levels were similar across sexes, as well as school programming (e.g., level of inclusion). Thus, studies that only examine gross indicators of development might miss sex differences that have important implications for development. In depth data collection will likely be necessary to uncover and understand how males and females with ASD differ in adolescence and adulthood. For example, though this study found similar levels of school inclusion, it might be that females are getting less support in those settings. This would be consistent with research in adulthood suggesting that the likelihood of getting any benefits or family support are similar for individuals with ASD across sexes, but of those getting support, women tend to get less than men (Taylor et al., 2019). Further investigation can reveal unique needs of females with ASD, leading to better supports, and understanding the appropriate comparisons groups will be key.

This study has limitations worth noting. Though some of the standardized measures used in this study had norms conditioned on typically-developing peers, data were not collected in this study on a typically developing comparison group. As sex differences research in ASD moves forward, it will be important to have data on both individuals with ASD and typically developing peers (Taylor & DaWalt, in press). Second, data on social experiences were not collected directly from the adolescents with ASD. Thus, we do not have information on their

subjective experiences of their social interactions or school programming. It is important to note that we did find similar patterns of findings across proxies, which substantially increases the likelihood that the findings are valid. Further, though social interaction patterns were similar across sexes, reactions to those social interactions (e.g., satisfaction, loneliness, etc.) might have been different. Future research should continue to examine both the context and quality of peer interactions for adolescents with ASD, again benchmarked to typically developing peers, to best determine the impact of interaction patterns for development.

Similarly, though level of inclusion was comparable across sexes, we do not have subjective data on whether the programming is similarly meeting the needs of females and males. It is arguably these subjective appraisals of the environment that may be most important to mental health and development (Lazarus & Folkman, 1984), and should be examined in future research. This present study also did not collect data regarding the timing or developmental course of mental health challenges. Understanding the diagnostic odyssey for males and females regarding autism and mental health over time will be an important area for research including changes in symptoms and behaviors and the long-term impact of timing of diagnosis and treatment on social behavior. Further, in the present research we only had data on sex (male vs female) as reported by the parent. Future research will need to also consider the experiences of youth whose gender is non-binary (Strang et al., in press). Future research will need to also consider the experiences of youth whose gender is non-binary. Finally, it is important to note that the sample did not include students who receive school services in residential or segregated settings or students with ASD who are not served through an IEP.

These limitations are offset by a number of significant strengths. The sample used in the present study was larger and more racially and ethnically diverse than many other samples of adolescents with ASD. In contrast to many large-database studies, the larger sample in the present study did not come at the expense of precision in measurement; comprehensive phenotyping was conducted with each adolescent, and data were collected through multiple measures including direct testing, teacher report, and parent report. Similar patterns of findings regarding sex differences were observed across reporters. School-based social behavior is significantly under-studied in adolescents with ASD, and its inclusion is a strength of this study. Adolescents spend one-third of their day in school-based settings, yet most research is based in the clinic or relies on parent reports of social behavior (who may not be aware of behavior in schools). As the high school social context is a stepping stone for social contexts in adulthood (Aviles, Anderson, & Davilia, 2005), understanding social behavior in schools is significant and important. Future research is needed to better elucidate the nature of sex-specific vulnerabilities during this developmental period as well as to understand potential pathways to resilience.

Acknowledgements

This research was supported by the National Institute of Mental Health (R03 MH112783, PIs: DaWalt & Taylor) with core support from the National Institute of Child Health and Human Development (U54 HD083211, PI: Neul; U54 HD090256, PI: Chang). The work reported here also was supported by the Institute of Education Sciences, U.S. Department of Education [Grant R324C120006] awarded to UNC-Chapel Hill. The opinions expressed represent those of the authors and do not represent views of the Institute or the U.S. Department of Education.

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Table 1

Phenotypic Characteristics of High School Students with ASD (n=547) at Baseline using Multiple Imputation (MI; 37 imputed datasets)

	Females (n=76) M (Stand. Error)	Males (n=471) M (Stand. Error)	Pooled T value
Lieter Non-Verbal IQ ^a	80.27 (3.29)	84.78 (1.31)	-1.24
VABS Total ^b	77.28 (2.26)	75.54 (0.80)	0.94
Lifetime SCQ Total ^c	20.86 (0.99)	20.73 (0.41)	0.11
Current SRS Standard Score Total ^b	77.62 (1.84)	69.26 (0.53)	4.37 ***
Current SRS Raw Score Total ^b	86.33 (4.16)	90.53 (1.53)	-1.01
Presence of any internalizing diagnoses ^c (1=yes)	0.38 (0.09)	0.23 (0.04)	2.09 *
Presence of any externalizing diagnoses ^c (1=yes)	0.44 (0.09)	0.38 (0.04)	0.77

Note:

* Note: p<.05,

p<.001

^a = direct test

^b = teacher report

^c = parent report

Table 2

Teacher Report of Social Participation in Past 2 Weeks

	Females (n=76) M (Stand. Error)	Males (n=471) M (Stand. Error)	Pooled T value
# of social interactions in past 2 weeks	8.71 (1.74)	8.27 (0.58)	.24
# of Peers w/whom had social interactions in past 2 weeks	2.08 (0.35)	2.00 (0.12)	.26
Presence of at least one frequent social partner (>=5 interactions) in past 2 weeks (1=yes)	0.32 (0.08)	0.38 (0.03)	-0.67

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Table 3

Parent Report of Social Participation in Past 4 Weeks

	Females (n=76) M (Stand. Error)	Males (n=471) M (Stand. Error)	Pooled T value
Participate with friends in organized group	3.04 (0.20)	2.74 (0.09)	1.27
Participate with friends outside of school	2.13 (0.18)	1.89 (0.07)	1.20
Call or text friends	2.80 (0.25)	2.17 (0.09)	2.39*
Interaction on internet	2.85 (0.26)	2.47 (0.10)	1.39

Note:

*
p<.05

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