The peer relationships of girls with ASD at school: Comparison to boys and girls with and without ASD

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Abstract

Background—This study examines the social relationships of elementary school children with high-functioning autism, focusing on how gender relates to social preferences and acceptance, social connections, reciprocal friendships, and rejection.

Method—Peer nomination data were analyzed for girls with and without ASD (n=50) and boys with and without ASD (n=50). Girls and boys with ASD were matched by age, gender, and IQ. Each child with ASD was matched by age and gender to a typically developing classmate.

Results—Consistent with typically developing populations, children with ASD preferred, were accepted by, and primarily socialized with same-gender friends. With fewer nominations and social relationships, girls and boys with ASD appear more socially similar to each other than to the same-gender control group. Additionally, girls and boys with ASD showed higher rates of social exclusion than their typically developing peers. However, boys with ASD were more overtly socially excluded compared to girls with ASD, who seemed to be overlooked, rather than rejected.

Conclusions—Our data suggest a number of interesting findings in the social relationships of children with ASD in schools. Like typically developing populations, children with ASD identify

with their own gender when socializing and choosing friends. But given the social differences between genders, it is likely that girls with ASD are experiencing social challenges that are different from boys with ASD. Therefore, gender is an important environmental factor to consider when planning social skills interventions at school.

Introduction

Because social deficits are a primary concern for parents, children with ASD without an intellectual disability are often placed in general education classrooms to facilitate social opportunities with their typically developing classmates. Past findings, however, indicate that children with ASD are less socially integrated than their typically developing peers, that they spend less time socializing, and are more often on the periphery of social activities than other children their age (Kasari, et al, 2011). With fewer social experiences, these children have less time to practice and develop age-appropriate social skills. Consequently, the gap between typically developing children and children with ASD continues to widen, as the social deficits related to ASD appear more pronounced with age (Rotheram-Fuller, et al 2010).

Gender plays a major role in the social relationships of school-age children. Boys and girls primarily socialize in same-sex peer groups (Hall, 2010; Maccoby, 2002; Rose & Asher, 1999). These groups tend to differ in size, organization, and preferred activity. Boys tend to play in larger groups; they are more likely to focus on games with formal rules and to have a clear social hierarchy (Goodwin, 2006; Maccoby, 1999; Rose & Rudolph, 2006). Girls, on the other hand, tend to form smaller, more fluid, and more intimate groups focused on reciprocal friendship, conversation, and less structured activities (Blatchford, Baines & Pellegrini, 2003).

Even though it is widely accepted that gender differences exist in the social relationships of typically developing children (Goodwin, 2002; Maccoby, 1999; Talbot, 2010), the extent to which the core communication deficits of ASD are associated with different social relationship challenges for girls compared to boys remains unknown. Previous studies suggest that children with ASD prefer same-gender friends (Bauminger & Shulman, 2003; Kasari, Locke, Gulsrud & Rotherman-Fuller, 2010). However, the small number of girls with ASD in study samples, particularly in the higher functioning range (Volkmar et al., 1993), makes it difficult to generalize past findings to a wider population of girls with ASD. Consequently, research using an equal sample size of boys and girls with ASD is needed to identify similarities and differences in the social preferences and social acceptance of children with ASD.

Given the centrality of reciprocal friendships within girls' social networks, it seems possible that the social deficits associated with ASD could impact social connections and status among girls. As illustration, Chamberlain, Kasari, and Rotheram-Fuller (2007) identified one second-grade girl with ASD who was completely isolated and overlooked during lunch

and recess at the beginning of the school year. In a successful collaboration between the school providers and the parents, adults facilitated social activities both in and out of school, improving the girl's social status and connecting her with every girl in her classroom. Despite her social success, the child still demonstrated many differences from her typically developing peers. For example, the typically developing girls had intimate reciprocal conversations, whereas the little girl with ASD primarily used perseverative language without synchronizing to the group dynamics. So, even though the girl with ASD increased her social connections over the course of the school year, the strength of these relationships was uncertain. There were still significant concerns about the child's ability to form and maintain intimate long-term relationships (Chamberlain, et al., 2007). If children with ASD prefer same-gender peer groups just as children without ASD do, then girls with ASD may find themselves immersed in peer groups that have different implicit expectations than those of boys with ASD. Since our understanding of the social deficits associated with ASD is based on predominantly male samples, social skills interventions may be more geared toward boys. For girls, we may be overlooking specific gender-related social challenges.

The goal of this study was to build on our knowledge of the social relationships of children with ASD in schools by layering the construct of gender over previously examined social variables. Using an equal sample size of boys and girls, we explored the social nominations, acceptance, and connections, and the possible mitigating effects of gender on group salience, reciprocal friendship and rejection. Using an equal sample size of boys and girls the following research questions were examined: (1) Do girls and boys with ASD show same-gender group preferences similar to those of children without ASD? (2) Do children with ASD socialize in same-gender peer groups, and how salient are their relationships?, and (3) How does the rejection of girls with ASD compare to typically developing girls and boys with and without ASD?

Method

The current study is a secondary analysis of data that were selected from two earlier studies (AIR-B, 2012; Kasari et al., 2011). Both studies compared social skills interventions for students with ASD at schools. Data were collected from elementary school children with and without ASD, who were educated in the general education setting. Data from the first study (Kasari et al., 2011) were collected in classrooms in Southern California. In the second study (AIR-B, 2012), the data were collected in classrooms in four different US states (California, Washington, Michigan, and Maryland).

Participants

Each participant completed peer nomination data in their classroom, and was either (a) a child with ASD that met study criteria for inclusion or (b) was a typically developing same-sex classmate as one of the participants with ASD. In both of the previous studies, the nomination data were collected in the general education classroom within two months of the children with ASD meeting the criteria for participation in the study and before receiving treatment. The data were collected from typically developing students at the same time as

their classmates with ASD. Only data from children who gave their written assent and whose parents signed written consents for participation were collected.

The children with ASD that met the criteria to participate in both studies were educated in the general education classroom for a minimum of 80 percent of the school day, had a confirmed diagnosis of ASD [Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, Dilavore & Risi, 2002)], and did not have an intellectual disability — confirmed by having IQ scores greater than or equal to 70 (Stanford Binet-5, 2003). The typically developing students were same-age classmates of the children with ASD. No other demographic information was collected from typically developing students.

Matching procedure—Participants were selected from the original studies to create four equal-sized comparison groups (girls with and without ASD; boys with and without ASD). Due to the small number of girls with ASD that are typically represented in research samples, data from all girls in two data sets were selected for the current study (n=25; Kasari et al, 2011; AIR-B project, 2012). We matched boys with ASD by age, IQ, and city of residence to girls with ASD. Twenty-five males with ASD were randomly selected from a pool of boys that met the matching criteria. By randomly selecting the male group we were able to control for the potentially confounding effects of classroom differences. Consistent with previously reported findings, there were no significant behavioral differences in ASD symptomology when we matched the boys and girls with ASD by age and IQ (Table 1).

The boys and girls with ASD were matched by age and gender to a typically developing classmate. Each girl with ASD was matched to a randomly selected typically developing female classmate (n=25) of the same age ($\mu = 7.60$; sd = 1.04). As with the female group, boys with ASD were matched by age to a randomly selected typically developing male classmate. Therefore, the sample for our analysis included a total of four groups (n=100) with 25 participants each (Table 2.; girls with ASD; boys with ASD; typically developing girls; typically developing boys). Because of site differences in samples sizes, we did not have enough power for the one-way ANOVA to detect site differences on the outcome variables.

Measures

We used the nomination data to generate our primary outcome variables: social acceptance, social preference, social connections, social salience, and our secondary outcome variables: reciprocal friendship, and rejection. We first examined the acceptance, preference and connection scores without accounting for gender, and then we disaggregated these variables by gender to determine if the children in this sample preferred and primarily played in same-gender peer groups. This allowed us to build on what we already know about the social relationships of children with ASD in schools and to explore the relation between one's gender and having male or female relationships.

The Friendship Survey

The Friendships Survey (Cairns & Cairns, 1994) is a two-page questionnaire used to examine gender preferences in friendships and peer groups. In each class, the students were asked to use free recall and to list the classmates who they "like to hang out with."

Social preferences—The number of friends nominated creates the "social preferences" variable. The social-preferences variables accounted for the total number of nominations without discriminating between male and female. To examine whether or not the children preferred hanging out with same-gender peers, we disaggregated the social preference variable by gender to create two additional variables: "male-preference" and "female-preference."

Social acceptance—Social acceptance scores were calculated by determining the number of times each child was listed by a classmate as a friend. The number of received friend nominations was termed "social acceptance." In order to determine the number of male and female nominations received, the social acceptance variables were also disaggregated by gender. Two gender-variables were created to represent the number of times each child received friend nominations from a male or female classmate ("male-acceptance" and "female-acceptance").

Social connections—The connections variables allow us to identify who children play with in each classroom. Based on the Cairns' (1994) method, in every class, students wrote down the names of their classmates that like to hang out together. In addition to writing their own group of friends, children were encouraged to think about and list boys and girls that play together outside of their own friend circle. Using free recall to list groups allows the stronger or more prominent relationships to be reported more often than less salient friendships (Cairns and Cairns, 1994). First, each student was paired with every other student in the class. Next, we calculated the total number of times pairs of students were listed as hanging out together. Then we entered all scores into a bivariate correlation analysis to identify significant relationships among classmates. By doing this, we were able to identify which children play together regularly, thus creating the "social connections variable." To examine whether or not the children in our sample primarily hang out in same-gender social groups, the connection variables were disaggregated by sex to create gender-connection variables: "male-connections" and "female-connections."

Group Salience—We used the social network variables to examine group salience. Salience describes the strength of the relationships. Children that play together regularly had higher salience scores than children that play together occasionally. Following the procedure described in Kasari et al. (2010), raw social network centrality scores (the number of times a child was listed as belonging to a peer group) were normalized at the classroom level to control for classroom differences. The social network salience variables (SNS) are ratio scores, which were calculated by dividing children's raw centrality scores by the highest raw-individual score of the class.

Reciprocal friendship—Participants were asked to look at their list of classmates they "like to hang out with" and to circle the names of their three favorite friends. A friendship was reciprocal if two children choose each other as a top three favorite friend. The reciprocal friend variable was collapsed into two categories: "no friends" and "one or more friends."

Rejection—In addition to nominating their friends, students were also asked to write the names of students they "*don't* like to hang out with." This information was used to create the 'do not hang out' variables, which ultimately create an index of peer rejection.

Most of the children in the sample were not rejected (38%), or were rejected one time (23%). We collapsed the rejection scores into two categorical variables. Children in the low rejection category had zero or one rejection. Children in the high rejection category were rejected two or more times .

To test for gender, we disaggregated the "Do not like to hang out variable" by sex to create two categorical gender-variables (a) "Female: Do not like to hang out variable" (the number of times a subject was listed as a non-preferred friend by a female classmate); (b) "Male: Do not like to hang out variable" (the number of times a subject was listed as a non-preferred friend by a male classmate). Like the primary "Do not like to hang out variable," we collapsed the female and male variables into two categories: Low rejection (zero or one male or female rejection); high rejection (two or more male or female rejections).

Results

An exploratory analysis of the social-preference, -acceptance, and -connection variables, including the variables that were disaggregated by sex, were used to identify gender trends in our sample. Descriptive statistics (Table 3) suggest that all children preferred same-gender friends. Likewise, the children in our sample were primarily accepted and socially connected to same-gender classmates.

To control for differences in class sizes, we standardized nomination and connection scores by subtracting the individual scores from the class-median scores. Because it was predicted that children with ASD would have fewer friends than their typically developing classmates (Kasari et al., 2010), median scores were used to avoid the influence of low scores on class averages.

Social preferences

A 2x2 (group x gender) factorial ANOVA was performed to examine gender differences in boys' and girls' friendship preferences. Results indicated that both gender and ASD significantly predicted median-out scores (Gender: $F(1,96) = 4.71$, $\rho = .03$, $\omega^2 = .06$; Group: $F(1,96) = 3.90$, $\rho = .05$, $\omega^2 = .05$), but the interaction was not significant ($F(1,96) = 1.09$, $\rho = .30$, $\omega^2 = .02$). Girls nominated significantly more classmates as friends (male and female) than boys (Girls: $\mu = .29$, SD = 2.15; Boys: $\mu = -.65$, SD = 2.70). Likewise, typically developing children nominated more classmates as friends ($\mu = 1.06$, SD = 2.22) than children with ASD ($\mu = -.34$, SD = 2.72). The mean scores indicate that girls, on average,

nominate significantly more friends than do boys. Yet additive effects of ASD indicate that, despite being female, the nomination patterns of girls with ASD — being significantly different from the male and female control group — were more similar to boys with ASD.

To examine the relation between group and gender, and female-preference, we calculated the proportion of female-preferences, which was transformed (proportion/1-proportion) to create a logistic female-preference variable. A regression analysis was performed using logistic female-preference scores as the outcome variable. The interaction term was non-significant and removed from the model. Gender, however, was a significant predictor of logistic female-preference scores ($F (1,88) = 30.04$, $\rho =.001$, $\omega^2 = .07$). The main effects of autism were non-significant, indicating that girls with and without ASD have a significantly larger proportion of female nominations than male nominations.

Social acceptance

A regression analysis was performed, using the median-preference score as a covariate. Results indicated that group and median-preference scores significantly predicted median-acceptance scores (Group: $F, (4, 95) = 15.10$, $p<0.001$, $\omega^2 = -.09$; median-out: $F, (4, 95) = 6.54$, $\rho = .01$). By controlling for median-preference scores, typically developing children ($\mu = .87$, SD = 1.91) were listed as a friend significantly more than children with ASD ($\mu = -.89$, SD = 2.11). Gender and the interaction effects were non-significant (Gender: $F, (4, 95) = 15.10$, $p = .48$, $\omega^2 = .01$; $F, (4, 95) = .41$, $\rho = .53$, $\omega^2 = 1.35$).

Female–acceptance scores were calculated using the same procedure that was used to create female-preference scores. A regression analysis was performed using logistic female-acceptance scores as the outcome variable. Results indicated that the main effects of gender, group, and the interaction term were significant. Girls with and without ASD had a significantly larger proportion of female-acceptance ($F (1,79) = 21.23$, $\rho =.001$, $\omega^2 = .03$), and typically developing boys and girls had a significantly larger proportion of female friend nominations than children with ASD ($F (1,79) = 5.44$, $\rho =.02$, $\omega^2 = .001$). The significant interaction term indicates that, despite a majority of their friendships being female, girls with ASD receive significantly fewer female nominations than the typically developing girls ($F (1,79) = 4.83$, $\rho =.03$, $\omega^2 = .002$). In contrast, boys with ASD were not significantly different from the typically developing boys.

Social connections

A factorial ANOVA was used to examine between-group differences in the social connection variables. Gender, group (ASD vs. Typical), and a gender x group interaction were entered into the model as predictor variables, and the median-social connections scores as the outcome variable. Results indicated that having ASD significantly predicted median-connection scores ($F, (3,96) = 6.64$, $\rho = .01$, $\omega^2 = .10$). Children with ASD had significantly fewer connections ($\mu = -.93$, SD = 2.57) than the typically developing contrast group ($\mu = .31$, SD = 2.52). Gender and the interaction of gender and group were not significant (Gender: $F, (3,96) = 0.09$, $\rho = .77$, $\omega^2 = .02$; Interaction: $F, (3,96) = 1.35$, $\rho = .25$, $\omega^2 = .01$).

A linear model was used to examine whether or not the children in our sample segregated into same-gender groups when socializing. Female-relationships scores were calculated by subtracting male-connection scores from female-connection scores. Positive scores indicated that a child's primary playgroup was female. Group (ASD vs. typical), gender, and the interaction (group x gender) were entered into the model as predictor variables, and female-relationships were entered as the outcome variable. Gender was a significant predictor of female-relationships (F (3,96) = 45.45, ρ < .001, ω^2 = .80), with girls with (μ =0.96, SD = 3.06) and without ASD (μ = 1.28, SD = 2.47) having significantly more female relationships than male relationships. Neither ASD nor the interaction significantly predicted female relationships (ASD: F (3,96) = 1.19, ρ =.28, ω^2 = .00; Interaction: F (3,96) = 3.01, ρ =.09, ω^2 = .07).

Without accounting for gender, prior research found that, in addition to being less accepted by their peers, the social relationships of children with ASD were less prominent than their typically developing classmates (Kasari et al., 2010). Using the same social variables as the prior study, we seek to examine whether being boy or a girl has potential to increase the salience of children's relationships at school.

Secondary outcomes

Social salience—An ANCOVA, using SNS as the outcome variable, was used to examine the relation between connection and SNS scores. Group (ASD vs. Typical), gender, and the interaction of (group x gender) were entered into the model as predictor variables, and connection scores were entered as the covariate. Results indicated that the covariate, connection, was significantly related to SNS (F, (4,95) = 5.12, ρ = .03). There was also a significant effect of group after controlling for social connection scores (Group: F, (4,95) = 19.39, ρ = .001, ω^2 = 0.13). The social connections of children with ASD were significantly less salient compared to the typically developing children. The effects of gender and the interaction were not significant.

Reciprocal friendships—While it may be desirable to have many friends, prior research indicates that having just one friend can be beneficial for social development (Rubin et al., 2011). To examine the odds of having mutual friends, group (typically developing or ASD), gender, and the interaction (group vs. gender) were entered into a binary logistic regression model as predictor variables, and the reciprocal friend variable as the outcome variable. Results indicated that group significantly predicted reciprocal friendships. The odds (.07, (.024, .230), ρ < .001) of having a mutual friend were significantly lower for children with ASD compared to typically developing children. Gender and the group-by-gender interaction were not significant.

Rejection—Frequency statistics (Figure 1) show that boys with and without ASD were rejected more frequently than girls with and without ASD. Also, children with ASD were rejected more frequently than the typically developing control group. To test for significant differences in rejection, group (typically developing; ASD), gender, and the interaction (group x gender) were entered into a binary logistic regression model as predictor variables, and "Do not like to hang out" was entered as the outcome variable. The odds ratio (2.81,

(1.18,6.70), $p < .02$) indicated that gender significantly predicted rejection. Thus boys with and without ASD were rejected significantly more often than girls with and without ASD. The odds ratio (2.38, (1.0, 5.69), $p < .05$) tells us that group was also significant and that having ASD increased the likelihood of being listed as non-preferred friend. The interaction term and group were non-significant, so the effects of gender and diagnosis are additive.

Two binary logistic regressions were used to test the probability of one group having more male or female rejections. In the first model, group (typically developing; ASD), gender, and the interaction (group x gender) were entered into a binary logistic regression model as predictor variables, and "Female: Do not like to hang out" was entered as the outcome variable. The interaction term was not significant and was removed from the model. The odds ratio (5.92, (1.95, 17.98), $p < .002$) indicated that gender significantly predicted "Female: Do not like to hang out." Boys with and without ASD were significantly more likely than girls with and without ASD to be rejected by girls. In the second model, "Male: Do not like to hang out" was listed as the outcome variable. The interaction term was not significant and removed from the model. The odds ratio indicated that having ASD increased the likelihood of being rejected by boys, however the results did not reach significance (0.31, (0.091, 1.05), $p < .06$). Group was not significant (0.78, (0.38, 3.62), $p < .78$). Therefore, the additive effects of group and diagnosis only existed in terms of female rejection.

Discussion

The goal of this study was to take gender into account when examining the social relationships of girls and boys with ASD. Children's social relationships were measured with peer nomination data yielding information about social preferences and acceptance, social connections, and social salience, reciprocal friendship, and rejection. Despite existing gender differences in the way that typically developing children socialize, the social challenges associated with ASD were equally present in male and female groups. Even though girls and boys with ASD hung out in different groups, female groups were no better than male groups at buffering their social difficulties.

A large literature documents that boys typically like to hang out with boys and girls like to hang out with girls. Our results are consistent with this pattern, indicating that children with ASD primarily socialize with their same-sex classmates. Within the gendered groups, unique patterns emerged. All girls cast a wide net when choosing friends, and as a result, typically developing girls received a greater proportion of female friend nominations than all other groups. Perhaps due to this pattern, the girls with ASD should have had more opportunities than boys with ASD to have friends and to socialize. Yet, unlike the typically developing girls, the friendship patterns of girls with ASD were jointly influenced by both gender and diagnosis as they perceived themselves as having fewer friendships and were listed as a friend less frequently than the female contrast group.

Our examination of the social connections indicated that the children with and without ASD in our sample segregated by gender when they played at school. The typically developing boys and girls, however, had more regular playmates than children with ASD. In addition,

the typically developing children were more socially integrated into stable peer groups, with the female group having the greatest social presence. The children with ASD, on the other hand, had fewer regular playmates and were more likely to be at the periphery of social groups. Thus, their belonging to a group could be more contingent on being friends with a more-salient group member.

Girls with and without ASD were less likely to be listed as non-preferred friend compared to both male groups. Yet in spite of the typically developing girls having a larger social presence — giving girls with ASD more opportunities to join social groups — it seemed that girls with ASD were unable to access all of the social benefits associated with being female. Girls with ASD were less likely to be listed as a friend, as a member of a group, or as a non-preferred friend. Consequently, girls with ASD were neither accepted nor rejected, instead they appeared to be ignored or overlooked. Given the importance of reciprocal friendship among girls, the isolation associated with being left off of the social radar places girls with ASD at particular social and emotional risks (Rose and Rudolph, 2006). In contrast to girls, boys with ASD were rejected more frequently than all other groups, suggesting that their social exclusion may be easier to detect than the exclusion of girls with ASD. Thus, there may be different clinical implications for girls with ASD than for boys with ASD.

Despite their similarities, our findings indicate that boys and girls with ASD socialize in different groups. Consequently, the social demands placed on boys with ASD are different than those placed on girls. Given the deficits associated with ASD, the lower social acceptance and social prominence of girls with ASD may be due to challenges with navigating the salient characteristics of female relationships, such as interpreting subtle nuances, being intimate, and conforming with group interests (Dean, Adams & Kasari, 2013). In contrast, male relationships are associated with fewer language demands, and instead place more demand on competitive play (Blatchford, Baines, & Pellegrini, 2003). Considering these differences, our findings suggest that gender is an important environmental factor that should be considered when designing social skills interventions for children with ASD in schools. More specifically, clinicians should be mindful of the specific skill sets that are needed to gain access into a particular social group.

While we were able to identify clear gender-trends in the social preferences and organization of our sample, this study does not allow us to identify gender-specific social behaviors that contributed to social inclusion. Because gender differences exist in the way that boys and girls socialize (Maccoby, 2002), with verbal interactions being more important in female relationships, the language and social communication deficits associated with ASD may, in some ways, be more detrimental to girls than to boys, even though the girls with ASD showed less active rejection. A closer inspection of how girls and boys with ASD behave in a natural environment is needed to identify underlying mechanisms that lead to fewer friends and lower social status.

A limitation to our study is that the average IQ of the children with ASD was about 10 points below the normative average. Consequently, there may be confounding effects of IQ that we were unable test in this study. Yet, all of the children in our sample were included in the general education setting. Therefore, despite the IQ discrepancy reported, this study

provides a realistic picture of the dynamics of inclusive classrooms, and the social relationships of children with ASD in schools.

Conclusion

To our knowledge this is the first study to examine gender in the social relationships of children with ASD at school. Our findings identified gender-differences existing in the school environment for typically developing girls and boys, and highlight some additional social challenges that girls with ASD may have compared with boys with ASD. Building our awareness about how these differences affect children with ASD may help us to be more sensitive to the unique needs of girls.

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- Like typically developing populations, boys and girls with ASD primarily socialize in same-gender groups.

- Girls with ASD were unable to access all the benefits of being female.

- The social exclusion of boys with ASD is more overt than girls with ASD, who appear to be neglected or overlooked.

- Both groups of children with ASD are less accepted, have fewer friends, and lower social prominence. Yet, girls with ASD are seeking acceptance into groups that are different from boys, and consequently may be experiencing unique social challenges.
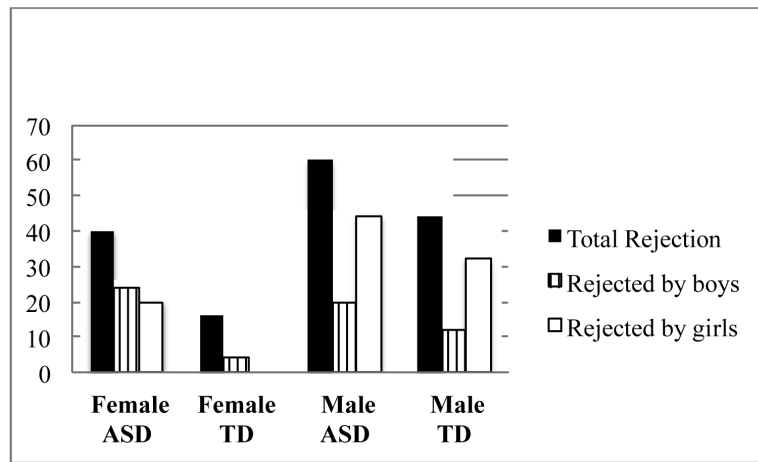
Figure 1.
Percent of participants who where rejected two or more times.

Table 1

Demographic characteristics of the children with ASD: Mean scores and standard deviations of ADOS and IQ scores

	Female mean (sd)	Male mean (sd)	sig. (2-tailed)[***]
Social communication[*]	16.09 (14.03)	13.05 (4.66)	0.34
Imagination/ Creativity[*]	.64 (.58)	.96 (.81)	0.13
Stereotype behaviors[*] /Restricted interests	3.57 (3.89)	3.50 (2.22)	0.94
IQ[**]	90.72 (13.81)	91.76 (13.75)	0.79

[*] Scores were derived from the ADOS module 3

[**] Stanford Binet-5 abbreviated IQ scores

[***] P-value from independent samples t-test

Table 2

Descriptive statistis of the sample: Information about age, grade, and class size

Site		Female		Male	
		ASD	TD[*]	ASD	TD[*]
Southern California	N	15	15	15	15
	Age[**]	7.5 (1.13)	7.6 (1.18)	7.7 (1.03)	7.5 (1.19)
	Age range	6-10	6-10	6-10	6-10
	Grade range	1-5	1-5	1-5	1-5
	Class size[**]	25.13 (5.33)	25.13 (5.33)	25.67 (3.75)	25.67 (3.75)
Maryland					
	N	5	5	5	5
	Age[**]	8.20 (.84)	8.20 (.84)	8.20 (1.5)	8.00 (1.2)
	Age range	6-9	7-9	6-9	6-10
	Grade range	1-5	1-5	1-5	1-5
	Class size[**]	25.40 (2.88)	25.40 (2.88)	25.40 (2.88)	25.40 (2.88)
Michigan					
	N	2	2	2	2
	Age[**]	7.50 (.71)	7.50 (.71)	8.0 (0)	8.0 (0)
	Age range	7-9	6-8	7-9	6-8
	Grade range	1-4	1-4	1-4	1-4
	Class size[**]	20.67 (5.03)	20.67 (5.03)	35.33 (20.50)	35.33 (20.50)
Seattle					
	N	3	3	3	3
	Age[**]	7.00 (1.0)	6.6 (1.2)	7.7 (1.2)	7.7 (1.2)
	Age range	8-8	7-8	8-8	7-8
	Grade range	2-3	2-3	2-3	2-3
	Class size[**]	26.00 (4.24)	26.00 (4.24)	23.00 (4.24)	23.00 (4.24)

[*] TD = Typically developing

[**] Mean (Standard Deviation)

Table 3

Descriptive statistics: Mean scores and standard deviations of friend nomination variables (out and in) and connection variables dissaggregated by gender.

	Social Preferences			Social Accptence			Social Connections		
	Total	**Girl**	**Boy**	**Total**	**Girl**	**Boy**	**Total**	**Girl**	**Boy**
Female									
TD[*]	5.00 (2.0)	4.56 (1.9)	.44 (.77)	4.28 (2.3)	3.60 (2.2)	.52 (.71)	3.72 (1.8)	3.32 (2.0)	.40 (.87)
ASD	3.64 (2.4)	2.84 (2.0)	.80 (1.4)	1.76 (1.5)	1.16 (1.1)	.28 (.61)	2.72 (2.62)	2.32 (2.5)	.40 (.91)
Male									
TD[*]	4.20 (2.2)	1.04 (1.5)	3.32 (2.0)	3.32 (1.9)	.56 (.77)	2.60 (1.8)	3.48 (2.2)	.24 (.52)	3.24 (2.0)
ASD	3.48 (3.3)	1.20 (1.8)	2.40 (1.8)	1.76 (1.8)	.36 (.57)	1.28 (1.3)	1.68 (2.1)	.16 (.47)	1.52 (1.9)

[*]TD = Typically developing